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A Cross-Cultural Study of Consumer Switching in the Retail Banking Services Sector

A thesis submitted to The University of Manchester for the degree of

Doctor of Business Administration

in the Faculty of Humanities

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List of Abbreviations

ABC	Actual Behavioural Control
ABS	Actual Switching Behaviour
AFD	Asymptotically Distribution-free Estimator
AMOS	Analysis of Moment Structures; Product name of a software tool
ATMs	Automated Teller Machine(s)
ATT	Attitude towards Switching
ATTsum	Attitude towards Switching (summated scale)
AVE	Average Variance Extracted
BB	Buying Behaviour
BIS	Behavioural Intention to Switch or Switching Intention
BISsum	Behavioural Intention to Switch or Switching Intention (summated
	scale)
BT	Balance Theory
CA	Cronbach's Alpha (value)
C-c	Cross-cultural
Cf.	Compare
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CI	Confidence Interval(s)
CR	Composite or Construct Reliability
CRM	Customer Relationship Management
CBSSM	Comprehensive Banking Service Switching Model
СТ	Congruity Theory
COV	Cut-off Value
DBS	Development Bank of Singapore
DEM	Demographic (factor or variable)
DT	Dissonance theory
DV	Dependent variable
EFA	Exploratory Factor Analysis
E.g.	For example
Etc.	And so forth
FI / FIs	Fit Index or Indices
FIML	Full Information Maximum Likelihood
FSP / FSPs	Financial Service Provider(s)
FTM	Foundational theoretical framework or model
FUT	Future Orientation
GDP	Gross Domestic Product
GLM	Generalized Linear Model
GLOBE	Global Leadership and Organisational Behaviour Effectiveness

GOF	Goodness-of-Fit (index)
H / Hs	Hypothesis or hypotheses
l.e.	That is
IGC	In-Group Collectivism
IGCsum	In-Group Collectivism (summated scale)
INC	Inconvenience
IV / IVs	Independent variable(s) or predictor(s)
LISREL	Linear Structural Relations
LR / LRs	Literature review(s)
LRM	Linear Regression Modelling
LV / LVs	Latent variable(s)
MBS	Manchester Business School
MCAR	Missing Completely At Random
MI	Modification Index
MLE	Maximum-Likelihood-Estimation
Mplus	Product name of a software tool
MV / MVs	Missing value(s) or data
NFI	Normed Fit Index
NVivo8	Product name of a software tool
OCBC	Overseas Chinese Banking Corporation
OV / OVs	Observed variable(s)
Р	Proposition
P&P	Predisposing and Precipitating (factors)
PAS	Past Switching
PAE	Past Experience of Switching
PAF	Past Frequency of Switching
PBC	Perceived Behavioural Control
PBCsum	Perceived Behavioural Control (summated scale)
PER	Performance Orientation
PERsum	Performance Orientation (summated scale)
POD	Power Distance
POSB	Postal Bank of Singapore
PRC	Pricing Issue(s)
ΡΤΜ	Proposed theoretical model or framework
Q	Survey item (or Question)
RA	Regression or Regression Analysis
RB / RBs	Retail Bank(s)
RBS	Retail Banking Service(s)
RBSPs	Retail Banking Service Provider(s)
RI / RIs	Research Instrument(s)
RM / RMs	Research Method(s)
RMSEA	Root Mean Square Error of Approximation

SCO	Switching Costs
SCR	Screening
SEF	Service Failure(s)
SEFsum	Service Failure(s) (summated scale)
SEM	Structural Equation Model (or Modelling)
SEPRO	Service Provider(s)
SIM	Singapore Institute of Management
SMU	Singapore Management University
SP	Social Psychology or Social Psychological
SPSS	Statistical Product and Service Solutions; product name of a software
	tool
SRP	Singapore Resident Population
Sum	Suffix (for summated scale variables only)
SUN	Subjective Norms
SUNsum	Subjective Norms (summated scale)
ТАСТ	Target, Action, Context, Time
TLI	Tucker-Lewis Index
ТРВ	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
TRU	Lack of Trust
TRUsum	Lack of Trust (summated scale)
UOB	United Overseas Bank
UNC	Uncertainty Avoidance
US	United States of America
V	Variable
VAS	Variety-seeking or seeker
VIF	Variance Inflation Factor
Vs.	Versus or against

List of Measures and Symbols

b	Regression Coefficient
	SPSS-specific definitions used in Appendices:
	<i>B</i> = unstandardised coefficient; beta = standardised coefficient
df	Degrees of Freedom
DFBeta	Number of Standard Errors
F	F-value
Ν	Sample Size
N-N	Non-Normality
n-n	Non-normal or non-normally (distributed)
r	Bivariate Correlation Coefficient
r ²	Squared Bivariate Correlation
R	Multiple Correlations
R ²	Squared Multiple Correlations
p	p-value
X ²	Chi-square(d)
$A \leftrightarrow B$	Correlation
$A \rightarrow B$	Effect of A on B
A ← B	Effect of B on A
АхВ	Interaction Term
	Absolute Value

ABSTRACT

The retail banking services sector, a key driver for global economic growth, faces drastic challenges, such as globalised competition and continuously changing customer expectations that call for an in-depth understanding of customer switching, particularly in Asia's emerging markets. Research shows that minor reductions in switching can notably enhance profitability. Yet only insufficient or fragmented research to explain switching exists. For this study titled "A Cross-Cultural Study of Consumer Switching in the Retail Banking Services Sector" at The University of Manchester, completed in September 2014, Frank Siegfried identified the theory of planned behaviour as the most suitable framework, while Singapore served as a test bed in view of its diverse population. A qualitative pilot study was conducted (February to April 2010), consisting of 22 semi-structured interviews, in which a suitable definition of switching and a better understanding about the crosscultural context of this study were developed. These insights were instrumental in the design of a new theoretical model, built on constructs that had not been combined in a single framework before, applying constructs of the theory of planned behaviour as the foundational framework, and subsequently integrating the concept of past behaviour, selected cultural dimensions from the GLOBE model and four distinct predisposing and precipitating factors.

Next, a quantitative study was conducted (January to May 2013) and, after data cleaning, a quasi-representative sample of 1,431 cases was subjected to analysis. For comparability with other studies, both regression analysis (RA) and structural equation modelling (SEM) were performed. Notable results that were consistent in RA and SEM include: Attitude towards switching (attitude) successfully explained switching intention. Subjective norms had a positive effect on attitude, which implied a mediated effect of subjective norms on switching intention. Contradicting the initial hypothesis, a significant effect of perceived behavioural control on switching intention was negative. Past behaviour had a significant, but weak positive effect on attitude and switching intention, as well as an indirect positive effect on switching intention, mediated by attitude. Lack of trust positively affected switching intention. Service failure had a strong positive effect. Performance orientation had a moderately strong effect on perceived behavioural control. High in-group collectivism negatively affected service failure.

These results constitute the new *Comprehensive Banking Service Switching Model* (CBSSM). Interestingly, a large number of constructs and construct paths that played an important role in the literature could not be confirmed as significant contributors to the model. Overall, tests of model fit still showed a significant contribution of the proposed extensions to the foundational model.

Weighting the importance of various constructs in a single framework enhances the understanding of switching of retail banking services in Singapore and offers new insights for strategic planning, particularly in the areas of branding, marketing, service operations and human capital management. Theoretical, methodological and managerial implications are discussed in detail.

DECLARATION

I declare that no portion of the work referred to in the thesis has been submitted in support of an application for another degree of qualification of this or any other university or other institute of learning.

Frank Siegfried, Singapore, 22. December 2014

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DEDICATION

My Wife

Mari-Paz Mamaril Siegfried

My Parents

Ilse & Peter Siegfried

My Children

Maribelle & Marc-Kevin Siegfried

My Brother

Ralph Siegfried with Ewa, Natalie and Melanie

My Grand Parents and closest Relatives

Gertrud & Erich Siegfried Elisabeth & Kurt Schweinefleisch Ingeburg & Erwin Groeschl Helga & Guenter Schweinefleisch Heidrun & Klaus Schweinefleisch

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Your patience, advice and help were my inspiration to fulfil my dream.

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Singapore, 22. December 2014

CHAPTER 1

RESEARCH SETTING AND SWITCHING BEHAVIOUR

CHAPTER 1: RESEARCH SETTING AND SWITCHING BEHAVIOUR

1.1 Introduction

The *retail banking services* (RBS) sector, a key driver of global economic growth¹, suffers from a considerable decline in customer loyalty² (El-Manstrly, Paton, Veloutsou, & Moutinho, 2011; Sullivan et al., 2012). More precisely, the RBS sector currently faces both a greater mix and degree of challenges than ever experienced before (Sullivan et al., 2012). Internationalisation, technological innovations (Byers & Lederer, 2001; Devlin, 2001a; Mehra, 1996; Murray, 1988; Worthington, 2004), more products and services being offered through the internet (Gonzalez & Guerrero, 2004) and diminishing protection mechanisms e.g., lower regulatory barriers and market imperfections (Mehra, 1996) changed the competitive landscape permanently. Moreover, deregulations in the 1980s led not only to more competition between retail banks (RBs), but also to rivalry with other financial service providers (FSPs) and non-bank institutions (Hull, 2002).

Consequently, increased competition forces RB to enhance competitive actions when fighting over their customers (Devlin, 2001a; El-Manstrly, Paton, Veloutsou, & Moutinho, 2011; Ernst & Young, 2010a; Worthington, 2004) and market players aggressively try to increase their shares by enticing customers away, leading to an unprecedented and substantial increase of customer churn rates (Hull, 2002; O'Loughlin & Szmigin, 2006; Rosenberg & Czepiel, 1984). Besides, the loss of trust in FSPs in the course of the economic crisis (Sullivan et al., 2011; Sullivan et al., 2012) adds to the increase of customer *switching*³. New trends in consumer behaviour

¹ The RBS sector remains important for the Financial Services industry (Recklies, 2009), which is a major part of the global services sector (Mashayekhi, 2012; United Nations, 2012; Worldbank, 2013), contributing 63.9% to the global Gross Domestic Product (CIA, 2013). The global services sector is expected to become even more important (Michel, Brown, & Gallan, 2008) by steadily growing in both developed and emerging economies (Lovelock, Wirtz, & Chew, 2009). Particularly, the significance of Asian banks for the world economy should grow since banking in Asia offers the highest returns on equity compared to other regions (Schlich et al., 2012).

² Customers planning to *switch* banks increased from 7% to 12% since 2011 (Ernst & Young, 2012).

³ In a survey among senior executives, 85% of participants confirmed that public *trust* in business deteriorated (Bonini, Court, & Marchi, 2009, p. 1). In the US, *trust* in nearly every industry segment fell, but banking suffered the biggest decline e.g., for 35-to-64-year-olds, the percentage of people who *trust* their bank fell from 69% to 36% (Edelman, 2009, p. 2). In Europe, approximately 45% of respondents stated that their *trust* in the banking industry was negatively

characteristics also added to the adverse situation: customers change their needs fast (Krishnan, Ramaswamy, Meyer, & Damien, 1999) and become more demanding. Given their experiences with top consumer brands like Apple and Amazon is a reason why RBS customers become disloyal (Sullivan et al., 2012). Further, the emergence and considerable growth of online services results in a decrease of customer loyalty (Keaveney & Parthasarathy, 2001) because internet customers face less *switching* barriers related to the loss of personal interactions and relationship with bank employees (Burnham, Frels, & Mahajan, 2003). Finally, increasing consumer education leads to a decline in loyalty as consumers establish and manage highly personalised portfolios of financial products and services offered by different institutions (VRL, 2009c). Since then, the number of customers who are willing to *switch* RBS is rising (Attensity, 2012; Clemes, Gan, & Zhang, 2010; du Toit, Burns, & de Gooyer, 2012; Sullivan et al., 2012).

Although RBS providers (RBSPs) struggle to differentiate product and service portfolios to retain customers (Stewart, 1998), they do not sufficiently focus on customer interactions, consumer switching (Gerrard & Cunningham, 2004) and product and service benefits (Sullivan et al., 2012). In 2011, PricewaterhouseCoopers (PwC) highlighted that RBs are too organisation-centric and should adopt new, customer-centric business models, integrated around customer needs to stay competitive (Garvey, Pollini, Hernandez, & Hoffman, 2011). Research by A.T. Kearney on the future of RB suggests that successful players in this industry have to find ways to develop business models tailored to the needs of individual customers (Eistert, Buhl, Roeder, & Fridgen, 2012).

One reason why this has not happened yet could be the prevailing lack of knowledge due to the shortage of research in this field (Bansal, 1997), because many FSP marketers claim that they still lack information about consumer behaviour, how to create customer value and optimise relationships with existing clients (Hinshaw, 2005). Despite the relative importance of customer churning in

affected by the financial crisis (Ernst & Young, 2010b, p. 6). *Trustworthiness* of bank employees declined globally on average from 45% to 37% (Hofmans & Eisenblatter, 2009, p. 3).

banking, it seems surprising that there is only little research carried out by either FSPs or consulting firms, given that RB find it difficult (i) to reverse churning, (ii) to differentiate product and service portfolios and to revive their branding position (Sullivan et al., 2012). None of the studies that the researcher reviewed to-date tried to mirror the real-world complexities of individual consumer behaviour by assuming a holistic perspective. Several studies (Bansal, 1997; Bansal, Irving, & Taylor, 2004; Baumann, Burton, & Elliott, 2005; Colgate & Hedge, 2001; El-Manstrly et al., 2011; Jamal & Naser, 2002; Mokhlis, Mat, & Salleh, 2010) take multiple influencing factors into account, but these efforts lack the development of a comprehensive and integrated model e.g., considering the inferences of globalisation and migration that led to an unprecedented increase in diversity in today's customer bases (Laroche, Ueltschy, Abe, Cleveland, & Yannopoulos, 2004; Sam, Vedder, Liebkind, Neto, & Virta, 2008).

This researcher believes that contemporary knowledge in this field is too fragmented to improve real-world practices and differentiation strategies in the RBS sector. Thus, it would be of interest to propose a theoretical framework that combines multiple aspects of previous models and is capable of better explaining the factors that possibly trigger *switching* of individuals in the RBS context. Such a framework could provide useful new insights for strategic or tactical planning activities of RB, in particular in the areas of marketing and service operations. Above all, if this framework could also explain how cultural differences possibly influence *switching* behaviour (de Wit & Meyer, 2010; Gruber, 2011).

The purpose of this doctoral study is therefore to develop an enhanced model and to close some of the existing gaps between real-world needs and the contemporary body of knowledge. This study aims to support RB managers in strategic planning processes with the aim to reduce churn rates among existing customer bases. In that sense, results are expected to help practitioners to improve or prioritise strategic responses to meet customer demands. New insights derived from this study could also benefit customers by enabling banks to offer privileges, such as discounts as well as other customer-centric services. Although this investigation focuses on RBS, this researcher hopes that his study will provide valuable insights for other service-oriented endeavours within the retail industry and beyond e.g., in the education, healthcare or public services sector. Further, the researcher hopes that his fieldwork generates interesting new insights to on-going cross-cultural (c-c) research as well as to deepen the understanding of qualitative and quantitative research methods (RMs).

1.2 Definitions of Key Terms

FSPs describes institutions whose main business is in financial services, including one or more of the following: RB, merchant banking, investment banking, financing, insurance, securities dealing, money-, futures- and prime brokering and asset / fund management, including hedge funds (Monetary Authority of Singapore, 2013). Within the FSP sector, RBs are companies or business units that target private (individual) or smaller business customers. Typical characteristics are a high number of customer relationships, recurrent identical customer processes and comparably more annual customer interactions (relative to other FSPs) e.g., by means of using current-, savings- or investment-accounts, Automated Teller Machines (ATM), credit or debit cards, or loans (Bartmann, Walter, Wild, & Wimmer, 2003; Winter, 2002). Edvardsson, Gustafsson, and Roos (2005) provide a definition of *service* that can be specified for the RBS context as economic activities between RB and customers: in exchange for money, time, and effort, customers expect to obtain value from access to goods, labour, professional skills, facilities, networks and systems, however, without taking ownership of any of the physical elements involved.

1.3 Importance of Customer Switching

Increased *switching* strongly reduces profitability and limits future growth potential because customer acquisition costs are often amortised only after customers stay with FSPs for a certain amount of time (Chen & Hitt, 2002). In the field of consumer *switching*, Rosenberg and Czepiel (1984, p. 45) showed that the costs of customer relationship management (CRM) for acquiring new customers can be five times

higher as opposed to retaining them. Reichheld and Sasser (1990, p. 105) found that an increase in customer retention of **5%** could result in up to **100%** increased profitability: for branch deposits a **85%**, for credit cards a **75%** and for insurance brokerage a **50%** increase in the present value⁴ of pre-tax profit over a customer's lifetime was identified (Dawkins & Reichheld, 1990, p. 43). These numbers illustrate that service-oriented businesses should create loyal customer bases as retention is a key factor to long-term success⁵ (Rust & Zahorik, 1993; Zeithaml et al., 2006), and particularly for RB (du Toit et al., 2012), to which a better understanding of customer *switching* is essential (Bansal et al., 2004). Conversely, customers could benefit from personal and long-term relationships with their RBS, particularly in terms of gains arising from the personal relationships with bank employees (Gwinner, Gremler, & Bitner, 1998; Jones, Mothersbaugh, & Beatty, 2000), discounts (Peterson, 1995) and service customisation (L. L. Berry, 1995).

1.4 New Strategic Perspectives for Service Differentiation

RBs face important challenges due to high similarities regarding their product and service portfolios and thus, limited potential for brand differentiation. They encompass this problem by using advanced consumer segmentation to put a decisive extra to their differentiation (Athanassopoulos, 2000), but do not sufficiently distinguish themselves in terms of products and services (Sullivan et al., 2012). PricewaterhouseCoopers (2011) therefore concludes that RBs should adopt new, customer-centric differentiation strategies around customer needs to compete effectively⁶ and efficiently⁷ within their strategic group⁸ by creating unique and valuable customer services (Porter, 1985). Customers appreciate the value of services during service encounters (Bitner, 1990; Schneider & Bowen, 1985) and are unlikely to *switch* if they have a positive experience (Sullivan et al., 2012). Strategies

⁴ Assumption: 15% discount rate.

⁵ For example, sales margins can be increased because customers stay, even if charged higher prices (Miller & Friesen, 1986). Successfully selling a service to former customers is about two times more likely than selling to new customers (Thomas, Blattberg, & Fox, 2004).

⁶ Compete with high impact on competitive goals e.g., high gain in market share.

⁷ Compete with optimal resources on competitive goals e.g., specified gain in market share at low costs.

^{*} Group in which companies follow similar strategies and have similar competencies (Porter, 1979).

aimed at creating such positive experiences should consider multiple influencing factors of customer *switching* (Colgate & Hedge, 2001), weight these factors along their importance (Gerrard & Cunningham, 2000) and align value chain activities corresponding to those weighted factors (Barrena & Sánchez, 2009; Cadwallader, Jarvis, Bitner, & Ostrom, 2010). It is therefore critical that product and service portfolios of RBs are not only perceived as superior, but also as unique compared to the offerings of competitors (Bharadwaj, Varadarajan, & Fahy, 1993), i.e. no other service provider (SEPRO) can offer a similar value to its customers (Barney, 1991). Only if differentiation is persistently recognised as unique and valuable by customers, RBs can sustainably create above average returns (Bharadwaj et al., 1993). The researcher believes that one opportunity to provide additional and unique value could be to enhance the understanding of cultural differences within a bank's customer base.

1.5 Influence of Cultural Diversity

Malhotra et al. (2005) argue that for designing successful customer-oriented strategies, service-oriented businesses need to take cultural differences (cf. chapter 2.5.5.1) into account, most importantly their impact on consumer needs and behaviour (Brewer Doran, 2002; McCort & Malhotra, 1993; Stauss & Mang, 1999). Cultural values are not only widely acknowledged as important for managerial decision-making (Slater & Yani-de-Soriano, 2010) and as determinants of consumer differences (Clark, 1990; Tse, Belk, & Zhou, 1989), they also become more important for customer segmentation (Chudry & Pallister, 2002).

RBs are more internationalised than other service industries (Zeithaml & Bitner, 1996) as competitive stress in the countries of origin (Mehra, 1996) forced banks to diversify geographically (Donthu & Yoo, 1998; Porter, 1990). It is therefore strategically important (i) to understand foreign markets (Winsted, 1997), (ii) to convert challenges into opportunities for the enhancement of differentiation strategies (Mehra, 1996) and (iii) to monetise findings about cultural differences (Brewer Doran, 2002; McCort & Malhotra, 1993). The researcher claims that integrating culture into a model that aims to explain *switching* has the potential to

create uniqueness and value, particularly when dealing with a customer base that maintains a high level of cultural diversity.

In addition, an investigation concerned with the influence of culture has the potential to enhance contemporary strategic management frameworks because such theories tend to ignore cultural elements, even though cultural aspects influence the strategy of a company (de Wit & Meyer, 2010; Kuroiwa, 2006). Universal theories, mainly developed in the west and without the integration of cultural aspects, create cultural bias for theories in this field (Triandis, 1994). Consequently, it is necessary to test whether theories are more appropriate in some cultures than in others (de Wit & Meyer, 2010) and / or to adjust the theories to the cultural context (Triandis, 1994), which reinforces the researcher's intent to integrate cultural elements into his investigation.

1.6 Selection of the Research Environment

RBs play an important role for Singapore's transition into knowledge, innovation and service based economy. The service industry as a whole contributed **64.3%** to the domestic GDP in 2012, whereby FSPs contributed **11.1%** (Singstat, 2013, p. 12). A stable economic situation, beneficial legal and tax policies, and firm legal enforcement made Singapore the third largest financial centre in Asia⁹. To-date, **116** foreign and **6** local banks operate in Singapore (GuidemeSingapore, 2012; Monetary Authority of Singapore, 2013).

The Singapore resident population (SRP) of **3.8** million is ethnically diverse, consisting of **74.2%** Chinese¹⁰, **13.3%** Malays, **9.2%** Indians and **3.3%** other ethnic groups (Singstat, 2012, pp. 1-4). The proportion of Singapore citizens fell from **86%** (1990) to **64%** (2009), i.e. one in three residents is now a citizen of another country. The trend of growing cultural diversity is likely to continue, given Singapore's aspiration to balance its low fertility rates by increasing its population to **6.9** million

⁹ Behind Tokyo and Hong Kong (GuidemeSingapore, 2012).

 ¹⁰ Cultural diversity among ethnic Chinese from different provinces is rather high (Li, Tan, Cai, Zhu, & Wang, 2013). Singapore-Chinese come from a variety of provinces (Yew, 2013).

by 2030, primarily through immigration (People's Action Party, 2013, p. 66) from previous **3** million in 1990 (Singstat, 2010a, p. 1). English as the common language was established in 1965¹¹ (Iswaran, 2010). Different ethnic groups in Singapore most likely maintain their distinct cultural traits in the absence of impactful acculturation policies and administrative practices (Chua, 2003; Moore, 2000). Hence, Singapore is often viewed as a *salad bowl* rather than a *melting pot*, i.e. without one big macro culture (de Mooij, 2004). This context poses strategic and operational challenges for RBs attempting to fully realise the potential of such a heterogeneous customer base, although some RBs have started to address cultural issues e.g., by introducing *Islamic Banking* (Gerrard & Cunningham, 1997).

Although only few studies explored cultural diversity within one specific country (Nevid & Sta. Maria, 1999), c-c research within a single country (society), instead of cross-country research, seems more sensible because most countries to-date are already too multi-cultural to compare them based on their national cultures (Laroche et al., 2004).

Singapore also seems to be a country in which more than half of the population is inclined to *switch*: in a cross-national study¹², **6%** of the SRP stated that they are *likely* or *very likely* to *switch* their bank, and **47%** stated that they are *unsure about staying* with the current FSP (Sullivan et al., 2012, p. 9). One reason could be that in terms of customers' rating the RB experience, Singapore ranks among the **10** lowest countries worldwide with a share of only **34.4%** of customers stating a positive experience in 2013 (Yadav, Suvarna, & Gupta, 2013, p. 8). Further, the intention to *switch* is expected to increase due to educational advancements (VRL, 2009a), observable in the profiles of all ethnic groups in the SRP (Singstat, 2010b). Simultaneously, Singapore's immigration policies require that candidates eligible for citizenship and permanent residence must possess good educational qualifications (Ministry of Manpower, 2011; K. P. Tan, 2008).

¹¹ Prior to English being used as the official language, the lingua franca between ethnic groups (other than foreigners) was Malay.

¹² Total sample size: 18,000 RB customers in 35 countries; sample size for each individual country not revealed. Survey conducted in 2012.

1.7 Structure of this Doctoral Thesis

In *Chapter 2*, the researcher contrasts the relevant contemporary literature and encapsulates gaps in the current body of knowledge, starting with a discussion concerning his selection of a foundational theoretical model (FTM). He also identifies potential model enhancers by discussing *cultural theories, predisposing* and *precipitating* (P&P) *factors, lack of trust, past switching* and other concepts. *Chapter 3* outlines the research design and the researcher's choices based on his epistemological and ontological position. *Chapter 4* describes methodological details of the qualitative analysis, as well as findings and implications for his aim to propose a new theoretical model (PTM).

The application of such new insights in combination with findings from a complementary literature review (LR) leads to the proposition of a new theoretical model and the formulation of hypotheses in *Chapter 5. Chapter 6* offers details about the quantitative study, in particular concerning the design of the research instrument, the sampling strategy, the pre-testing period as well as the data collection and data cleaning processes. *Chapter 7* presents the researcher's approach to refine his theoretical framework by developing a structural equation model (SEM) that provides the best fit with his sample data, complemented by a regression analysis (RA). Results of the fieldwork of the study will be discussed in *Chapter 8,* whereas *Chapter 9* outlines limitations of this study as well as methodological, theoretical and managerial implications. *Chapter 10* summarises major contributions to knowledge and provides an outlook for future research.¹³

¹³ Positioning of chapters 3 to 5 was difficult. One alternative could be to have only one methodological chapter. However, this option has the disadvantage that results of chapter 4 would not be integrated in the methodology part of the quantitative analysis. Further, if they were integrated, this would have led to presenting results of the qualitative study before the qualitative study is actually outlined, deteriorating the chronological order.

CHAPTER 2

LITERATURE REVIEW

CHAPTER 2: LITERATURE REVIEW

2.1 Discussion of Approach

2.1.1 Purpose and Objectives

The researcher believes that academic excellence demands the consideration of a wide spectrum of concepts and theories (models) before significant conclusions and generalisations can be drawn when trying to solve problems of practical relevance. Thus, he aspires to develop a broad theoretical framework drawn from a wide range of existing concepts and theories with the objective of deriving hypotheses capable of addressing real-world needs. By identifying gaps in the contemporary body of knowledge and integrating complementary or context-related concepts and theories into a well-established framework, the researcher seeks to close some of the aforementioned knowledge gaps, and to contribute to the understanding of *switching* as well as to research on cross-cultural (c-c) behaviour.

Since this researcher wants to choose the best theory from a wide range of possible options, he applies a funnel approach where he starts with the selection of an academic field, followed by the choice of a relevant sub-set of theories to choose one as the FTM. The goal of this chapter is therefore to outline this narrowing process, in which he presents social psychology (SP) as the relevant discipline because it contains concepts, theories or models dealing with human behaviour and offering explanations about the factors that lead to particular actions. Within this academic discipline, the researcher identifies the theory of planned behaviour (TPB; Ajzen, 1991) as a framework that is both sufficiently relevant for the purpose of his study and applicable as to its *reliability* and ease of use.

After describing the TPB, the researcher critically evaluates and adapts it to his study by scrutinising past applications, recommendations and critiques found in the literature as well as personal observations, before discussing alternative relevant concepts and theories for their potential integration. This leads to the design of a preliminary model, which will be explored in the qualitative part (cf. chapter 4) to reveal additional insights in order to propose an enhanced framework (PTM) that can be tested in the quantitative part of the study (cf. chapters 5 - 7). In the sections that follow the researcher outlines the structure and process for the literature selection, discusses definitions for the behaviour of interest and analyses previous investigations of this behaviour in various research contexts.

2.1.2 Efficient Structure and Reference Selection

The researcher reviews how the various theories evolved and evaluates their strengths and weaknesses before selecting a FTM which in his view offers the best possible fit for his research inquiry. Next, the researcher explores roots and developments of the theory in question, followed by an in-depth explanation of the preferred theory, making note of previous work on the topic, and encapsulating key findings and issues that different scholars highlighted in their studies. Lastly, potential FTM enhancements are examined for their potential of integration.

Before extracting outcomes from references and compiling them into a discussion, the researcher selects those references by *purposively sampling* an appropriate pool of literature (Cooper, 1988)¹⁴. While identifying information sources, he identifies key terms related to relevant academics fields, in particular to *switching*. Areas of interest include (i) theoretical developments and (ii) items with direct relation to RBS. Subsequently, he conducts a comprehensive keyword search in *Google Scholar*¹⁵ and various academic databases¹⁶. Moreover, he looks for key references and studies by dissecting the bibliographies of his evolving collection of

¹⁴ An exhaustive approach would locate all research available (Randolph, 2009), i.e. not bear the risk of missing information. However, many scholars work on concepts and theories related to the fields of interest (Randolph, 2009). The researcher takes a more efficient approach to identify a sufficient number of articles by rigorously scrutinising the literature because adequate coverage of previous knowledge is usually provided by a *purposive* sampling approach. That is, essential references are discovered by both rationalising their relevance for the research topic through the examination of qualitative criteria e.g., the strength of the connection to this study's research purpose (focus on the potential for applications in the real world) and estimating their quality of contribution via quantitative criteria e.g., frequency of citations (Cooper, 1984) and rating of academic journals they are published in (based on internationally accepted journal ratings e.g., JOURQUAL). Further, the researcher will look for the newest publications.

¹⁵ Online service; Google Inc.

¹⁶ Notably *EBSCOHost, ProQuest, Science Direct*.

references. All references are inserted in an electronic database¹⁷, but only the most relevant and important studies are included in the discussion that follows.

2.2 Switching Behaviour

2.2.1 Definitions of Switching

The reviewed literature (LR) contains a variety of *switching* definitions of which this researcher aims to find the most suitable one for his research context. Studies of Bansal (1997), Clemes et al. (2010) and of Khan, Ghouri, Siddqui, Shaikh, and Alam (2010) summarise a range of definitions which are discussed in this section.

Holland (1984) defines *switching* as *brand changing*, Carpenter and Lehmann (1985) as the *movement of buyers from one product to another*, Kasper (1988) as *non-repeat purchase behaviour*, Reichheld and Sasser (1990) as *customer defection*, Yi (1990) as *curtailing patronage*, Morgan and Dev (1994) as *changes in brand choice*, Stewart (1994) as *customer exit*, Keaveney (1995) as the *loss of continuing service*, and Sambandam and Lord (1995) as *inconsistency of brand choice from purchase to purchase*. In the RBS context, Garland (2002) defines *switching* more specifically as a *customers' shift from one bank to another*. The researcher perceives these definitions as insufficiently detailed to be applicable for his context because he seeks to investigate reasons, triggers or other influencers for *switching*, which usually demands a detailed definition¹⁸. Bolton and Bronkhorst (1995) more accurately state that *switching* reflects the decision of a *customer to stop either purchasing a particular service or patronising the service firm as a whole*.

Since this researcher seeks to establish a specific definition, he defines *switching* at this stage of his inquiry as a behaviour, *in which a consumer discontinues the service(s) from the previous bank and completely switches to another one to subsequently engage a similar service(s) at the new bank.* This implies that the purchase of products and services from a new bank without ending the interaction

¹⁷ Endnotes X7; name of a software tool to manage bibliographies; Thomson Reuters.

¹⁸ Considering the researcher's tendency towards a *post-positivist* position (cf. chapter 3), the definition must be sufficiently precise to allow other scholars to falsify his theory.

with the previous bank is excluded from his definition¹⁹, but interpreted as a portfolio diversification. The researcher's choice for this definition is supported by the fact that *switching* in service environments in terms of customers completely forsaking one SEPRO for another is usually researched in the field of service and relationship marketing (Garland, 2002).

2.2.2 Previous Investigations of Switching

For services in general, a sizeable body of research investigates *switching* and its relation with *attitudinal* factors, such as *customer satisfaction*²⁰ and *service quality* (Szymanski & Henard, 2001). For example, Keaveney and Parthasarathy (2001) suggest that *dissatisfaction* explains *switching* to some extent. However, only few studies focus on RBS *switching* or identify which consumer characteristics may contribute to the explanation of *switching* (Bansal, 1997; Keaveney & Parthasarathy, 2001), an impression shared by this researcher until today because his LR revealed neither a *switching* typology nor studies examining *switching* implications in view of culturally diverse customer bases. Among those studies are Manrai and Manrai (2007) who investigate RB *switching* and *customer satisfaction*.

Chiu et al. (2005) examine *switching* of customers of Taiwanese RBs and discover relationships with *customer loyalty* and *satisfaction*. In Singapore, Gerrard and Cunningham (2004) investigate RB *switching* by categorising *switching* incidents. However, they do not examine methodological differences based on culture, which may result in distorted results (Triandis, 1994). Blankson, Cheng, and Spears (2007) explore differences in RB consumer *choice criteria* in different cultural settings and show that c-c aspects receive insufficient attention. However, their study relates to reasons for selecting a FSP, not to the underlying reasons for *switching*.

¹⁹ To be reviewed after the qualitative study (cf. chapter 4).

²⁰ Related to personal, financial terms, "atmospherics" and convenience e.g., ATM availability.

2.3 Discussion of relevant Theories

2.3.1 Selection of the Field of Research

This researcher concedes that a wealth of theories regarding human behaviour and motivations exist in various fields. After familiarising with related literature he perceives (a) contemporary *consumer marketing theories* as potentially incapable of understanding highly complex behaviours in depth and (b) modern *strategic management frameworks* as insufficiently culturally sensitive to be applicable in multi-cultural societies. Based on his current knowledge, the researcher deems *behaviour theories* e.g., *game theory* (von Neumann & Morgenstern, 1944) or the *hierarchy of needs* (Maslow, 1943) of limited use for this research. In his view, such theories share many of the same weaknesses resulting in limited predictive capabilities, including (a) the assumption of *homogeneity* of the population, (b) being extrapolative in a limited sense and (c) addressing only particular scenarios e.g., for the *prisoner's dilemma* (Tucker, 1983).

More adequate for this study should be the *psychology* domain because it is concerned with both individuals' characteristics and behaviours. The researcher takes the stand that explaining behaviour in a business context tends to fall outside the realm of *general psychology*, which focuses on understanding concepts such as human motivations and the workings of the unconscious and conscious mind (Kolb & Whishaw, 2003). In contrast, *social psychological* (SP) theories about behavioural prediction approach the issue from a more technical aspect that seeks to calculate the likelihood of engaging in a particular behaviour, based on several factors e.g., past actions or currently held opinions and values. Quantifying the factors' impact on *switching* by measuring differences of significance, SP theories should provide managers with useful insights for their decision making. Peter and Olson (2005) support this view by adding that such theories offer the very foundations for *consumer behaviour* concepts. However, this researcher is of the opinion that only basic SP theories should be included on the shortlist. Theories like the *Behavioral Perspective Model*²¹ (BPM; Foxall, 1990) constitute a great framework to explain consumer behaviour, but (i) are already too advanced for the sake of deriving at a comprehensive model by adding new factors and (ii) are not as widely accepted as the basic ones to be introduced in the next sections.

2.3.2 Discussion of Theoretical Frameworks

2.3.2.1 Social Psychological Theories

The researcher notices that various SP theories co-exist and that most of the major theories are classifiable under the body of consistency theories. Such models assume that if individuals are faced with any particular situation which may engender a behavioural reaction, they will change their behaviour, beliefs, or a combination of both, to produce an internally consistent world view for themselves (Whatley, 2009). By consciously or unconsciously changing behaviours or ways of thinking, usually with respect to new developments, humans are able to make sense of their actions (Whatley, 2009). Major theories under the broad umbrella of this classification include the balance theory (BT), congruity theory (CT) and dissonance theory (DT). Outside of this umbrella, notable theories are the theory of reasoned action (TRA) and its successor, the theory of planned behaviour (TPB). These theories are based on the assumption that behaviour, or the intention to perform a behaviour, can be explained by antecedent constructs e.g., the attitude towards this behaviour (Madden, Ellen, & Ajzen, 1992). The researcher believes that these theories shape the SP domain as it exists today. Thus, he discusses these theories in detail to select the most applicable one as the foundational framework.

²¹ According to the BPM of consumer choice, the consequences of buying behaviour fall into different utilitarian and informational consequences. These consequences can be reinforcing or punishing and consist of functional (utilitarian) and symbolic (informational) outcomes of buying and consumption.
2.3.2.2 Balance Theory

The BT (Heider, 1982; Appendix A2.1) is a relatively simple model (Fillenbaum, 1968) and easily applicable to a wide spectrum of SP contexts (Crandall, Silvia, N'Gbala, Tsang, & Dawson, 2007). However, Cartwright and Harary (1956) argue that the theory has several weaknesses that make this theory applicable only to a restricted range of situations: First, situations with asymmetric relationships are not examined although they should occur regularly²². Second, it is unclear if negative relations within this theory are the complement or the opposite²³. Third, the distinction between two kinds of relations, based on rapport or unit formation²⁴, does not offer a general formulation relating to both aspects. Fourth, the theory only investigates cognitive fields as experienced by one individual (excluding social systems). Fifth, the generalisability of findings is limited to situations with three individuals. Lastly, the theory only allows dichotomised preferences²⁵ (Mohazab & Feger, 1985). The researcher believes that this simple measurement of relations being either positive or negative fails to take into account both the content and strength of the perceived attitudes at play, further removing the model from practical applicability. Moreover, the theory fails to take multiple factors into account (Situngkir & Khanafiah, 2004), thus probably being more useful in smallerscale contexts e.g., limited demographics and responses to particular stimuli.

The Social BT (Cartwright & Harary, 1956; Davis, 1970) aims to address the last of these weaknesses by introducing the concept of clustering (Appendix A2.1). As it exists in the contemporary context, the theory is the result of several refinements applied to Heider's BT (Heider, 1946), attempting to expand on the model to reflect human complexity (Cartwright & Harary, 1956; Davis, 1970). Major refinements are that the Social BT produces multiple triadic relationships representing an individual's attitudes towards various relevant other people and behavioural targets (whereas the original balance theory consists of only one triad), and based on

²² Not all situations are symmetric e.g., it is possible for individual A to like individual B while individual B does not like individual A.

²³ The opposite of *liking* is called *disliking*, whereas *not liking* constitutes the complement.

²⁴ One relation is based on *liking*, the other one is based on parts of the relation forming a unit.

²⁵ Using + or - instead of a scale.

those, aggregating an individual's reactions, partly shoring up the original theory's failure to account for multiple factors (Situngkir & Khanafiah, 2004). For the specific context of consumer research, Woodside and Chebat (2001) developed a more recent Social BT by adding a variety of theoretical links to Heider's BT. However, the researcher believes that both Social BT and its modification for the context of consumer behaviour still suffer from many of the original theory's other flaws and thus, of limited practical use for explaining behaviour in the given research context.

2.3.2.3 Congruity Theory

The CT (Osgood & Tannenbaum, 1955) has its roots in Heider's BT and is viewed as a special case of it (Wilson, Rosenblood, & Oliver, 1973). After his LR the researcher believes that, similar to Social BT, CT supersedes Heider's original theory. The differing focus of CT lies in improving the particular weakness of BT by sharpening its explanatory capability with the amendment of a numerical scale (Appendix A2.2). This allows the theory to establish a formula which can explain or project not just the possible attitude or behavioural change, as the original BT does, but also the strength of said attitude.

This researcher argues that such accounts are relevant to practical applications, which is illustrated by the theory's successful applications e.g., in the field of advertising and consumer behaviour for explaining recall and attitude formation amongst others (Jagre, Watson, & Watson, 2001). In practice, research shows that while the extrapolative formula is generally accurate in projecting the direction of attitude change, it is less so in predicting the degree to which these attitudes change (Osgood, Suci, & Tannenbaum, 1957). Despite repeated attempts to modify the theory, this researcher believes that these corrections do not sufficiently account for the gap between model predictions and change of actual attitude and behaviour, constraining the CT's applicability. Further, the theory does not focus on the quality of arguments from a specific source (e.g., good friends), which the individual takes into account to formulate an opinion (Walther, Liang, Ganster, Wohn, & Emington, 2012). Moreover, due to their similarity (Wilson et al., 1973),

the CT appears to share many of the BT's other weaknesses. Thus, the researcher perceives only limited practical use for explaining behaviour in his research context.

2.3.2.4 Dissonance Theory

Unlike BT and CT, both relying to an individual's attitude towards others, DT (Festinger, 1957) focuses on an individual's self-image (Appendix A2.3) and is possibly one of the most widely applied and debated theories. According to Brehm (2007), the theory constitutes a breakthrough for the explanation of behaviour and is highly flexible, which is probably one of its greatest strengths as it appears to be useful in a variety of qualitative studies with wide-ranging applications²⁶. However, (a) findings in the field of consumer behaviour can be contradicting, (b) do not always support the theory and (c) do not specify how dissonance is reduced (Oshikawa, 1969). Further, applying DT probably does not make sense for all cultures because a theory based on internal consistency cannot be applied to investigations in a *collectivistic* society in which individuals tolerate internal dissonance (Triandis, 2001, p. 37). Thus, of all SP theories, DT is perhaps the most irrelevant due to its lack of cultural sensitivity for *collectivistic* behaviours.

2.4 Analysis of the Theory of Planned Behaviour

BT and CT successors, while expanded to a larger context and refined to greater applicability, continue to share too many of the BT's initial weaknesses. The researcher also believes that DT would fail for c-c applications (cf. chapter 2.3.2.4). Thus, he discards DT and other *consistency theories* at this stage because they are unlikely to rigorously explain behaviour for *collectivistic* individuals who are less affected by an urge of internal consistency.

The TRA, or its successor, the TPB, could provide a more relevant alternative to the practical context of this research. One of the main reasons for this researcher's opinion that the TPB could be suitable for this study is that in contrary to the aforementioned theories, the TPB ascribes a more specific role to attitude, including

²⁶ For example, *behaviour prediction, attitude evaluation, persuasion* (Whatley, 2009).

not only the attitude towards an object, but the attitude towards a behaviour which in addition involves a specific action, place and time frame, thus providing higher chances of identifying a significant relationship between attitude and a specific behaviour (Ajzen, 2012b). Another TPB advantage is that it is regarded as a basis for studies about the effectiveness of behavioural interventions (Ajzen, 2012b), which in this researcher view creates highly practical benefits for bank managers who intend to influence customer behaviour. Choosing the TPB seems to be supported by the researcher's impression that the TPB is by far the most commonly applied theory in the contemporary literature, with its citations having grown exponentially (Ajzen, 2012b). Thus, in the following sections, this researcher examines the TRA and TPB for their possible application in the given research context.

2.4.1 Theory of Reasoned Action

The TRA (Ajzen, 1977; Ajzen & Fishbein, 1973, 1977; Fishbein & Ajzen, 1972, 1974, 1975, 1981) seeks to explain *behavioural intention*, i.e. the intent of an individual to engage in a particular act or pattern of behaviour, by establishing a relationship between *behavioural intention* and (a) an individual's own *attitude* towards the behavioural act or pattern, usually tied to the individual's beliefs about the effects and consequences of the behavioural act or pattern, and (b) perceived *subjective norms*, i.e. an individual's impression of expectations and anticipated reactions from relevant other individuals, groups, and society at large (Appendix A2.4).

In the researcher's view, the TRA increases the ability to explain behaviour to the extent that it is capable of calculating not just patterns of behaviour, but also of measuring the effects of attempts at changing said behaviour. Applications of the theory through both empirical studies (Bagozzi, 1981; Slocombe, 1999; Yousafzai, Foxall, & Pallister, 2010) and across social fields (Bamberg, Ajzen, & Schmidt, 2003; Fishbein & Ajzen, 1981; Yousafzai et al., 2010) lend credibility to the theory. Further, it is perceived as valid in western and eastern contexts (C. Lee & Green, 1991; D. Y. Lee, 2000). Yet, Hale, Householder, and Greene (2002) criticise the TRA for its weak correlations between *attitude* measures and performance of behaviours, pointing to one of its intrinsic limitations, i.e. the arguable disconnect between *behavioural*

intention and *actual behaviour*. The initial theory states that an individual with the intention to perform a particular behaviour is likely to engage in it. However, in a practical context this appears to be often not the case (Hale et al., 2002).

2.4.2 Theory of Planned Behaviour

The TPB (Ajzen, 1985) is a re-conception and extension of the TRA to overcome the model's failure to explain the disconnect between *behavioural intention* and *actual behaviour*. Subsequently, Ajzen added a third predictor, namely *perceived behavioural control*, or the degree of control that individuals perceive to have over their own behaviour. It acts as a representation (proxy) of *actual behavioural control*, the measure of an individual's ability to execute a behaviour (Ajzen, 1985). Thus, the TPB adds the conscious mind into the equation (Madden et al., 1992). Although the newly added construct improves the explanation of *behavioural intention*, the predictive power of *perceived behavioural control* remains low compared to the other predictors (Armitage & Conner, 2001).

Following Ajzen (1985), the TPB (Figure 2.1) is expressible as the prediction of *behavioural intention* from the convergence of an individual's *attitude towards the behaviour* (personal opinions towards the behaviour in question and its outcomes), *subjective norms* (personal perceptions of the opinions and likely reactions of relevant other individuals and communities), and *perceived behavioural control* (personal beliefs as to the individual's ability to control his own actions with regard to this behaviour).



Figure 2.1: Theory of Planned Behaviour (TPB) (Ajzen, 2006)

The theory establishes an equation for the strength of an individual's *behavioural intention*. The path from *behavioural intention* to *actual behaviour* is thereby creating a prediction of an individual's likelihood of engaging in the behaviour.²⁷ Madden et al. (1992) demonstrate that the TPB's explanatory power can be enhanced for behaviour that is of low volitional control by a direct path from *perceived behavioural control* to *actual behaviour*. Their evidence indicates that inserting this direct path offers a more complete explanation of behaviours that are beyond a person's volitional control (Eagly & Chaiken, 1993). However, *switching* is presumably of high volitional control (Kaiser, Schultz, & Scheuthle, 2007) and thus, a direct path appears to be idle.

In later studies, Ajzen (2002a) adds *actual behavioural control* to provide an objective measure of an individual's ability to perform a certain action. Figure 2.1 includes *actual behavioural control* which is linked to both *perceived behavioural control* and *actual behaviour*. The inclusion of *behavioural control* factors concedes that an individual's perception of his control over his actions is not always an accurate reflection of the individual's actual ability to transform intention into action (Ajzen, 2002a). However, only very few studies operationalise this construct or include an empirical examination of *actual behavioural control* (Kraft, Rise, Sutton, & Roysamb, 2005; Sheeran, Trafimow, & Armitage, 2003; Sutton, 2004) because it is very difficult to measure, whereas *perceived behavioural control*, which is easier to measure, can be applied as its proxy (Ajzen, 2012a).

Albeit constituting a major part of the original model, *actual behaviour* is left out from most of the reviewed studies (Bansal, 1997; Conner, Warren, Close, & Sparks, 1999; Hagger, Chatzisarantis, & Biddle, 2002; Lau, 2002), probably due to the difficulty of measuring it (Francis et al., 2004). Studies which include *actual behaviour* measure the correlation between *behavioural intention* and *actual behaviour* after the study is completed, mostly by conducting follow-up surveys.

²⁷ Behavioural intention is modified by behavioural control (Ajzen, 2006, 2012a), which is actual behavioural control in reality, but in most studies integrated as perceived behavioural control.

This researcher believes that *behavioural intention* provides sufficient information on what factors are relevant to explain *switching*, pointing to Bansal's (1997) analysis of the predictive power of behavioural intention on actual behaviour for RBS switching. He found that 30% variance can be explained, a number that is close to the average **27%** explained variance²⁸ for TPB studies (Armitage & Conner, 2001, p. 481) with *perceived behavioural control* only adding 3% of the variance (Armitage & Conner, 2001, p. 483). Sheeran (2002) conducted a meta-analysis of TPB metaanalyses and found an overall mean correlation of .53 between behavioural intention and actual behaviour (Ajzen, 2012b, p. 19). These percentages can serve as a reference to calculate the model's effect on actual behaviour when actual behaviour is not measured. Further, obtaining information about actual behaviour would not justify the required efforts of the measurement when pursuing a research goal that focuses on the underlying factors of *behavioural intention*. Thus, a reduced TPB consisting of attitude towards the behaviour, subjective norms, perceived behavioural control and behavioural intention, including their relationships, shall constitute the FTM for this study²⁹.

2.4.3 Methods and Measurements

While the TPB provides a framework for understanding the various factors which contribute to *behavioural intention*, TPB applications are typically quantitative in nature (Ajzen, 2012a). Qualitative methods are rarely used for theoretical discussions about the TPB itself (Ajzen, 2001), for understanding the research context and the development of a related survey (Ajzen & Fishbein, 1980; Francis et al., 2004). The majority are quantitative papers utilising the TPB focuses on deriving the coefficients required by the framework, most frequently by applying surveys (Ajzen, 2012a). Standardised surveys are available from various sources, including Ajzen (2012a), but in most instances require customisation to represent the context in which the survey is conducted (Ajzen, 2006, 2012a; Francis et al., 2004).

²⁸ Both variances explained by *behavioural intention* and *perceived behavioural control* combined.

⁹ Strictly speaking, this study does not apply the full TPB, but parts of it, similar to many other studies (e.g., Perugini & Conner, 2000). However, for simplicity, this researcher continues to refer to this partial version as "TPB".

While surveys are the general method of collecting primary data for the calculation of predictors, the process of deriving the coefficients is a point of possible theoretical expansion. Hence, some researchers opt to integrate other theories into the TPB (Hagger, Chatzisarantis, & Harris, 2006; Perugini & Conner, 2000), using other models to derive the necessary coefficients. This researcher perceives this as an opportunity for greater breadth and development, and one of the promising methods of increasing the accuracy of the TPB. In this study, the TPB application will automatically constitute a test of its validity in view of applying a prescribed methodology in a new context beyond the location of the theory's origins.

2.4.4 Application Areas

The TPB is successfully applied in multiple areas (Ajzen, 2012a). One such area is the education sector, probably one of the most promising realms for TPB applications due to the relative ease of access to the target population (student samples). One illustration is the study of Armitage (2008) investigating academic achievements. Within the healthcare sector, TPB applications cover numerous behaviours (Gagné & Godin, 2000). Examples include studies about Malaria prophylaxis regimens (Abraham, Clift, & Grabowski, 1999), or influencing behaviours e.g., smoking (Babrow, Black, & Tiffany, 1990; Bledsoe, 2006) or dieting (Conner, Norman, & Bell, 2002). In the *public services* sector, the TPB is used to explore reactions to possible legislations e.g., the criminalisation of abortion (Petkova, Ajzen, & Driver, 1995). Studies in the social sciences focus on issues such as abusive relationships (C. A. Byrne & Arias, 2004) or differences between legal and illegal drug abuse (Armitage, Conner, Loach, & Willetts, 1999). TPB applications also explore human resources issues e.g., the search for temporary employment (van Hooft & de Jong, 2009). Studies within mass communications and media examine consumer attitudes towards various forms of mass media e.g., the relation between particular forms of mass media to other negative behaviours (Thomsen & Rekve, 2006) or people's intentions to create and use pirated software and media (Cronan & Al-Rafee, 2008). Further, the TPB is used to study the choice of leisure activities (Ajzen & Driver,

1991, 1992). Studies in the *retail* sector focus on behaviours within specific industry segments e.g., online shopping (Shim, Eastlick, Lotz, & Warrington, 2001).

Of particular interest for this study is past research work about consumer *switching* of financial services, using the TPB or similar theories. Examples of such applications are concerned with understanding the reasons behind the adoption of online banking and trading in China or Taiwan (Fang & Shih, 2004; M. C. Lee, 2009a, 2009b). Another example is a study on the impact of morals on investment decisions (Hofmann, Hoelzl, & Kirchler, 2008). However, in this researcher's view, these studies do not include a profound investigation of *switching* and thus, are too limited in scope to constitute a basis for examining *switching*. The same argument applies to East's (1993) paper exploring stock purchases during initial public offerings because it is primarily concerned with the financial instrument and unrelated to investor behaviour.

Most interesting research work include Bansal (1997), who investigates RBS *switching* and claims to be the first to examine *switching* in a service context by applying the TPB in full scope³⁰, and in conjunction with several extensions. In the researcher's view, Bansal's study covers major groundwork concerning the application of SP theories to explain *switching*, but it also has several limitations. First, it may suffer from self-selection bias because out of **4,000** questionnaires only **416** were returned. Second, the study is limited to mortgage services, restricting the generalisation of results to this specific type of service. Bansal (1997) accepts these limitations and proposes the launch of further inquiries to investigate *switching* in the FSP industry, a call to which this study aims to respond.

Considering the potential for understanding consumer behaviour, it is surprising that the TPB remains underutilised in the financial sector (Xiao, 2008), which this researcher perceives as a gap in the contemporary literature. He concludes that there is ample motivation to assume that this field of research should be further

³⁰ Bansal purchased a database of 50,000 mortgage customers of different Canadian banks and trust agencies. Customers were contacted after their renewal and interviewed about their *switching* process to investigate *actual behaviour*.

explored and that the opening in the literature is worthwhile to be filled, because he could not find TPB applications exploring RBS *switching* in the context of Singapore or similar diverse ecosystems.

2.4.5 Critical Assessment

2.4.5.1 Practical Applicability

A major limitation to TPB applications is probably the requirement to adjust the measurement to each research context. Given that a new survey needs to be designed according to the specific research context of each study, it relies to some extent on the researcher's expertise in constructing and customising the questionnaire, which creates great potential for bias³¹ (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The dependency on the survey method is further complicated by Ajzen's (2005b) considerations pertaining to the integration of constructs. He points out that the level of generalisation needs to be the same for all measured constructs to be integrated in a predictive model.³²

While not generally an issue for smaller studies, it may become a major difficulty for industries such as financial services, which offer services to a wide variety of consumers simultaneously, and often across different geographic locations. Likewise, other researchers e.g., Perugini and Conner (2000), raise similar points regarding the time-consuming nature of the TPB's methodology, and its limitations to its practical application. Further, Ajzen (2005b) states that *attitudes* have different capabilities for the explanation of *behavioural intention* in different research designs. For example, for some behaviour types, participants may provide different answers in a hypothetical design vs. a real-life situation.

Triandis (1999) criticises SP theories for being built on too many general assumptions derived through observations mainly of Western behaviour, detaching

³¹ Cf. chapter 6.

³² Ajzen (2005b) argues that relations between verbal attitudes and overt behaviours were not confirmed in early studies because these studies attempted to predict specific behaviours from very general attitudes.

them too far from many local contexts to be universally applicable. He points out that country and ethnic definitions are largely insufficient to account for the variance in unique human values and behaviour, as even within the same country or ethnic group, significant variance occurs (Triandis & Suh, 2002). Thus, he identifies the need to take culture into account for any practical study of a target population. Conversely, anything that fails to sufficiently take cultural contexts into account is of only limited practical applicability. His harsh evaluation has important ramifications for the practical use of the TPB to the FSP sector, and in the view of the researcher, must be considered.

This researcher also empathises with Triandis when it comes to *consistency theories*, which count a lack of consideration for local context among their weaknesses. However, Ajzen (1991) argues that *attitude*, *subjective norm* and *perceived behavioural control* encompass the local context³³, which in this researcher's opinion, includes at least to some extent cultural and other contextual traits. Besides, Ajzen (2001) arguably incorporated elements of contextual differences into the TPB's methodology by modifying the concepts depending on the context of the groups being studied. Thus, this researcher submits that the TPB is more compatible with Triandis' postulations than most other SP theories.

A wide range of TPB-related studies in Asian contexts or investigating possible cultural implications on *switching* (Ajzen, 2012a) can be viewed as proof for the TPB's increased practical applicability. Moreover, an independent meta-analysis of **185** TPB applications (Armitage & Conner, 2001) demonstrates that (i) the TPB is empirically able of a comparatively accurate explanation of *behavioural intention* across various cultural contexts and (ii) the relations between *behavioural intention*

³³ Ajzen (his homepage, FAQ section) writes: "Personality traits, intelligence, demographic variables, values, and other variables of this kind are considered "background factors" in the TPB. They are not neglected but assumed to influence intentions and behavior indirectly by affecting behavioral, normative, and / or control beliefs. That is, the components of the TPB are assumed to mediate the effects of background factors on intentions and actions. The theory acknowledges that background factors can provide valuable information about possible precursors of behavioral, normative, and control beliefs, information not provided by the theory itself. Conversely, with the aid of the TPB it becomes possible to examine why a given background factor influences, or fails to influence behavior by tracing its effects via the more proximal antecedents of the behavior."

and attitude towards the behaviour, social norms and perceived behavioural control can be explained unambiguously. In view of the researcher, the wide range of successful applications offer evidence that the model is viable for many purposes, most likely because it takes into account both personal and environmental factors, making the theory suited to adaptation for various situations and target demographics (Ajzen, 2012a). Therefore, this researcher remains confident that the TPB is of appropriate practical applicability for this research context, provided that sufficient efforts are undertaken to develop the research instrument. For that sake, this researcher will use all resources available and necessary to meet the requisites for methodological rigour (cf. chapter 6). Further, in this study's TPB application, Triandis' cultural argument is particularly considered as this researcher seeks to enhance the TPB with cultural dimensions (cf. chapter 2.5.5).

2.4.5.2 Explanatory Power and Scientific Quality

Several researchers raise critical assessments of the TPB concerning its explanatory power to justify their own amendments. For example, Ross, McFarland, Conway, and Zanna (1983) show that individuals with positive attitudes usually over-estimate their *intention* vs. their *actual behaviour*. Recent criticisms from e.g., Sniehotta, Presseau, and Araújo-Soares (2014), resulted in a strong rebuttal from Ajzen (2014), who argues that such critics either did not understand the TPB or are unable to create logical arguments. Ogden (2003) raises more fundamental criticisms. First, she believes that behaviour prediction theories in the field of SP are not real theories because they are impossible to disprove and argues that studies with negative findings have emerged, but are not able to disprove these theories due to their subjectivity. She also claims that TPB constructs cannot be tested because they are too unspecific for the generation of hypotheses and deems TPB constructs as strongly correlated because they are too similarly operationalised.

Ajzen and Fishbein (2004) argue that the strongest evidence for the TPB's validity lies in the success of a significant number of projecting studies, and related

behaviour change interventions using the TPB³⁴. While this appears to be reversejustification, Ajzen and Fishbein (2004) have a point: if their theory was effectively useless, the growing body of TPB-based studies³⁵ should, over time, make this *unreliability* obvious upon reaching a critical mass of negative results, in effect disproving it. Regarding the similarity in the constructs' operationalisation, various studies e.g., Bamberg et al. (2003) apply SEM analysis to support the measures' convergent and discriminate validity (Ajzen, Brown, & Carvajal, 2004).

Besides, Ogden (2003) criticises the fact that responses to survey items and other survey methodologies cannot be trusted and may, instead of measuring current cognitions, create entirely new ones, essentially contaminating results, something which critics of self-reported data consider subjective and unreliable. Ajzen and Fishbein (2004) argue that concerns about cognitions being created by surveys are common to all survey-based methods, remaining an empirical question and hence, offer insufficient grounds for the outright dismissal of all theories utilising this methodology. They highlight that for some behaviours (e.g., condom use), it is impossible to apply more objective measures such as experiments, and for others (e.g., exercising) it is not efficient. Further, they illustrate tests and studies to assert that to-date no evidence exists to show that such methodologies have a significant impact on research results invalidating the developed models³⁶. They outline that particularly for the TPB-related survey development, guidelines exist which help to reduce the possibility of such respondent bias, often caused by participants overstating behaviours that are socially desirable (Ajzen & Fishbein, 2004). An important step towards rigorous survey development is that cognitive beliefs of the three predictors are elicited in a qualitative pilot study (Ajzen & Fishbein, 1980) to minimise the likelihood of the measurement creating or influencing the investigated cognitions (Ajzen & Fishbein, 2004). Thirdly, Ogden (2003) argues that the TPB, TRA and similar theories do not account sufficiently for variances between behavioural

³⁴ If interventions had no effect on *intentions* or *actual behaviour*, the TPB would be falsified (Ajzen & Fishbein, 2004).

³⁵ Bibliography of TPB applications: http://people.umass.edu/aizen/tpbrefs.html

³⁶ For example, in one study a survey was conducted either before or after observing the behaviour. No evidence was found that the behaviour was influenced by responding to the survey or that cognitions were influenced after conducting the behaviour (Ajzen & Fishbein, 2004).

intention and *actual behaviour*. Similarly, Sutton (1998) proposes that the TPB leaves much of the variance unexplained, although the model was initially created to predict behaviour. Ajzen and Fishbein (2004) acknowledge that on average, the three predictors only account for **39%** of the explained variance in *behavioural intention* and **27%** of the variance in *actual behaviour* (Figure 2.2), according to a meta-analysis based on **185** independent studies (Armitage & Conner, 2001).



Figure 2.2: Explained variance of *behavioural intention* and *actual behaviour* by the TPB (Armitage & Conner, 2001, p. 481)

Ajzen and Fishbein (2004) argue that despite considerable variance insufficiently explained, the theory represents a marked improvement from previous predictive studies and defend the TPB by stating that the variation of the predictive strength of the three predictor constructs is reasonable and part of the theory's idea to understand their significance for different contexts. Further, parts of the unexplained variance may be caused by errors and limitations within the methodology e.g., flawed construct operationalisation or random measurement error, which can be diminished by applying SEM analysis (Ajzen & Fishbein, 2004).

While independent meta-analyses appear to substantiate that the TPB is empirically capable of an accurate prediction of *behavioural intention* (Armitage & Conner,

2001), a trend is apparent from Ajzen's papers on the subject of constant attempts to account for the debatable disconnection between *behavioural intention* and *actual behaviour*, which can vary, in some cases, by a fairly large proportion (Ajzen et al., 2004). Ajzen's recent papers aim to identify reasons for these inaccuracies.

For example, some types of behaviour should be considered as a series of linked behaviours, given the relative number of steps required to perform them because a complex behaviour would be better accounted for through a study focusing on its individual components (Ajzen, 2002a). While it is plausible that factors dealing with the unconscious are accounting for the remaining variance and are neither within the researcher's control nor widespread enough to introduce significant error on a larger scale, the idea of searching for improvements points to the opportunity of extending the TPB. The inclusion of other theories, constructs and paths could potentially address current TPB issues and enable a more sophisticated explanation of behaviour. Thus, the researcher remains convinced that the TPB is the best choice for investigating *switching intention*. Moreover, as his research work progresses the researcher will continue to conduct LRs about TPB measurement instruments to avoid or minimise methodology related biases³⁷.

2.5 Potential Extensions of the Theory of Planned Behaviour

Following Ajzen (1985), the TPB constitutes a complete theory of behavioural explanation, i.e. variables that are not specified by the model influence *behavioural intention* or *actual behaviour* only over the three constructs *attitude towards the behaviour, subjective norms* and *perceived behavioural control*. Moreover, he argues that all external variables e.g., *customer satisfaction* (Bansal, 1997), are already represented in the three independent variables (IVs) (Ajzen & Driver, 1991) and make only few modifications to the core model, mostly related to classifications and methodologies. Since then, many researchers tested his assumptions and some came to different conclusions. For example, Dean, Raats, and Shepherd (2011) show

³⁷ Cf. chapters 3, 6, 7.

that, independently of other variables, a *self-identity*³⁸ construct influences *behavioural intention*³⁹. Other examples include the relatively simple insertion of positive and negative anticipated emotional response as antecedents of *past behaviour* (Perugini & Conner, 2000), or the more complex approach of Hagger et al. (2006), who makes a compelling argument for the integration of the *self-determination theory*⁴⁰ and the *hierarchical model of motivation*⁴¹. Many other studies include additional constructs into the prediction equation and show significant improvement in the explanation of *intentions* or *actual behaviour* (Conner & Armitage, 1998).

Ajzen (2001) claims that such insight adds only minor improvements for the TPB's predictive power, and is too context-specific to justify the insertion of constructs beyond the respective area of investigation. However, above mentioned studies are in line with Ajzen's general recommendation of trying to improve the model's explanatory power for specific contexts by adding other constructs for parallel or left side integration (Ajzen, 2012a). A good example of successfully introducing new variables in a specific research context is the study of Bansal (1997), who attained a high percentage of explained variance for *switching intention* (**76%**) in the context of retail bank mortgage services⁴². Despite the high explanatory power, Bansal believes that space for further improvement exists and offers several factors that may explain the remaining unexplained variance e.g., *pricing or variety-seeking* (cf. chapter 2.5.3), and postulates that such factors and their interrelations, which may influence customers' decision making in the context of *switching* SEPROs, need to be identified and explored (Bansal, 1997).

³⁸ *Self-identification* as a health-conscious individual.

³⁹ Consumption of a diet low in animal fats.

⁴⁰ Fulfilment of three psychological needs: *autonomy, competence, relatedness* (Deci & Ryan, 2000).

⁴¹ Integrates *motivation* at three layers of generality: *global, context, situational* (Vallerand & Ratelle, 2002).

⁴² The researcher remains skeptical: Bansal conducts SEM using his regression data, but not considering measurement errors (cf. chapter 7).

Therefore, this researcher is confident that there is room for expansion of the TPB in his specific context. As for possible integration methods, this researcher considers two alternatives (Figure 2.3):

- a. **Left-side integration**. Mainly, including antecedents of TPB constructs to improve the accuracy of identifying underlying reasons leading to *switching*.
- b. **Parallel integration**. Following the discussion so far, using the TPB as a foundation for a broader model, effectively viewing TPB in parallel with other models and / or other constructs.



Figure 2.3: Possible integration methods for an extended framework

2.5.1 Predisposing and Precipitating Factors

The management of both service encounters and customer relationships is a major source of competitive advantages for service firms (Rayport & Jaworski, 2004). Hence, bank managers should be interested in factors within their control that influence the service experience and its influence on *switching* (Bitner, Booms, & Tetreault, 1990; Homburg, Wieseke, & Bornemann, 2009; Shostack, 1985). Kaiser et al. (2007) suggest that the TPB's explanatory power in most applications may be inflated because specific TPB applications only contribute to an ambiguous understanding of underlying relationships, but do not reveal the original reasons for the behaviour in question. For example, within the measurement of ATT the outcome of *switching* can be rated as beneficial by a survey participant. However, it is not clear why it is beneficial. Underlying reasons for this assessment could be a bad service experience that happened with the current bank which is making the survey participant believe that is beneficial to change to a new bank that provides a better service experience. Although the TPB may explain *switching* sufficiently without the inclusion of other constructs, the theory cannot contribute to an understanding of how distinct factors of the service experience influence *switching* without including them in the model as variables (Bansal, 1997; Kaiser et al., 2007).

Bansal (1997) describes two streams to explain *switching*. One stream explains *switching* using *proximal determinants* e.g., *attitude towards the behaviour*, whereas the other stream predicts behaviour from general attitudes towards the target of the behaviour e.g., *service quality*⁴³. Eagly and Chaiken (1993) state that both *attitudes towards the behaviour* and *attitudes towards the behavioural target* should be retained in any causal model that involves a relationship between *attitudes towards the behaviour* and another construct, because *attitudes towards the target* should come to an individual's mind first. Meaning, *attitudes towards the target* are antecedents of *attitudes towards the behaviour*. Thus, integrating *attitudes about the target* may enhance the understanding of how underlying factors of the service experience influence *switching*. Ajzen (2005b) acknowledges that such general attitudes are relevant for the explanation of behaviour, especially for specific contexts e.g., *religious behaviour* (Ajzen, 2012b), but in his opinion, not as important as e.g., *attitude towards the behaviour* (cf. chapter 2.4).

This researcher believes that the integration of constructs which represent general *attitudes* towards RBs and / or RBS can result in an extended theoretical framework that is of high practical applicability because it allows bank managers to understand how distinct factors of the service experience, which are within their control (at least to some extent) influence *switching*. Hence, various constructs extracted during the LR shall be discussed for their integration in the FTM.

⁴³ Cf. Parasuraman, Zeithaml, and Berry (1988, p. 16): a judgment or attitude, relating to the overall superiority of the service, i.e. the overall evaluation of a SEPRO in which the customer benchmarks his performance expectations vs. its actual performance.

One possibility to create customer value is through a differentiated offering (Bharadwaj et al., 1993). In service industries, *service quality* is a differentiator (Porter, 1985) and a major contributor to customer retention because high *service quality* adds significant value for customers (Parasuraman & Grewal, 2000; Walsh, Enz, & Canina, 2008) and can create *customer satisfaction* (Oliver, 1993). Thus, a sizeable body of research supports the relationships between *switching intentions* and each of the two attitudinal variables *service quality* (Khan et al., 2010; Liang, Ma, & Qi, 2012) and *customer satisfaction*⁴⁴ (Anton, Camarero, & Carrero, 2007b; Athanassopoulos, 2000; Bolton & Lemon, 1999; Danesh, Nasab, & Kwek, 2012; Keaveney & Parthasarathy, 2001). Studies which combine the two constructs to explain *switching intention* (Bansal, 1997; Brady & Robertson, 2001; Edward, George, & Sarkar, 2010; Laroche et al., 2004; Oliver, 1993) identify *service quality* as an antecedent of *customer satisfaction* (Bansal, 1997; Jamal & Naser, 2002; Levesque & McDougall, 1996; Oliver, 1993).

Since this researcher is interested in identifying reasons for *switching*, he excludes *customer satisfaction* at this stage because he rates it as a result of other factors. Following Parasuraman et al. (1988), who introduced *service quality* by developing the SERVQUAL scales⁴⁵, the researcher also dismisses *service quality* because he assesses it as aggregating different facets that describe service experience and thus, not as sufficiently representing underlying reasons. Further, *service quality* and *customer satisfaction* are invariant measures among different cultures (Laroche et al., 2004; Ueltschy, Laroche, Tamilia, & Yannopoulos, 2004) and thus, not adequate for a study which aims to investigate the influence of cultural differences.

Consequently, the researcher aims to select a concept that evaluates *services* in different aspects, breaking down *service experience*. To identify such aspects, he follows Keaveney (1995), who categorises and ranks generic incidents that make

⁴⁴ Cf. Garvey et al. (2011, p. 27): summary of psychological states resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience.

⁴⁵ A comprehensive measurement consisting of a multiple item scale, which includes a variety of underlying service aspect dimensions (Appendix A2.5).

service customers *switch* providers, namely: *pricing, inconvenience, core service failures, service encounter failures, response to service failure, competition, ethical problems* and *involuntary switching*. This approach conforms with the investigation of cultural diversity, considering that Liang et al. (2012) claim that Keaveney's incidents are ranked differently between Chinese and Westerners. Even if compared to *service quality, service failure* only covers particular aspects, it is identified as an antecedent of *customer satisfaction* (de Matos, Rossi, Veiga, & Vieira, 2009; McCollough, Berry, & Yadav, 2000). The researcher perceives this as potential for the integration into a framework that investigates effects of incidents on psychological constructs.

Keaveny's (1995) findings cover different industries and thus, may not optimally apply for the RBS context due to their generic nature. For the specific context of Singapore's RBS sector, Gerrard and Cunningham (2000) use Keaveny's study to develop six categories of *switching* incidents: *service failures*, *pricing*, *inconvenience*, *unacceptable behaviour*, *attitude or knowledge of staff*, *involuntary / seldom mentioned incidents* and *attraction by competitors*, whereby *service failures*, *pricing* and *inconvenience* lead the ranking of occurrences. Gerrard and Cunningham (2004) point out that their previous study did not ask respondents to evaluate the incidents. Therefore, they let customers assess incidents (in the context of retail bank *switching* in Singapore) and validated that *service failure*, *pricing*, and *inconvenience* are involved in **90%** of *switching* incidents, whereas *reputation*, *promotions*, *involuntary factors* and *recommendations* were less relevant.

Other studies support these findings: Berggren and Dewar (1992) found that in **42%** of cases, service-related issues triggered either service termination or RB *switching*. For other service industries, Carpenter and Lehmann (1985), Mahajan, Green, and Goldberg (1982), Mazursky, LaBarbera, and Aiello (1987) and Bucklin and Srinivasan (1991) came to the conclusion that especially high prices contribute to *switching*. Gerrard and Cunningham (2004) suggest that the role of *pricing* is even more significant for customers using RBS compared to other industries. The researcher

therefore concludes that *service failure, pricing* and *inconvenience* have great potential to contribute to a better understanding of *switching* in the given context.

Anton, Camarero, and Carrero (2007a) introduce a classification of deficiencies that cause customers to switch SEPROs by looking into the actual effect of customer's rationales. Reasons for switching can either act continuously, gradually creating unease in consumers, so-called predisposing factors, or occur abruptly, causing consumers to bring forward their switching intention, so-called precipitating factors (Anton et al., 2007a, p. 138). Service failures e.g., billing errors, should be precipitating factors because they are usually one-off encounters that trigger an onset of negative feelings and opinions of the brand. For example, mistakes in the interaction between bank and customer may provoke anger and cause customers to take immediate measures (Anton et al., 2007a). Pricing may also be categorised as a precipitating factor when sudden price hikes cause anger and trigger switching responses (Anton et al., 2007a). The researcher believes that inconvenience is a predisposing factor because it is affected by aspects such as the SEPROs' location and operating hours. Hence, the customer may develop an uneasy feeling, which may grow over time and influence one's perception of the service experience. This categorisation suggests that interplay of different *predisposing* and *precipitating* (P&P) factors may exist e.g., when inconvenience leads to an uneasy feeling and a sudden price hike adds to the final customer decision to switch the bank. Likewise, (Gerrard & Cunningham, 2004) show in their study that 75% of the participants switch banks because of more than one service deficiency.

2.5.2 Lack of Trust

The researcher claims that more factors should be added because of recent trends changing the importance of P&P factors. For example, the emergence of mobile and internet banking (du Toit et al., 2012; El-Manstrly et al., 2011; Ernst & Young, 2010b) probably decreasing the influence of *inconvenience* on *switching* (Gerrard & Cunningham, 2004). Conversely, other factors appear to have become more important now: The financial crisis in 2008-09 (VRL, 2009b) may have increased the importance of consumers' *trust* in banks (Edelman, 2009; VRL, 2009b).

In a purchasing context, *trust* can be defined as a psychological state that evolves over time within buyer - seller relationships based on a buyer's observation of a sales representative's honesty, reliability, consistency, and trustworthiness (Bart, Shankar, Sultan, & Urban, 2005) and may decrease because of a SEPRO's insufficient commitment to maintain the relationship (Halliburton & Poenaru, 2010).⁴⁶ The management of *trust* is crucial to create long-term customer relations (Adamson, Chan, & Handford, 2003; Bart et al., 2005; Danesh et al., 2012; Eistert et al., 2012; Halliburton & Poenaru, 2010; Webber, Payne, & Taylor, 2012). Moreover, it is a strong driver of customer retention (McKnight, Cummings, & Chervany, 1998) and especially important in services marketing (Kramer & Tyler, 1996; Yousafzai et al., 2010). If *trust* in a company and its brand is destroyed, major efforts are required to rebuild it (Crandall et al., 2007). For RBS, *trust* is particularly important in terms of security and privacy (Yousafzai et al., 2010) because customers often perceive banking transactions as risky and are aware of having incomplete product information due to information asymmetry (Mayer, Davis, & Schoorman, 1995).

Establishing *trust* is an efficient means for RBs to reduce the observed risk and ambiguity related to service transactions (Ratnasingham, 1998). According to Ferguson (Halliburton & Poenaru, 2010), more than half of a bank's customers rate a relationship of *trust* as more important than obtaining the best value for money. This is confirmed by expert interviews within the banking industry⁴⁷ who claim that *trust is the Holy Grail, its importance is 11 out of 10* (Halliburton & Poenaru, 2010, p. 3). It is not surprising then that a number of studies reveal a strong effect of *trust* on RBS *switching* (Bansal et al., 2004; El-Manstrly et al., 2011; Recklies, 2009; Saparito, Chen, & Sapienza, 2004). Such evidence, along with the increasing importance of *trust*, justifies a specific investigation of the effect of *trust* on RBS *switching*.

Since *trust* can be considered a psychological state and its absence should cause an uneasy feeling that may increase an individual's inclination to *switch* RBS, this

⁴⁶ For alternative definitions of *trust* refer to Appendix A2.6

⁴⁷ 20 senior marketers of leading companies in banking, insurance, mobile and media sectors.

researcher considers the *lack of trust* as a *predisposing factor*. However, *lack of trust* may also function as a *precipitating factor* causing customers to *switch* abruptly in case a critical incident that fully destroys *trust* in the SEPRO. The researcher argues that both classifications may be possible, considering the complexity behind the concept. *Lack of trust* is more complex than the previously introduced P&P factors because it does not refer to one single incident that can occur during the service encounter, but is based on a variety of factors and / or incidents (Halliburton & Poenaru, 2010). Such a variety of factors is used by Recklies (2009) to describe *trust* in the RB context as the *customer's attitude about products, expectation of competence, goodwill, commitment* and *ethical behaviour*. Following this description, integrating *lack of trust* into the framework has the additional advantage of partly covering other P&P factors that are unlikely to be included in the proposed theoretical framework (PTM) as single constructs e.g., *reputation* (Gerrard & Cunningham, 2004) or *ethical problems* (Keaveney, 1995).

The researcher is aware that *lack of trust* may overlap with other P&P factors. This is supported by Johnson and Grayson (2005), who identified three types of trust: *cognitive, affective* and *behavioural trust,* of which *cognitive trust* is the *customer's confidence in a service provider's perceived competence*⁴⁸. Hence, there may be an overlap between the concepts of *service failure* and *lack of trust.* Similarly, Mayer et al. (1995) include *ability*, verified by a set of skills, competencies and characteristics, as one of the trusted party's attributes that leads to *trustworthiness*⁴⁹. This researcher will address these issues in the SEM analysis by testing for multicollinearity and ensuring discriminant validity (cf. chapter 7.9.2). In view of this discussion, the researcher concludes that *lack of trust* is a promising construct that can contribute to the better understanding of *switching* in the given context.

⁴⁸ Affective trust refers to a customer's confidence in a SEPRO on the basis of feelings. Behavioural trust is the consequence of cognitive and affective trust e.g., a customer's action of taking the risk by purchasing the service (Johnson & Grayson, 2005).

⁴⁹ Cf. Davis (1970) and Mayer et al. (1995): the *trustee's ability, benevolence* and *integrity*.

2.5.3 Marketing Concepts

After reviewing literature in the field of marketing, this researcher discusses the plausibility of integrating three marketing concepts:

Consumers can be categorised according to consumer profiles based on their intrinsic *buying behaviour* (BB) patterns, ranging from *loyal*⁵⁰ to *variety-seeking*⁵¹ (Morgan & Dev, 1994; van Trijp, Hoyer, & Inman, 1996). Individuals who tend to engage in *variety-seeking* are more likely to *switch* RBS providers and are less likely influenced by efforts to prevent RBS *switching* (Morgan & Dev, 1994). Taking into account the potential for moderating effects, this concept shall be investigated.

Secondly, buying behaviour can be categorised in terms of cognitive involvement (high vs. low), which Warrington and Shim (2000) describe as an internal state of arousal⁵². While some product and service purchases can be habitual, i.e. *low involvement* BB, purchases of other products or services may involve complex cognitive processes or feelings, i.e. *high involvement* BB (Johnson & Grayson, 2005; Molesworth & Suortti, 2002). *High involvement* BB (Johnson & Grayson, 2005; Molesworth & Suortti, 2002). *High involvement* usually occurs for product and service purchases of high price and high risk (Yi, 1990). Since RBS are often perceived of high risk (Mayer et al., 1995) and, in this researcher's opinion, also perceived as high priced for certain products or services e.g., mortgages, their purchase should be rated as *high involvement*. However, RBS *switching* e.g., bank accounts where the *switch* involves less risk and emotional arousal, could possibly be *low involvement* behaviour. Thus, the qualitative analysis (cf. chapter 4) will investigate if the degree of involvement notably differs among RB customers, and if such differences affect other constructs.

The third concept to be discussed is *switching costs* (SCO), which is applied in a variety of studies e.g., Chakravarty, Feinberg, and Rhee (2003); El-Manstrly et al. (2011); Khan et al. (2010); Matthews (2009). SCO are formally defined as *fixed costs*

⁵⁰ Preference to buy the same brand.

⁵¹ Trying a different brand for the sake of experimentation.

²² Featuring three dimensions: *intensity* (level of motivation), *direction* (object causing the motivation), and *persistence* (duration of the intensity).

that buyers face in order to change between substitute products (Deci & Ryan, 2000, p. 262). They can be distinguished into (a) *procedural* SCO mainly requiring time and exertion, (b) *financial* SCO referring to the loss of financial resources or equivalents⁵³ and (c) *relational* SCO regarding uneasy psychological and emotional states triggered by the loss of relationships and / or identity associated with the brand (Burnham et al., 2003). For the banking industry, SCO can be described more specifically in terms of money, time, and effort (and psychological costs) for transactions e.g., transferring funds, opening new accounts, or registering for online banking (Clemes et al., 2010).

With high SCO, customers are less likely to *switch*, even if they perceive benefits from doing so (Clemes et al., 2010; Klemperer, 1995). This indicates potential for a moderating effect between *switching intention* and its antecedents. Thus, the researcher aims to investigate this concept further. Bansal (1997) rationalises that SCO are already sufficiently covered by *perceived behavioural control*, convincing this researcher not to integrate SCO as a separate construct, also for reducing unnecessary complexity in the PTM. Instead, he interprets *perceived behavioural control* as a proxy for SCO. This move has the advantage that it can prevent multicollinearity between these similar constructs, and enable discriminant validity.

2.5.4 Past Behaviour

A considerable amount of literature addresses the possible integration of *past behaviour* as a predictor of *behavioural intention* e.g., Ajzen (2002b); Albarracin and Wyer (2000); Bamberg et al. (2003); Bansal (1997); Conner et al. (1999); Dean et al. (2011); Kidwell and Jewell (2007); Kidwell and Jewell (2008); P. Norman and Conner (2006); Kovač and Rise (2007); Ouellette and Wood (1998); Courneya, Bobick, and Schinke (1999); Sheeran, Orbell, and Trafimow (1999); J. R. Smith et al. (2008); Sommer (2011); C. L. Wong and Mullan (2009). An example of a strong positive link between *behaviour intention* and *past behaviour* (r = .63, *p* < .01) comes from Chudry, Foxall, and Pallister (2011), who examine student's money borrowing. In

⁵³ For example, bonus points within loyalty programs (Burnham et al., 2003)

their study, TPB constructs only explain **10%** of the variance in *intention*, whereas the integration of *past behaviour* significantly adds **22%** explanatory power⁵⁴ (Chudry et al., 2011, p. 134). However, this evidence could be biased because some students in the sample had only recently enrolled, thus probably lacking the chance or necessity of having to borrow money in the past, which may have resulted in measuring *actual behaviour* instead of *past behaviour* (Chudry et al., 2011).

Conner et al. (1999), Hagger et al. (2002) and P. Norman and Conner (2006) confirm that the inclusion of *past behaviour* improves the explanation of the variance of both *behaviour intention* and *actual switching*. Ajzen (2002b) admits that this may be the case for certain contexts. Nonetheless, in general, he disputes that the integration of *past behaviour* can significantly enhance the TPB (Ajzen, 2005a) and claims that the measured impact of *past behaviour* on *behavioural intention* is only showing that the behaviour is of stable and reliable nature (Ajzen, 1991). After investigating three studies that integrated *past behaviour* into the TPB, Ajzen (1991) concluded that, instead of being an effect of *past behaviour*, the additional amount of explained variance should be interpreted as effects of *common method bias*⁵⁵.

Conner and Armitage (1998) reject Ajzen's view in their meta-analytical study, showing that the inclusion of *past behaviour* adds on average **7%** explanatory power to the variance of *behavioural intention*. They rate this value as probably too high for an effect of measurement error and thus, interpret it as evidence that *past behaviour* enhances the TPB's predictive power. Moreover, Kidwell and Jewell (2008) outline that a majority of studies investigating the role of *past behaviour* suggest to integrate this construct to increase the explanation of the variance of *intention*. Ouellette and Wood (1998) are of the opinion that the impact of *past behaviour* is significant, provided the behaviour is *habitual*. However, Bansal (1997) claims that when defined as *habit, past behaviour* will not improve the explanation of *intention* in the context of RBS *switching*.

⁵⁴ Beta approximately .5, p < .01.

⁵ Research based on self-reported measures. Multiple constructs are measured using common methods (e.g., multiple-item scales presented within the same survey), leading to spurious effects due to the measurement instrument rather than the constructs.

The researcher perceives this finding as hardly surprising because *switching* of mortgage services, which should probably be perceived as high risk and high price, should require high cognitive involvement (cf. chapter 2.5.3) and is therefore not *habitual*. Following Sommer (2011), the researcher believes that dividing *past behaviour* into sub-constructs could sharpen the analysis of this construct's influence. Sommer (2011, p. 96) divides *past behaviour* into *past experience* and *past frequency* with the behaviour, which he describes as *the repetition of the behaviour in the past*. For *past experience* Sommer (2011) refers to Schank and Abelson (1995), who describe this sub-construct as *specific and memorised knowledge about the behaviour*. Sommer compares *past experience* to *habit*⁵⁶, following Limayem, Hirt, and Cheuung (2003). This reading would contradict Triandis (1977) who states that *past frequency*, not *past experience*, is a standard indicator for *habit strength*.

Following the general definition of the term *experience* as an *event or occurrence which leaves an impression on someone* (Oxford Dictionaries, 2013), this researcher perceives *past experience* as an *evaluating perception of the outcome of one's behaviour* and thus, very different from *habit*. *Past frequency* is also unlike *habit* since not all behaviours that are repeated frequently are habituated (Ajzen, 2002b). Thus, the researcher separates *habit* from *past frequency* and *past experience* by relating *habit* to a behaviour that is formed when the *same behaviour is conducted regularly in a similar setting for an equivalent reason that can be automatically activated by environmental cues* (Aarts, Verplanken, & van Knippenberg, 1998, p. 1359). This allows him to test *past frequency* and *past experience* in the PTM, in line with Bansal (1997), who did not find evidence for *habit* being a model enhancer⁵⁷.

⁵⁶ Cf. Sommer (2011, p. 96): *a goal-directed automatic behaviour which is mentally represented*.

⁵⁷ The researcher argues that *past frequency* and *past experience* may create an effect on *switching intention* because he believes that *past switching* may occur more often than in Bansal (1997) for two reasons: First, this researcher applies a broader *switching* definition due to the inclusion of other RBS, thus relating to more incidents of *switching* in the past. Secondly, the SRP tends to be less loyal than in Canada (Bain & Company, 2012) and with lower customer loyalty, presumably, a higher number of *past switching* incidents should occur.

2.5.5 Cultural Models and Dimensions

2.5.5.1 Definitions of Culture

McCort and Malhotra (1993) identify the need to establish a proper definition of culture for c-c studies in the field of consumer behaviour. Many definitions of culture exist in the literature. One approach describes culture as *a set of mental programs* (Hofstede, 1991). House, Javidan, Hanges, and Dorfman (2002) characterise culture as *shared values, motives, beliefs, identities and interpretations of important events that stem from collectives' common experiences transmitted for generations*. Triandis (1994) distinguishes between *objective* (e.g., tables, tools, cars) and *subjective* culture (e.g., categories, norms, roles, values). *Subjective culture will be the focus of this study, interpreted as a concept consisting of various elements: norms, values, methods, shared standard operation procedures referring to everyday life activities, unstated assumptions and habits about sampling the environment* (Triandis & Suh, 2002).

2.5.5.2 Approach to Integrate Cultural Models

McCort and Malhotra (1993, p. 120) conclude that culture *impacts virtually every construct of concern to marketers* and many studies about consumer behaviour integrate culture (de Mooij, 2004; Furrer, Liu, & Sudharshan, 2000; Hewett, 2006; Kacen & Lee, 2002; Laroche et al., 2004; Chol Lee, 1990; B. S.-C. Liu, Furrer, & Sudharshan, 2001; Mattila, 1999; Nakata & Sivakumar, 1996; Stauss & Mang, 1999; F. B. Tan, Yan, & Urquhart, 2006). Moreover, Triandis, Malpass, and Davidson (1971) criticise SP theories for not considering culture. Thus, the researcher investigates how cultural models or constructs could be integrated.

First, he analyses to what extent culture may be already embodied in the TPB. Apparently, Ajzen does not refer to cultural influences on the TPB or its methodology as culture per se because no publications of Ajzen (and / or Fishbein) using culture could be found. However, this term is connoted through other means which are interlinked. In Fishbein and Ajzen (1972), they investigate effects of *persuasive communications* on behaviour and compare *competitive* and *cooperative*

groups (similar to the distinction between *collectivists* and *individualists*) and how effective *attitudinal* and *normative* messages differ for each group. Thus, this researcher believes that norms, attitudes and beliefs, which are included in most previously outlined cultural definitions, can be interpreted as covered by the TPB constructs to some extent. On his homepage, Ajzen (2012a) states that the TPB considers *personality traits, intelligence, demographic variables, values, and other variables of this kind* as background factors not being excluded, but assumed to be mediated by behavioral, normative, and / or control beliefs which results in an indirect influence on *behavioural intentions* and *actual behavior*.

Ajzen (2001) attempted to reclassify these background factors according to their patterns of influence on *behavioural intention*, arguing that in different contexts the same parameter may change from being an *attitude-* to a *subjective norm*-related factor, and vice versa e.g., depending on cultural factors⁵⁸. Such issues are explored in Ajzen (2005b), emphasising the importance of considering the research context of the studied individuals. Thus, the researcher assumes that they probably consider culture with their theories, but it is not their research focus. He further believes that the integration of culture into the PTM can enhance its practical use e.g., by helping RBS providers to segment customer groups along cultural differences.

Other researchers successfully integrate cultural aspects into the TPB and the TRA. For example, D. Y. Lee (2000) investigates cultural differences between Chinese and Caucasian Americans regarding *retail bargaining behaviour* by applying the TRA. The study shows that for US Americans, both constructs *attitude* and *social norms* have the same explanatory power (.42 and .45), whereas for Chinese *social norms* predict significantly more of *behavioural intention* (.53) than *attitude* (.33). Similarly, Chol Lee (1990) shows that integrating cultural aspects⁵⁹ improves the TRA for US Americans and Koreans⁶⁰. Courneya et al. (1999) illustrate that the integration of personality traits improves the TPB's predictive power, which seems to support the

⁵⁸ For example, Ajzen (2001) cites Abrams, Ando, and Hinkle (1998) who found that *subjective norms* were more important in *collectivistic* than in *individualistic* cultures.

⁵⁹ Using *face-saving* and *group conformity*.

⁶⁰ For purchasing shoes.

integration of cultural dimensions because personality traits are influenced by culture to some extent (Triandis, 1995). In Singapore, such personality traits are significantly diverse among education levels, generations, gender and ethnic groups (Jiuan, Wirtz, Jung, & Keng, 2001). This should increase the odds of finding variations of *behavioral intention* for different cultural groups. H.-R. Lee, Hubbard, O'Riordan, and Kim (2006) state that cultural aspects⁶¹ significantly predict *social norms* within the TPB. Although each of these studies lack generalisability beyond their research contexts, it supports this researcher's view that cultural differences should be integrated into his new theoretical model.

2.5.5.3 Selection of a relevant Cultural Model

The researcher believes that cultural dimensions are the most appropriate instrument for contrasting cultural differences because they allow diversity to be measured based on indices about sets of individuals' beliefs, with each cultural dimension usually presenting two different characteristics at their end points (Bhagat & Steers, 2009). Cultural dimensions have become highly relevant for the commercial realm as exemplified by the successful application of Hofstede's dimensions in an analysis to develop a change management strategy at NTUC FairPrice in Singapore (Chieh, 2013). In the following section the researcher will describe two popular cultural theories, according to Nardon and Steers (2006). Subsequently he selects the model that offers the best fit for his research objectives and the highest potential for extending the FTM.

Probably the most known set of cultural dimensions are established by Hofstede (1991). The number of citations and their validation by empirical research show the major influence of his work (Søndergaard, 1994). This influence is further evidenced by a recent meta-analysis of J. Zhang, Beatty, and Walsh (2008), who find that out of **40** articles applying cultural dimensions to probe consumer behaviour in a c-c

⁶¹ Using *self-concepts*.

service context, a total of **27** articles use Hofstede's dimensions.⁶² Hofstede (1991) investigates differences in national cultures with originally four dimensions (subsequently expanded to five). *Uncertainty avoidance* labels an individual's anxiety when dealing with *uncertainty*. Individuals with high levels of *uncertainty avoidance* are less curious, get nervous more easily and prefer highly structured situations with clear rules. Specific gender differences are labelled by the dimension of *masculinity*. In highly *masculine* cultures, males value ambition and competitiveness and females value care-taking and modesty, whereas in feminine oriented cultures both males and females deem care-taking and modesty as valuable. In other words, the difference between gender-specific values and beliefs is bigger in highly masculine cultures, resulting in distinct division of gender roles. *Power distance* refers to the approval of dissimilarities in power distribution in a society by the less powerful strata. Subsequently, a society with a high level on this dimension.

The level of group integration of individuals within a culture is defined by *individualism* versus *collectivism*. *Individualistic* cultures tend to prioritise individual goals over group goals and tend to think that individuals are responsibility for their own behaviour and corresponding results. In contrast, *collectivistic* cultures tend to prioritise group goals and do not expect that people look for themselves. Later, Hofstede and Bond (1988) added *Confucian dynamism*, introducing the dimension of *long-term* versus *short-term orientation*. While *long-term oriented* individuals value frugality and persistence, *short-term oriented* individuals perceive the protection of *face*, keeping to traditions and societal commitments as virtues. This dimension was established to particularly study Asian cultures and usually does not apply to Western societies (Hofstede & Bond, 1988).

Most recently, Hofstede (2014b) published two new dimensions developed by Michael Minkov in 2010⁶³. First, the dimension of *pragmatic* versus *normative* is

⁶² Journal articles from 1996 to 2006 were extracted based on three criteria: articles must be empirical c-c or cross-national, involve consumer services and written from a consumer behavior perspective (J. Zhang et al., 2008).

⁶³ Cf. Hofstede, Hofstede, and Minkov (2010).

regarded as a replication of *Confucian dynamism*⁶⁴, and describes differences of national cultures regarding their intention to explain the complexity of life. In highly *pragmatic* societies, people usually perceive truth as subject to context and time, and do not believe in the ability to understand everything and rather focus on living virtuously, thereby accepting to change traditions according to new situations, being motivated to save and invest, and showing frugality and persistence in working on achievements (Hofstede, 2014b). On the contrary, highly *normative* oriented societies are characterised by people's strong desire to explain as much as possible, show greater respect for traditions, have less motivation to save for the future and preferring to accomplish quick results (Hofstede, 2014b). Second, the dimension of *indulgence* versus *restraint* which describes a society's tendency either to consent unrestricted gratification of basic and natural human needs, following a rather hedonistic lifestyle (indulgence) or to suppress the satisfaction of human drives by highly regulatory social norms (restraint) (Hofstede, 2014b).

The recent prevalence of comparisons between the *Global Leadership and Organisational Behaviour Effectiveness* (GLOBE) model and Hofstede's model (Shi & Wang, 2011a, 2011b; P. B. Smith, 2006; Venaik & Brewer, 2008), of which some speculate that GLOBE will substitute Hofstede (Yeganeh, Su, & Sauers, 2009), show that the GLOBE dimensions should have similar potential. This insight is confirmed in strong rebuttals by Hofstede (2006, 2010), which seem to indicate that Hofstede perceives GLOBE as a threat for the hegemony of his theory worth responding to, and probably by the inclusion of Minkov's two other dimensions (Hofstede, 2014b).

The GLOBE model (House, Javidan, & Dorfman, 2004) builds on Hofstede's approach, but expanding it to nine dimensions. *Assertiveness* is the label for the degree of individuals' assertiveness, aggressiveness and being confrontational in their interrelations. *Future orientation* describes the degree to which individuals perform behaviour that serves their future e.g., planning and investing instead of engaging in immediate gratifications. The extent to which a society maximises equality between both sexes is measured by *gender egalitarianism. Humane*

⁶⁴ Dimensions have high correlations, but are not totally identical (Hofstede, 2014b).

orientation represents the degree of how highly a society values individuals being fair, altruistic, generous, caring and kind. The degree to which individuals express pride, loyalty and cohesiveness within their organisations and families is named *ingroup collectivism*. The level of a society's institutional practices promoting the distribution of collective resources and collective action is labelled *institutional collectivism*. Performance orientation is high in societies that promote excellence and performance improvement of individuals. Power distance is conceptualised by the extent of society's beliefs that power should be spread equally. Uncertainty avoidance tells how strong a society, organisation or group counts on social norms, rules and procedures to ease the uncertainty of future events (House et al., 2004).

After an extensive LR and comparing a variety of studies applying cultural dimensions⁶⁵, this researcher's choice to preselect the dimensions of Hofstede and GLOBE is confirmed by his belief that these two sets of dimensions are also the most practical ones for c-c research. They should offer the highest flexibility because they cover more cultural aspects than other theories, as illustrated in Nardon and Steers (2006). In the following section this researcher analyses the two theories⁶⁶ to decide which one should be integrated into the PTM.

2.5.5.4 Model Comparison: GLOBE vs. Hofstede

Although Hofstede's cultural model is currently the most applied model in c-c research (J. Zhang et al., 2008), a increasing amount of recent publications could indicate its demise. For example, Yeganeh et al. (2009) argue that the GLOBE model may replace Hofstede's model over time because it measures cultural dimensions more currently and comprehensively and evaluates cultural values (*should be*) distinctly from cultural practices (*as is*) (Fu et al., 2004). Table 2.1 shows dimensions of both theories', based on Shi and Wang (2011a):

⁶⁵ For alternative cultural theories cf. Appendix A2.7.

⁶ Since they are recently added, Minkov's two dimensions are excluded from this analysis because this researcher deems them not as a genuine part of Hofstede's approved set of dimensions.

Hofstede	GLOBE
Power Distance	Power Distance
Uncertainty Avoidance	Uncertainty Avoidance
Index represents "stress" dimension from	Practices characterise rule orientation
uncertainty and ambiguity (Venaik &	practices whereas values link with rule
Brewer, 2008).	orientation aspirations of societies (Venaik
	& Brewer, 2008).
Individualism vs. Collectivism	In-Group Collectivism;
	Institutional Collectivism
Masculinity vs. Femininity	Assertiveness;
	Gender Egalitarianism
Long-Term vs. Short-Term Orientation	
	Future Orientation *;
	Humane Orientation *;
	Performance Orientation *

Table 2.1:Contrasting cultural dimensions: Hofstede vs. GLOBE; (*) marksdimensions not covered by Hofstede according to House et al. (2004)

The GLOBE model presents new cultural dimensions that are not addressed in the Hofstede literature (Shi & Wang, 2011b). Even for dimensions that are similarly conceptualised (and even labelled) in both models, the GLOBE approach offers more possibilities to explore different cultural facets due to their distinctions of some of Hofstede's previous single dimensions into two different ones⁶⁷. Further, single GLOBE dimensions are more comprehensive. For example, GLOBE's *uncertainty avoidance* covers *face-saving*, thereby being more realistic and closer to the Chinese experience (Dong & Lee, 2007) and thus, more apt when investigating a SRP with **73.4%** descending from China (Singstat, 2012). Kirkman, Lowe, and Gibson (2006) believe that it is very likely that Hofstede's dimensions lost predictive validity over time. Further, Shi and Wang (2011a) argue that the GLOBE dimensions are (i) better predictors than Hofstede's, resulting in an improved understanding of relationships, and (ii) more suitable for analysing cultural distance.

⁵⁷ GLOBE separates collectivism into in-group collectivism and societal collectivism as well as masculinity into assertiveness and gender egalitarianism.

Although Hofstede (1991) investigates cultural values on national level, many studies apply his model successfully on individual level e.g., de Mooij and Hofstede (2010); Dinev, Goo, Hu, and Nam (2006); Pavlou and Chai (2002); Y. Zhang, Winterich, and Mittal (2010). This can be interpreted as evidence of Hofstede's model being superior in terms of flexibility regarding the measurement instrument and the unit of analysis. However, Kirkman et al. (2006) argue that GLOBE can similarly be applied on individual level because it can be understood as an extension of Hofstede's model. Appendix A2.8 (Figures A2.8.1 – A2.8.5) provides a detailed comparison of both models.

Following the above discussion, the researcher concludes that the GLOBE model is more advantageous for his study. Not only do above theoretical arguments support his choice, but the researcher also prefers to utilise a more recent model for the sake of contributing to its further testing in a new research context.

CHAPTER 3

RESEARCH DESIGN
CHAPTER 3: RESEARCH DESIGN

3.1 Epistemological and Ontological Position

The preference for particular research methods (RM) can be explained with the researcher's epistemological and ontological position. Most relevant for him is the debate between *positivism* and *interpretivism*. *Positivists* believe in truth in the form of deducible, general laws based on external realities which can only be investigated with scientific knowledge derived from logical and mathematical treatments and reports (Comte, 1848). Whereas *interpretivists* think that the social realm cannot be investigated with scientific methods (Tönnies, 1887), but require additional methods of *hermeneutics*⁶⁸ that contribute to its understanding (Habermas, 1967). The researcher's epistemological position is neither strictly *positivistic* nor *interpretivistic*. Congruent with his educational and professional background in science and engineering, and his awareness that methodological constraints may limit the possible generalisation of his research results, he assumes a *meta-theoretical* position (Robson, 2002) with a preference for *post-positivism*.

The researcher's ontological position is illustrated by his conviction that the reality exists autonomously from his beliefs. He accepts the need for objectivity, i.e. that personal values must not influence his analysis. Because he agrees with the view that researchers cannot be completely separated from the target of their study and that there could be more than one reality, he is not a pure *objectivist*. Thus, he applies the concept of *multi-perspectivity*, i.e. following neither strict *objectivism* nor *subjectivism*. Looking at the same issue from two perspectives allows locating a phenomenon (Hussein, 2009), whereas looking at it through a single tunnel may result in facts without a possibility of questioning or positioning them in the rather big field of *truth*. Following *multi-perspectivism*, this researcher will both follow a *deductive* approach, which is *quantitative* in nature (Burney & Mahmood, 2006), to test a theoretical model with SEM, but also integrate *qualitative* and *inductive* elements into his study to explore potential contextual constraints.

⁶⁸ Theory of text interpretation.

3.2 Research Strategy

In view of his epistemological and ontological position, the researcher aims to test an enhanced framework concerning its *explanatory power* for its application to the real world. Therefore, he will collect primary data (i) to provide state-of-the-art materials tailored to the specific purpose of this research, (ii) to maintain a high level of data quality and (iii) to be able to remain conservative when applying descriptive analytical methods and cut-off values (COVs) to optimise the robustness of his new framework and to avoid questionable research findings.

Individual consumers should represent the unit of analysis (subject to further testing, cf. chapter 4) because (a) the roles of psychological constructs are examined, (b) characteristics of individuals (e.g., gender, age, religion) can be combined to establish a composite picture of groups (clusters) that these individuals represent and (c) conclusions about the population can be drawn, if other preconditions are met⁶⁹ (Crossman, 2013). Further, this researcher aims to investigate variables at a particular point in time and hence, conducts a *cross-sectional* study by observing many subjects concurrently. A *longitudinal* study was neither possible within the scope of this study, nor efficient for some of the constructs as cultural values and beliefs change slowly over time (Hofstede, 1991).

Following his epistemological and ontological position, the researcher aims for high levels of psychometric properties (*objectivity, reliability* and *validity*)⁷⁰, which can be obtained by avoiding common method bias⁷¹. For example, context effects may exist when the correlation of two variables stems from contextual cues, a respondent's or a question's formatting, or wording (Podsakoff et al., 2003). Thus, the researcher will apply various statistical remedies as treatments against common method biases.

⁶⁹ For example, sufficient sample size and representativity (cf. chapter 6.5).

 ⁷⁰ Experimental validity aspects (cf. chapter 3); detailed description of test validity (cf. chapter 7).
 ⁷¹ Variance that is attributable to the measurement method rather than to the constructs that the measures represent (Podsakoff et al., 2003, p. 879)

This study aims to achieve both rigorous testing of FTM and PTM, and if possible, generalisations of findings. Thus, the research setting requires both internal and external validity. For the sake of accomplishing high internal validity, the *ceteris paribus* rule, or what Mill (1843) called the *Method of Difference*, must be fulfilled, i.e. external contextual influences on the constructs' variance should be controlled or avoided (Diekmann, 1995). A laboratory setting appears to be a good choice. However, such a setting is not feasible within the scope of this study due to the high expenses related to the experimental methods of stimulating participants to *switch* RBS e.g., introducing a stimulus for *service failure* (Bansal, 1997). Moreover, isolated laboratory settings lack external validity, i.e. the ability to draw conclusions to the practical world (Diekmann, 1995). External validity is achieved by accounting for as many factors as possible that can influence the DV in an everyday reality.

Another approach to accomplish this goal is to conduct the research in *field settings* (Bansal, 1997). The major drawback of this approach is that internal validity and fulfilment of the *ceteris paribus* rule becomes more difficult to achieve as the causal relation between dependent variables (*DVs*) and independent variables (*IVs*) cannot be regarded as isolated from external determinants (Fisher, 1925). In order to initiate control over this issue, Fisher (1925) proposed the *randomisation principle*, which allows the researcher to assume equal distributions of such external factors across the sample. Changes in *DV* can then be linked to the *IV* without concern about possible external factors that influence the DV through the sampling process (Neuberg, 1989). Both internal and external validity could theoretically be achieved in *randomised* field studies with a sample size that is sufficiently large⁷² to assume an equal distribution of confounding factors⁷³ (Pelham & Blanton, 2006).

For obtaining a sufficiently large sample size, this researcher chooses a research design that represents an informed trade-off between internal and external validity. His priority within this trade-off lies in achieving results of high practical applicability

⁷² Sample size increases with the model's complexity when using SEM since it is directly linked with degrees of freedom (Hair & Anderson, 2010) and ultimately the statistical power of the model.

⁷³ External factors influence results either because they are not measured as variables or stemming from a bias within the sample (Marshall & Hastrup, 1996).

and external validity, rather than maximising internal validity. Thus, a field setting is applied for this study with the survey method, providing an efficient research instrument (RI) because it supports the verification of a model beyond the sample by obtaining a large number of participants at relatively low costs (Saunders, Lewis, & Thornhill, 2007). Most studies (Ajzen, 2012a) show that the TPB is usually tested with the survey method. From survey results, the TPB coefficients are derived, typically through statistical methods e.g., exploratory factor analysis (EFA) and either regression analysis (RA) or SEM (Ajzen, 2012a).

External validity through *randomisation* is facilitated by excluding *actual switching* in the FTM, constituting *switching intention* as *DV*. This gives the researcher the benefit that *switching intention* can, as a proxy, address future *switching* because it is feasible to measure within the given context and timeframe (Francis et al., 2004). The internal validity of the research setting is lower than a strictly observational setting because *switching intention* is a latent variable (*LV*) rather than an observed variable (*OV*), whereas *actual switching* is *observed*. Yet, the feasibility of a random sample or a sample approaching these qualities e.g., a quota sample, is gained.

Bansal (1997) suggests to improve internal validity in the context of RBS *switching* by choosing only one specific type of service⁷⁴ as the DV. His suggestion, however, threatens this study's primary goal to obtain results of high practical applicability, i.e. external validity. To obtain high external validity, *switching* shall therefore relate to a broad range of typical RBS⁷⁵, which will be at the expense of internal validity. Instead, internal validity shall be achieved by other means: as a first remedy against *statistical type 2 errors,* related to the *latent* nature of the DV, the *TACT* principle (Ajzen & Fishbein, 1980) is used in an unambiguous description of *switching* in the survey. Following Francis et al. (2004) and Ajzen and Fishbein (1980), *switching* will be described along four dimensions: *Target* [= *Retail Bank*], *Action* [= *switching*], *Context* [= for the customer's use], and *Time* [needed to become a new customer for RBS]. Moreover, the researcher applies Ajzen's (2012a) prescriptive quantitative

⁷⁴ Mortgage services.

⁷⁵ For example, investments, deposits, loans, credit cards (eFinancialCareers, 2013).

research instructions and recommendations to construct the survey. Several other studies offer additional inputs concerning the measurement, the survey design as well as adequate scaling and scoring (cf. chapter 6).

Becker (1986) warns that mere quantitative testing of models that are derived exclusively from literature can result in overlooking important ways of conceptualising the study or key implications of findings. Hence, research questions that are framed too precisely and too early may lead to missing out (i) areas of theory or prior experience that are relevant to the general understanding of the research context or (ii) information about important and unanticipated phenomena and relationships (Maxwell, 2009).

An antecedent qualitative pilot study (cf. chapter 4) helps to extract a broader set of variables for the new model (Black, 1994), which the researcher will conduct to improve his understanding of the research context before developing the PTM by (a) extending the FTM with additional constructs and (b) generating new ideas for further LRs about possible model extensions. Moreover, a preceding qualitative investigation should improve the rigour of the quantitative analysis (Mahoney & Goertz, 2006) because the researcher gains first impressions about the respondents own familiar language, which is particularly advantageous for c-c research (Perkins, de Ryuter, & Wetzels, 1994). Further, Black (1994) points out that preceding qualitative work can avoid delusive quantitative results due to wrong data creation, and enables the researcher to possibly find new definitions for key terms. In that sense, Hussein (2009) introduces the concept of *triangulation* as a measure of internal validity, i.e. the use of multiple RM to investigate the same phenomenon for the purpose of increasing a study's credibility.

Following this argument, a qualitative study represents an effective first step to address the problem of internal validity and ensures that measured constructs actually exist (Creswell & Miller, 2000). Further, Ajzen and Fishbein (1980) prescribe a blend of qualitative and quantitative RM that test theoretical models based on the TPB, and suggest to use a qualitative study to develop TPB-related survey items for a new research context. However, the researcher will not use the qualitative study to develop new items because previous studies e.g., Bansal (1997), already provide items that were successfully tested in the context of RBS *switching* and hopefully require only minor refinements. For the sake of taking precautions, several rounds of pre-tests aim to verify whether survey items from previous literature create satisfactory psychometric properties in the specific context of this study. Table 3.1 summarises the primary data collection process applied in this study:⁷⁶

Time Period	Research Phase	Research Method	
March to April 2010	Qualitative (Exploratory)	Semi-structured interviews	
February to May 2013	Quantitative (Model Testing)	Survey instrument	

Table 3.1: Primary data collection periods and applied research methods

The qualitative study begins with an investigation of the applicability of the TPB constructs in the given context, following D. Y. Lee (2000) who investigated cultural differences in *retail bargaining behaviour* in Singapore and offers a good illustration of conducting a qualitative study prior to creating a survey when using TRA or TPB.⁷⁷

3.3 Approach to Culturally Sensitive Research

For the collection of primary data in c-c research settings, bias is often caused by cultural differences in the respondent's reaction towards the research method (Triandis, 1994). To minimise such bias, the research design of this study undertakes several considerations, which are outlined in the following section. A major concern in this regard is choosing a stand in the debate of two competing research approaches, *emic* (cultural specific) and *etic* (universal) (Slater & Yani-de-Soriano, 2010). The *etic* approach takes into account that cultural differences can be interpreted as a variation of a mutual or universal theme, whereas the *emic* approach promotes the view that behaviour needs to be understood in the context

⁷⁶ Pre-approved by the MBS Research Ethics Committee.

⁷⁷ Objectives: (1) to assess the framework applicability of Fishbein's *behavioural intention*; (2) to understand styles of and consumers' thoughts about bargaining; (3) to learn the language when describing bargaining behaviour to help with survey design (D. Y. Lee, 2000, p. 195).

of the culture in which it occurs (Davidson, Jaccard, Triandis, Morales, & Diaz-Guerrero, 1976; M. W. Morris, Leung, Ames, & Lickel, 1999).

The *emic* versus *etic* debate is particularly vital if theories are applied outside their area of origin because constructs may have different meanings in other cultural settings (Triandis, 1994). This could be the case for the TPB, which was developed in a Western context, but will be applied in this study in an Eastern / Asian context. Supporters of the *emic* approach believe that a researcher must consider the fact that his entire research is strongly guided by his personal cultural background (Davidson et al., 1976). However, strictly following this view would contradict the researcher's goal to establish a rather *objectivistic* view. Thus, he aims to apply a combination of both, but with preference for the *etic* approach, which is in accordance with his *meta-theoretical* stance preferring a *post-positivistic* viewpoint when looking for mutual or universal themes.

Triandis et al. (1971) offer a promising solution that fits the researcher's *metatheoretical* position: *etic* constructs shall be applied to develop the model, whereas *emic* constructs shall be used for the measurement. Further, Triandis (1994) argues that selecting *etic* constructs for the model contributes most to the knowledge in the SP field, whereas *emic* constructs are only relevant for a sub-set of individuals. He also cliams that *etic* constructs shall be applied in cases of c-c comparisons, whereas *emic* constructs shall be applied when understanding the context is the main focus of a study. Similarly, Rogoff (2003) states that both approaches are required: the *etic* approach to understand cultural differences and the *emic* approach for adjusting constructs to the culture that is investigated.

Thus, the researcher applies a model consisting of *etic* constructs, whereas measurements are partly culturally adjusted, i.e. both *emic* and *etic* survey items are applied for the measurement. Data collection is conducted in a specific setting where important key terms should be *etic* to be commonly interpreted by different cultural groups in Singapore. For example, *etic* wording is used to avoid differences regarding the perception of key terms that directly relate to the measurement of

etic constructs e.g., "important other people", when measuring *subjective norms*. However, other terms are sufficiently *emic* to be understood by the SRP which shares Singlish as a particular dialect (J. Wong, 2005).

Following Triandis (1994), in the first step *etic* and *emic* constructs are distinguished in the research context, which is partly accomplished in the qualitative study, but with focus on the RI pre-testing process. During pre-testing, the researcher will review and adjust items (cf. chapter 6) to finalize his survey, which will provide inputs for *emic* item formulations to assure that respondents understand the questions. Hence, both the qualitative analysis and reviews of the items provide opportunities to test whether key terms included in the quantitative study require adjustments to be more *emic* or *etic*.

Various other means to account for a culturally sensitive research design in this c-c setting are discussed in the relevant chapters that follow in this study.

CHAPTER 4

QUALITATIVE STUDY

CHAPTER 4: QUALITATIVE STUDY

This part aims (i) to improve the understanding of the research context, (ii) to enhance the quantitative analysis rigour, (iii) to refine definitions of key terms, and (iv) to extract relevant variables for the PTM. The researcher's qualitative analysis, its methodology and findings are introduced. Insights are discussed together with implications (cf. chapter 5) and tested in the quantitative study (cf. chapters 6 + 7).

4.1 Methodological Approach

4.1.1 Primary Data Collection Process

Primary data were collected by performing face-to-face, audio recorded, semistructured interviews in English. A guide (Appendix A4.2) was developed to cover topics systematically. Questions were based on the researcher's own observations, and several brainstorming sessions with academics and personal friends. Questions were formulated open-ended to draw out elaborate responses (Lamb & Fauchier, 2001) and to maximise the accuracy of responses by allowing interviewees to be flexible when stating information they could remember (Hutcheson, Baxter, Telfer, & Warden, 1995). Both *variance questions,* focussing on diversity and relations, and *process questions,* dealing with how and why things happen (Maxwell, 2009), were applied. Questions were raised in the same sequence, using identical wording, to reduce bias (Podsakoff et al., 2003). However, if deemed necessary, consistency was traded off against flexibility for the possible exploration of new insights.

The interview guide comprised three sections of standardised questions:

Section A:	Introduction, background and ice-breaking questions
Section B:	Triggers and process when <i>selecting</i> financial service providers ⁷⁸
Section C:	Triggers and process when switching FSPs

Section A opened the discussion and launched inquiries about personal attributes. Section B focused on the FSP selection. Section C was divided into two sub-sets,

⁷⁸ Research context at this stage: banks, insurances, financial advisors.

depending on whether interviewees had previously engaged in *switching*. If they had not *switched*, questions were restated in a hypothetical format e.g., *Why have you changed your financial service provider*? was changed to: *What would convince you to change your financial service provider*? The interaction between interviewer and interviewee offered the chance to clarify questions and key terms or to raise ad-hoc follow-on questions in case of receiving responses worth exploring further. This move also provided an opening to retrieve supplementary personal or sensitive data of interest for this study (Diekmann, 1995; Flanagan, 1954).

4.1.2 Sampling and Interview Setting

Since drawing conclusions about the population is not an objective of this qualitative work, a *probability sample* was not required (Diekmann, 1995). Instead, *quota sampling* was applied due to its higher convenience and feasibility. Within the quota sample, demographic proportions among participants were set deliberately to cover various aspects from people of different backgrounds: This researcher focused on demographic characteristics *ethnicity*, *age* and *gender* because he perceived them as sufficient to explore cultural diversity that is present in the target population of this study. Thus, data were collected by interviewing twenty-two individuals, six from each ethnic group (Chinese, Indians, Malays) and four Western participants, with diverse demographic backgrounds (Appendix A4.1). Further, respondents had a reasonable level of experience with local RBS.

The researcher used his personal network to minimise concerns of participants about sharing personal and sensitive opinions. Date, time and venue for the interviews were decided by respondents to increase chances of conducting the interview and to encourage cooperation. The interview situation was framed in an informal, yet professional setting. Events were planned for 60 minutes to provide adequate time to break the ice and explain the purpose of the study to examine consumer *switching* of FSPs. Participants were not informed that the study would investigate cultural influences to avoid bias that may occur if people modify their responses to fit or not fit into stereotypical cultural roles, or if they apply their own cultural theories when answering questions (Podsakoff et al., 2003). To maintain the interviewee's attention, the questioning period was limited to 25 to 40 minutes (Diekmann, 1995). For all interviews the researcher was supported by one (of two) research assistants. That allowed him to monitor body language, take notes and relate answers to context-specific observations.

4.1.3 Operationalisation of Data Collection and Analysis

Data collection started with conducting two test interviews⁷⁹ to obtain feedback for the interview guide, which led to minor modifications. All but one⁸⁰ of the respondents gave permission to have their interviews' audio recorded, and all but one⁸¹ of the interviewees agreed to answer all questions. With ample time for participants to elaborate on their thoughts, interviews lasted between 15 to 35 minutes. After interviewing twenty-two individuals, the researcher discontinued the data collection process because in his opinion, sufficient data saturation was achieved and presumably, no new insights could be extracted. Interview responses were then transcribed and reviewed by the researcher as well as three independent research assistants to ensure that statements were captured correctly⁸².

For analysis and interpretation, the researcher combined inductive reasoning with categories taken from past literature. Following Hsieh and Shannon (2005), the researcher applied *directed content analysis*⁸³ because the goal of his study was to test and extend the FTM (cf. chapter 2). The first coding steps were based on categories found in past research e.g., Keaveney (1995), Gerrard and Cunningham (2004). After familiarising with the data, the researcher investigated whether new themes or coding categories emerged, either based on the researcher's observations during the interviews or while reading through the transcripts.

Deductive analysis aimed at (i) a preliminary evaluation of the applicability of the TPB constructs, (ii) exploring other concepts which may be useful to enhance the

⁷⁹ Not included in the sample.

⁸⁰ Transcript created from interviewers' notes.

⁸¹ Respondent concerned about one question and left it unanswered.

⁸² Learnings presented at MBS, June 2010. Transcripts available on request.

⁸³ Content analysis aims to generate quantitative data out of qualitative material.

FTM for the given context and (iii) the possible need for cultural sensitivity when applying the survey method. Construct applicability was tested by using theoretical coding in combination with a connecting strategy by means of identifying and counting links between pointers towards two different constructs (Maxwell, 2009) e.g., links between *attitude towards switching* and *switching intention*. Counting and evaluating the frequency of occurrences of (i) categories and (ii) connecting statements⁸⁴ between constructs established an initial appraisal of the constructs.

The researcher also launched early inquiries into the motivations for RBS switching. Thus, the potential of P&P factors to enhance the FTM was tested by using theoretical coding, counting and evaluating the frequency of occurrences in relevant categories. In case the researcher believed to have discovered a new category or wanted to cluster statements according to his own ideas, he refined categories and added new ones⁸⁵. Further, the role and possible influence of cultural dimensions (based on ethnic groups) on TPB constructs were tested, using preliminary propositions derived from the literature e.g., Robert, Probst, Martocchio, Drasgow, and Lawler (2000), van Hooft and de Jong (2009) and Y. Zhang et al. (2010). Those tests were conducted by extracting and counting relevant interview statements, and by searching for other important explanations or responses that could lead to the rejection of the researcher's initial propositions. Thereby the two demographic dimensions (gender, age) were used as control variables to more validly investigate the possible effect of cultural differences on switching. Moreover, probable methodological refinements for culturally sensitive survey research were examined. This examination was again conducted with theoretical coding, counting and evaluating the frequency of related statements.

Following Coffey and Atkinson (1996), data analysis for inductive paths was performed in parallel to the interviewing process, applying an iterative approach

⁸⁴ Frequency of a statement is a good indicator for the importance of a construct, but cannot be taken at face value because different constructs have different numbers of qualitative questions asking for them, complicating the comparison of frequencies.

⁵⁵ For example, if the researcher wanted to separate statements of one category into two clusters. This category would be divided into two sub-categories and the statements allocated accordingly.

(Maxwell, 2009). Statements of the first ten interviews were coded⁸⁶ according to concepts, either extracted from the literature containing empirical evidence or inductively developed by the researcher. Insights were then investigated in the remaining 12 interviews, including questions that triggered relevant responses for the newly developed categories (Appendix A4.2, *Section D*). If required, questions were redefined before the next interview. By means of counting occurrences, unexpected insights were retrieved. To facilitate and evaluate empirical knowledge creation, the researcher used the software tool NVivo8 (2008)⁸⁷.

4.1.4 Data Validity

The researcher applied rigorous validity requirements. Three validity procedures close to the researcher's *post-positivist* paradigm were implemented, following the framework of Creswell and Miller (2000):

Member checking, i.e. bringing analysed data back to respondents for confirmation, allowed the researcher to check whether his interpretation were in alignment with participants' own interpretations of terminologies used in the interview guide (Creswell & Miller, 2000). For his study, the researcher applied three different types of *member checking*: First, findings from the literature (e.g., the influence of *subjective norms*) were checked with respondents by asking specific questions (e.g., **Q34**, Appendix A4.2). Second, follow-up questions were used to check the researcher's immediate interpretations during the interviews. Third, for the sake of verifying initial ideas about potential categories, regular follow-up questions were included in the interview guide (Appendix A4.2, *Section D*).

Creswell and Miller (2000) propose *triangulation* to look at multiple sources of information to form categories based on the convergence of data. Hence, it was perceived as a valuable tool to provide validity, allowing the researcher to identify categories more thoroughly from different perspectives (Jick, 1979). Subsequently,

⁸⁶ Attributing labels to statements that are automatically clustered into categories across the entire data set in the analysis software.

³⁷ Software tool for qualitative and mixed RMs; http://www.qsrinternational.com/products_nvivo.aspx

he included four types of *triangulation* distinguished by Denzin (1978). First, using pointers from both literature and participants of diverse demographic backgrounds⁸⁸ created the opportunity to obtain data from different sources. Second, different theoretical concepts were applied to inquire about the same issue. Third, field observations were captured to support the analysis of audio recorded interviews. Fourth, observations were conducted by different investigators: the researcher and two research assistants of different background⁸⁹. This was aimed at reducing potential biases of *ethnocentricity* and *androcentricity*⁹⁰, i.e. the influence of interviewees on interviewers and vice versa as c-c unconscious prejudices may influence the interviewers' interpretation (Triandis, 1999).

Auditing was applied as the third method to ensure the validity of both questions and definitions. Establishing an audit trail ensured that terminologies and reasoning were in accordance with SP and *strategic marketing*, i.e. academic fields applied in this study (Creswell & Miller, 2000). Thus, the researcher documented all decisions and processes, and had them audited by research assistants with academic backgrounds in social sciences, strategic management and marketing. Furthermore, he engaged another group of research assistants to control the accuracy of interview transcripts by comparing the audio files with related transcripts. Since coding was partly based on impressions reflecting the context-sensitive nature of qualitative analysis, such impressions could be influenced by the researchers' hypotheses about cultural profiles (Podsakoff et al., 2003). To avoid bias, the interviewees' name or background were revealed only after the coding.

4.2 Discussion of Learnings and Proposed Refinements

4.2.1 Narrowing the Behaviour of Interest

In chapter 2, a working definition of *switching* was presented, referring to the *termination* of a relationship and all transactions between consumers and FSPs (Bolton & Bronkhorst, 1995; Hirschman, 1981; Stewart, 1998), assuming that this

⁸⁸ In particular for aspects of c-c research.

⁸⁹ One female student from India, one male student from Germany.

⁹⁰ Gender-based bias.

offered a robust test scenario. However, the interviews revealed that only two respondents terminated the relationship with their FSP, whereas the behaviour of all other interviewees was akin to reducing engagements with the current provider, or shifting attention to new providers while leaving unused accounts open, or just adding a new provider e.g.,

- I don't think I'll change, I'd probably just add on. [Interview 6, Indian, female, *mid career*]
- I wouldn't leave my old provider, but start using the new provider and between the two, whichever suits best, I would continue with it. And one would become more active and the other would be automatically dormant. [Interview 8, Chinese, female, young professional]
- Switched the basic banking services to the new bank, but retained my (old) banks. [Interview 3, Chinese, male, young professional]
- I just leave bank accounts everywhere I go, [I] do not close them. [Interview 18, Malay, male, mid career]

This observation was reinforced in the following dialogue:

Interviewer:	But did you stop the service?
Interviewee:	No, just less usage. [Interview 12, Chinese, female, mid career]
Interviewer: Interviewee:	What do you think the consequences of switching are? Why would I switch when I can still hold them? I do not pay any front-end costs to these service providers, but I do pay costs for usage of services. I don't have to terminate them. If I find a better provider, I merely switch usage. I don't intend to close them. [Interview 5, Indian, male, well established professional]

Thus, the initial *switching* definition revealed itself as too narrow, implying the need for a broader explanation encompassing three different actions:

- a) Terminating the contractual relationship and all transactions with the SEPRO,
- b) Shifting attention (transactions) from the current to another provider, while maintaining a dormant or low-level relationship with the former provider, and
- c) Adding a new SEPRO to gain access to similar products and services, while maintaining products and services with the former SEPRO at least on equal level, even though the former SEPRO would be able to supply the same products and services.

The researcher believes that whether *switching* involves the *termination* of a relationship or simply reducing the service engagement depends on the type of product, industry and market. For example, in a subscription market (e.g., insurance), where consumers have a small consideration set or choice of only one product or service in which they are engaged, a brand *switch* usually involves *termination* (C. R. Taylor, 2003).

In the RB context, *switching* does not necessarily require the *termination* of a service relationship, but could lead to a customers' intention to reduce the level of business they do with their provider (Pont & McQuilken, 2005). Both RBS-related reports of Attensity (2012) and Sullivan et al. (2012) define customers who *switch* banks as either leaving accounts unused, significantly reducing transactions or *terminating* the entire relationship to start using RBS elsewhere. Since these reports were written by commercial organisations to create knowledge and insights of high practical use, they offered evidence to the researcher that he had modified his initial *switching* definition in a meaningful and practical way. Applying the new definition, a much higher number of *switching* incidents occurred in the transcripts with the maximum for one respondent being four times.

4.2.2 Narrowing the Financial Services of Interest

Before focussing on RBS, this researcher planned to investigate FSP *switching* in general. Reviewing the transcripts led to the belief that various RBS types are perceived differently by consumers. For example, insurance services may coerce consumers to *terminate* their relationship instead of merely *shifting* attention due to unnecessarily doubled costs without having extra benefits. In contrast, multiple accounts with different RBs do not necessarily lead to higher costs.

Despite the interviewers' efforts to emphasise that the study comprised of various FSPs⁹¹, most interviewees displayed a strong focus on RBs and related services. Respondents referred to RBs in all twenty-two interviews, but cited insurances in

⁹¹ Including, but not limited to, banks, insurances, and financial advisors.

only ten and financial advisors in only four interviews. Thus, the researcher decided to focus on RBS because they seem of high relevance and cognitive accessibility. Moreover, the term *product* was eliminated at this stage because most respondents highlighted *services*. Further, RB offerings are described as *services* in past studies (Baumann et al., 2005; Clemes et al., 2010; Colgate & Hedge, 2001; Dayan, Al-Tamimi, & Elhadji, 2008). Another advantage of this narrowed context was the prospect of generating statistical results of higher internal validity (Bansal, 1997). Thus, the researcher continued his work with a refined definition of *switching* as:

Maintaining, reducing or terminating the use of a specific service at one retail bank, and at the same time, starting the use of the same service at a retail bank of a different brand.

This definition is similar to a consumer's decision to *transfer loyalty* (Lovelock et al., 2009) from the current FSP to a competitor.

4.2.3 Relevance of the Theory of Planned Behaviour

The researcher wanted to assess the extent to which each of the TPB constructs influences *switching intention* and *actual switching*⁹² in the given context. Further, the researcher aimed to verify if the application of sub-constructs could improve the operationalisation of main constructs in his quantitative study, following Ajzen and Driver (1991), Ajzen (2001), Ajzen (2002b), and Armitage and Conner (1999). Both inquiries were expected to increase his understanding of the TPB's applicability and / or to reveal possible limitations in view of the revised *switching* definition. The importance of findings for RBS may be limited because the questions originally referred to FSPs. However, since RBs were the major FSP referred to, only a minority of answers diluted the findings because they referred to other FSPs.

The relevance of TPB constructs or sub-constructs for the explanation of *switching* was tested by scrutinising the transcripts for empirical evidence. The researcher

⁹² Actual switching was discarded (cf. chapter 2), but investigated here because results may provide pointers towards the relationship between *switching intention* and *actual switching*.

applied a combination of theoretical coding and a connecting strategy⁹³ in which responses from interviewees were coded according to TPB constructs. Resulting categories were compared in terms of the numbers of relevant statements and reviewed for causal indicators regarding the influence of these constructs' on *switching intention* and *actual switching*. The frequency of occurrences of categories and connections between constructs provided an initial assessment of the TPB's applicability in the given research context.

Attitude towards Switching

Related indications were found in fifty responses and in all twenty-two interviews. Seven respondents stated directly that *attitude* would influence their *switching intention*, whereas three respondents provided causal links with *actual switching*, even though it was not explicitly inquired e.g.,

 Interviewer:
 Have you ever changed your financial service provider?

 Interviewee:
 I do not intend to switch, as DBS and POSB have good online banking. [Interview 19, Caucasian, male, well established professional]

Interviewee 19 stated that there were no positive consequences for switching because FSPs offered good online banking and losing this service was perceived as negative. Other respondents stated that attributes of the service or the overall service situation had changed or will change after a switch and indicated a positive or negative change perception. Such statements were interpreted as indications for sub-constructs beliefs about consequences, judgement whether these consequences are perceived positive or not, or instrumental and affective components. These sub-constructs occurred numerous times and often in combination.

Subjective Norms

Relevant indications occurred in thirty-nine statements in nineteen interviews. Explicit links to *switching intention* were found two times and three times for *actual switching*, indicating a high relevance of this predictor. Both sub-constructs,

³³ Analytical method to look for correlations between constructs.

descriptive and *injunctive norms*⁹⁴, were operationalised in the interview guide. Responses indicated that *descriptive norms* were less influential than *injunctive norms*, as many participants would not *switch*, but rather become curious or insecure and ask for reasons (indicating an *injunctive norm*) if three or more friends *switched* their FSP. Several respondents emphasised that they would not consider their friends' actions as the only reason to *switch*. Most respondents even stated that their friends' behaviour would not have any effect on their views⁹⁵ e.g.,

Interviewer: Imagine now that 3 of your friends have switched bank, are you likely to make the switch?

Interviewee: No, I think this has nothing to do with peer pressure. [Interview 6, Indian, female, mid career]

Another observation was that when participants listened to opinions of *other people* who were important to them, they stated that their personal behaviour would depend on the reasons why *other people* selected or *switched* a FSP (i.e. the reasons are the decisive element, not the mere behaviour of other people) e.g.,

Interviewer: How important are other people's opinions in switching banks?

Interviewee: For now I have no reason to switch DBS. I listen to different people though and their advice. There are people who are for it and against it. However, different people have different reasons to switch. [Interview 20, Caucasian, female, mid career]

This observation shows that the influence of *descriptive norms* could be limited because the construct's measurement may not encompass the reasons why important *other people* influence *switching*. Despite the lack of evidence, *descriptive norms* shall be applied because in the researcher's opinion, interviewers who spoke against the influence of *descriptive norms* stressed their personal independence in the decision-making process. Thus, clues for a minor role of *descriptive norms* need to be viewed with scepticism as interviewees may desire to portray themselves as independent decision-makers, considered a positive personal trait in many societies (Bharati, 1985; Triandis, 1994). *Subjective norms* will therefore be applied in the quantitative study using both sub-constructs with focus on *injunctive norms*.

⁹⁴ Significant *other people* approving vs. performing a behaviour.

⁹⁵ Indicating *descriptive norms*.

Perceived Behavioural Control

In seventeen interviews, twenty-nine responses were interpreted as relevant for *perceived behavioural control*, stating that barriers exist when *switching* FSPs. Unlike *attitude towards switching* and *subjective norms*, participants did not mention this construct in combination with *switching intention* and *actual switching* unless follow-up questions were raised. As proposed by Ajzen (2002a) *perceived behavioural control* can be separated into two different components: *self-efficacy*⁹⁶ describes an individual's perceived ability of conducting a behaviour, whereas *controllability*⁹⁷ measures the level to which his performance is believed to be in his control.⁹⁸ Almost all statements could be interpreted as indicators for sub-construct *self-efficacy*. The following statement exemplifies perceived barriers (*self-efficacy*):

Interviewer: How easy is it for you to switch a provider?

Interviewee: It's not very easy. Here the procedure is you have to use your IC to open an account and every time you have to get a token or the second factor of authentication system. To open online banking account, the procedure is troublesome. [Interview 12, Chinese, female, mid career]

Although interviews offered little evidence for sub-construct *controllability*, past research reinforces its applicability as high (e.g., Ajzen, 2002a). Thus, the researcher will use both sub-constructs in the quantitative study with priority on *self-efficacy*.

4.2.4 Exploring P&P Factors

Insights from past studies (Gerrard & Cunningham, 2004; Keaveney, 1995) provided the motivation (i) to deductively examine the possible integration of P&P factors into the new framework and (ii) to inductively explore new factors in the hope that such extensions could enhance the framework's power to explain *switching intention*. The researcher perceived factors influencing the choice of FSPs as pointers towards *switching* because when respondents elaborated on selecting a new provider, they mostly referred to *adding* a new provider, but not necessarily

⁹⁶ Individual's perceived ability to conduct a behavior (Azjen 2002).

⁹⁷ Level to which his performance is believed to be in the control of oneself (Azjen 2002).

³⁸ The literature shows different terms or definitions for PBC sub-constructs e.g., Bansal proposed facilitating conditions and self-efficacy, Armitage and Conner self-efficacy and PBC, or Ajzen (2002) self-efficacy and controllability.

terminating services with the current provider. Thus, the broadened *switching* definition allowed the researcher to probe reasons for *choosing* FSPs as reasons for *switching*, supported by the view that customers who wanted to *switch* eventually needed to choose a new provider (Manrai & Manrai, 2007).

The larger pool of statements increased the chance of new discoveries and the number of categorisations, enhancing the analysis of P&P factors. Nevertheless, the researcher acknowledges that the broadened *switching* definition limits the strength of the insights because findings about *switching* reasons may be diluted. Further, the initially broader research context of FSPs may have somewhat reduced the power of the learnings, although the majority of responses referred to RBs.

The interview analysis revealed eight categories of P&P factors, which were subdivided by inductively breaking down their composition. This move aimed at reducing potential overlaps between the factors when responses indicating reasons for *switching* were coded into these sub-categories and evaluated. Similar to previous studies e.g., Keaveney (1995), factors were ranked according to the number of respondents mentioning them.

(1) Service failure was mentioned in twenty interviews and constituted the largest category, comprised of sub-categories service quality failure (fourteen interviews), unreliability (eight) and inability to offer the right products (five) (Appendix A4.3). Research by Devlin (2001b) suggests that customer service is a more important rating criterion than price or the availability of branches in the FSP sector. Interviewee statements about unreliability were categorised into the service failure category because the researcher perceived it is a service failure if FSPs cannot fulfil a key requirement of customers, i.e. to make them feel safe about their assets. This researcher also counted statements about banks being too small into this category because the term reliability was mostly used to describe large banks and their representation of being more stable, implying the ability to offer more reliable services than smaller banks. An example for reliability:

Interviewer:What factors do you take into consideration when you choose a provider?Interviewee:Reliability is the most important one, its liquidity in the market has to be
very high, and good service. [Interview 8, Indian, female, mid career]

(2) *Inconvenience* was the second largest category (sixteen interviews) and subdivided into *unavailability* e.g., insufficient number of ATMs or branches located close to home or office (twelve), and *slow transaction time* e.g., long queues in branches or inefficient internet banking (three), similar to categorisations of Keaveney (1995) *location and operating hours, waiting for appointment* and *waiting for service*. An example for *unavailability*:

 Interviewer:
 What factors do you take into consideration when you choose a provider?

 Interviewee:
 Convenience, probably how widespread it is in Singapore. [Interview 6, Chinese, female, young professional]

Four participants, relating *inconvenience* to *service failure*, reinforced the need to clarify definitions and to break down constructs prior to or during the categorisation process. Further, respondents revealed contradicting concepts of *inconvenience*. For example, some perceived a *small number of branches* as *inconvenient*, whereas others viewed a *large number of facilities* as *inconvenient* because branches were perceived as more popular and thus, having longer queues. Another group viewed the branch's *distance to their office or home* as a factor of *inconvenience*. Only four participants did not specify *inconvenience*.

(3) The influence of *other people* was the third largest category (thirteen interviews) and sub-divided into *parents use the same provider* (four), a *person of trust works with the provider* (four) and *recommendation of family and friends* (five):

Interviewer:	Imagine now that 3 of your friends have switched their financial advisor.
	Are you likely to make the switch?
Interviewee:	I would ask them 'why?', and if I find their reasons convincing I would switch.
	[Interview 4, Malay, female, young professional]
Interviewee:	I will be very cautious and try to do some research. [Interview 12, Chinese,
	female, mid career]
Interviewer:	How large is the influence of other people on your decision, in your
	opinion?
Interviewee:	Very high. [Interview 11, Indian, female, young professional]

Three respondents used a SEPRO because their parents decided on their behalf:

Interviewer:Can you say that your first switch influenced your second switch?Interviewee:The first was out of no choice as everything was organised by my parents.
[Interview 20, Caucasian, female, mid career]

One respondent reported having a *person of trust* working in FSPs and *switching* because this person changed employer:

Interviewer:Have you ever changed your financial service provider?Interviewee:Yes; a lot of times. There is a relationship with a person. I have switched
[the] bank twice as this person moved twice from one financial institution to
another. My relationship moved with that person. I heard that other people
around me also switched for the same reasons. [Interview 9, Indian, male,
mid career]

(4) *Pricing issues* were the fourth largest category (nine interviews). The researcher sub-categorised *pricing issues* into *received interest rates* (five) and *deducted costs* (four) because FSP price competition includes both service fees and interest rates (Gerrard & Cunningham, 2004) e.g.,

Interviewer:	What factors do you take into consideration when you choose a [financial service] provider?
Interviewee:	How much money I can make with their rates - this is more important. [Interview 21, Caucasian, female, well established professional]
Interviewer: Interviewee:	Have you ever changed your financial service provider? Yes. I changed from UOB to Citibank. UOB charged me for my cheque book.
	[Interview 3, Chinese, male, young professional]

(5) Lack of trust was the fifth largest category (eight interviews) and sub-divided into lack of trust in capability (four) and lack of trust regarding ethics and moral standards (four), with the latter category including the *image* of the FSP, as indicated by one interviewee. For lack of trust a minor overlap occurred with the category service failure. However, the researcher argued that a separation should be possible as interviewees explicitly mentioned trust or trust-related terms, such as reputation and *image* in their reports. Examples of trust related accounts included:

 Interviewer:
 What would convince you to change your [financial service] provider?

 Interviewee:
 The same things that I look for in [all] service providers: ethics, reputation

 [Interview 5, Indian, male, well established professional]

Interviewer: Could you tell us about the switch?

Interviewee: I was working with the University ..., using some local bank which merged with another bank, so I did not have much confidence in that bank because

their name changed and decided not to continue putting my money there. The switch was because of this reason. *[Interview 1, Chinese, female, well established professional]*

(6) *Involuntary* factors (four interviews) referred to the selection of FSPs due to the lack of alternatives e.g., if employers transferred salaries to a particular bank or if only one bank was available under the respondent's residence status:

Interviewer: Why did you choose your current financial service provider?

Interviewee: I use DBS as it is near our place, and convenient and this was the only bank we could open an account without a green card. They allowed us with just the letter to show that we were going to receive the green card. There were one or two other banks that didn't allow us to open an account without the whole thing. [Interview 20, Caucasian, female, mid career]

(7) *Promotions* (three interviews) represented reasons for *switching* due to discounts on third party goods or services e.g., when using a bank's credit card:

Interviewer:	What is the reason for the switch?				
Interviewee:	Citibank offers a lot of credit card promotions and it can be used				
	everywhere. UOB has less and OCBC almost no promotions so I changed				
	to Citibank. [Interview 12, Chinese, female, mid career]				

(8) *Miscellaneous* factors (six interviews) encapsulated reasons that were either found only once, such as an *outstanding sales pitch, business purpose* and *religious reasons* (reference to *Islamic banking*) or could be classified as *historical reasons* (three interviews), i.e. reasons for which individuals could not remember the exact circumstances why they *switched* – or possibly did not want to share their rationales. An example for *religious reasons*:

Interviewee: We don't have Islamic banking in Singapore from what I know. If I knew about it, I would switch over as Muslims have to divide money across different channels, and have to provide money for 'zakat', in English it's like a donation of 2.5%. It is better for us as Muslims, they'll do everything for us, and they can create this amount for donation. This donation goes to Muslim organisations such as homes. I don't see this as racial category, just that the bank will channel our money in an Islamic way. [Interview 10, Malay, female, well established professional]

Despite its preliminary character, these insights support findings of Keaveney (1995). Although she termed *lack of trust* differently⁹⁹, she also identified *service failure, inconvenience, pricing issues* and *lack of trust* as the most important factors. Gerrard and Cunningham (2004) found that *service failure, inconvenience, pricing issues* are the most important ones in the RBS context with *lack of trust* probably being partly covered by other factors they introduced, such as *unacceptable behaviour* and *attitude or knowledge of staff*. Thus, *service failure, inconvenience, pricing issues* and *lack of trust* shall be integrated into the PTM. Even though not included in the categories of Keaveney (1995)¹⁰⁰, *other people* was also identified as a major factor for *switching*. This is not surprising in view of the given context. The study of C. T. Tan and Chuo (1986) about behaviour of RBS customers revealed that social factors play a key role in influencing their intentions in Singapore.

Interestingly, Gerrard and Cunningham (2004) did not include factors representing social influence, even though their study was conducted in Singapore¹⁰¹. This researcher decided that *other people* will not be integrated in the PTM because he believed that this factor was covered in most aspects by *subjective norms*: parents using the same provider being an indicator for *descriptive norms*, whereas recommendations of family and friends pointed towards *injunctive norms*. *Involuntary* factors, *promotions* and *miscellaneous* factors appeared to be less important and were discarded.

Further, the analysis of P&P factors reinforced the need to reduce semantic overlaps caused by accounts that could be allocated to multiple categories e.g., *inconvenience* attribute *transaction time* is close to *service failure* to ensure *discriminant validity* of the constructs. When designing the survey, the researcher will consider above insights to reduce the ambiguity of survey items and to enhance the measurement of constructs by covering various sub-categories.

⁹⁹ Categories: *ethical problems, competition*.

¹⁰⁰ Presumably because the study was conducted in a Western context.

¹⁰¹ A predominantly *collectivistic* context of high social influence (Hofstede, 2014a).

4.2.5 Exploring Cultural Models and Dimensions

Personal observations and past research led the researcher to believe that in the given research setting, *switching* may be affected by cultural differences. After contrasting various contemporary cultural models (cf. chapter 2) he decided to apply the cultural dimensions described in the GLOBE model (House et al., 2004).

One objective of this qualitative inquiry was to gain early insights concerning cultural dimensions by (i) testing preliminary propositions for their integration into the PTM and (ii) examining selected GLOBE dimensions regarding their relevance and operationalisation in the given context. At this stage, the researcher was primarily interested in general pointers towards the potential influence of culture, i.e. less in the applicability of specific dimensions. Thus, he opted to focus his investigation on two cultural dimensions, namely *collectivism*¹⁰² and *power distance*¹⁰³. These two dimensions should serve as proxies because many studies investigating cultural influences on behaviour e.g., Robert et al. (2000) or Y. Zhang et al. (2010), decided to limit their investigation to two of them. Further, Triandis' (1994) highlights these two dimensions of cultural influence by claiming that they are observable in all people and thus, form key differences between cultures.¹⁰⁴

Davidson et al. (1976) show that *collectivists* perceive *normative beliefs* as more important, whereas *individualists* tend to focus on their *attitudes* towards the act. Similarly, the studies of van Hooft and de Jong (2009) and Kashima, Siegal, Tanaka, and Kashima (1992) show that *collectivists* perceive *attitude* as less linked to behaviour than *individualists*. In other words, *subjective norms* appear more important for *collectivists* and *attitude* appears to play a key role for *individualists* when conducting a particular behaviour. Considering such differences, it is of interest to search for early effect indicators of *in-group collectivism* on both *attitude towards the behaviour* and *subjective norms*. Therefore, *in-group collectivism* was

¹⁰² *In-group collectivism:* degree to which individuals expresses pride, loyalty and cohesiveness in their organisation or family (House et al., 2004).

 ¹⁰³ *Power distance:* extent of society's beliefs that power should be distributed equally (House et al., 2004).

¹⁰⁴ Triandis presumably conceptualized these dimensions sufficiently similar to *in-group collectivism* and *power distance* in the GLOBE study.

investigated with the propositions P1 and P2, whereas P3 served as an additional test for the importance of *subjective norms* because, as previously mentioned, *other people* should be highly related to this construct.

- **P1:** For more *collectivistic* cultures, indications for the relevance of *subjective norms* occur more often in the context of *switching* in the financial service industry in this sample.
- **P2:** For more *individualistic* cultures, indications for the relevance of *attitude towards the behaviour* occur more often in the context of *switching* in the financial service industry in this sample.
- **P3:** For more *collectivistic* cultures, *other people* are more relevant than for individualistic cultures in the context of *switching* in the financial service industry in this sample.

According to Emerson (1962), customers perceive FSPs in a position of power because they fulfil customer needs. Thus, customers with high levels of *power distance* may perceive working processes of FSPs as beyond their own capabilities and understanding (Donthu & Yoo, 1998), which would result in higher tolerance for *service failure*. Hence, *power distance* was tested with the following proposition:

P4: Individuals from cultures with higher levels of *power distance* rate *service failure* as less important than individuals with a lower value of that dimension in this sample.

These four propositions were tested in a three step process. First, for each of the cultural dimensions, the researcher created a ranking of the ethnic groups based on the values of their cultural dimensions¹⁰⁵. Since the literature indicated that specific cultural traits continue to exist in Singapore, even after generations living in the host country (Chua, 2003; Grunsven, 1992; Sin, 2002), GLOBE scores of the countries of origin, as measured in House et al. (2004), were used as an initial approximation for the cultural dimensions of the SRP's three major ethnic groups.

¹⁰⁵ For example, for *in-group collectivism* he started with the country of the highest score (Malaysia: 5.85), followed by the middle score (India: 5.32) and ending with the lowest score (China: 5.09).

GLOBE country score ranking for in-group collectivism: (House et al., 2004)

- 1. Malaysia (5.85)
- 2. India (5.32)
- 3. China (5.09)

GLOBE country score ranking for power distance: (House et al., 2004)

- 1. China (3.10)
- 2. Malaysia (2.97)
- 3. India (2.64)

In the second step, a ranking of the ethnic groups was created for each proposition, based on the number of interview statements related to the respective construct (*attitude towards the behaviour, subjective norm, other people*¹⁰⁶ and *service failure*). In the final step, the researcher compared the rankings based on interview responses with the rankings of the GLOBE country scores. If they were not identical, the proposition was rejected (Table 4.1). A limitation of this approach was that an approximation of cultural dimensions based on the GLOBE scores of the countries of origin provided the risk of lower validity, since country scores are probably an imperfect representation of respective ethnic groups in Singapore. Then again, it avoided common method bias because influencing variables (GLOBE dimensions) and influenced variables (*attitude towards the behaviour, subjective norm, other people* and *service failure*) were measured independently (Podsakoff et al., 2003).

¹⁰⁶ Other people discarded earlier, but used here as an additional indicator for *subjective norms*.

Interv	iew data	GLOBI	E country scores	
1.	Chinese	1.	Malaysia	P1: Rejected
2.	Indians, Malays	2.	India	
		3.	PR China	
1.	Chinese	1.	Malaysia	P2: Rejected
2.	Malays	2.	India	
3.	Indians	3.	PR China	
1.	Chinese, Indians	1.	Malaysia	P3: Rejected
2.	Malays	2.	India	
		3.	PR China	
1.	Malays	1.	PR China	P4: Rejected
2.	Chinese, Indians	2.	Malaysia	
		3.	India	

Table 4.1: Contrasting interview responses with GLOBE country scores

Rejection of all propositions showed that the initial analysis did not offer the evidence for expected cultural differences, which the researcher explains as follows:

- (a) Cultural differences in the test sample appear either not as strong as anticipated e.g., due to cultural alignment in view of daily interactions between different ethnic groups, and / or the influence of policies led to new cultural elements which superseded original values used for this comparison.
- (b) The sample size was too small to draw conclusions.
- (c) Propositions were formulated too strictly because the order of the three cultures needed to be entirely correct to approve a proposition and hence, were too easily rejected.
- (d) Ethnicity or nationality are not reliable indicators of cultural dimensions. Other factors to be considered are social status, education, occupation, income, milieus, neighbourhood and others (Triandis, 1995).
- (e) GLOBE dimensions are not perfectly reliable cultural measures in themselves.

These partially exclusive scenarios provided the motivation to further explore the influence of culture and the application of GLOBE dimensions within a larger sample in the quantitative analysis that follows. Besides, in view of items (a) and (b), the research strategy was modified because GLOBE country scores were incorrectly perceived as good proxies to describe cultural differences within the SRP. Moreover, Villegas and Shah (2005) show that similar origin does not necessarily

result in the same service preferences¹⁰⁷, whereas Bock (2000) states that simplistic assumptions regarding *ethnicity* may cause biased results, particularly when different cultures influence each other (Yeganeh et al., 2009). This issue is a typical concern when investigating *ethnicity* within one country because ethnic group cultures within the population mix to some extent. This may result in difficulties to obtain significant results from ethnic group comparisons (Slater & Yani-de-Soriano, 2010) because *non-comparability* of data within samples exists when values and behaviours become mixed among (ethnic) cultures to a degree that makes it difficult to separate *emic* from *etic* values and behaviours (Sekaran, 1983).

Thus, GLOBE dimensions need to be measured directly as part of the researcher's survey to increase the validity of the model's explanatory power. As a result, this researcher may be able to create new cultural clusters, independently from an individual's association to a particular ethnic group. Instead, cultural differences may occur because of differences in demographic factors like *education* or *age* (Triandis, 1995). For example, cultures could differ less between ethnic groups, but more between generations due to Singapore's fast-paced growth. Testing culture independently from ethnic groups is supported by Kwon and Ah Keng (2004), who could not find cultural differences for consumer behaviour between Singapore's ethnic groups, reassuring the researcher to measure culture independently.

Personal observations and past research (Keaveney & Parthasarathy, 2001; S. Lee, Zufryden, & Dreze, 2003) also led the researcher to believe that *switching* is affected by demographic differences. Thus, *gender, age group* and *life-cycle stage* were used as control variables. However, the researcher abandoned the idea of integrating demographic variables into his model to maintain his research focus.

¹⁰⁷ Cuban-Spanish and Mexican-Spanish Americans displayed different service preferences although they belong to the same ethnicity.

4.2.6 Exploring selected Marketing Concepts and Constructs

The LR revealed several interesting concepts related to the field of *marketing* (cf. chapter 2.5.3). Thus, the researcher investigated their usefulness to complement the FTM by coding relevant concepts and counting the frequency of occurrences:

Variety-seeking vs. Loyalty

Van Trijp, Hoyer and Inman (1996) differentiate BB patterns along *loyalty* or *variety-seeking* (VAS). This researcher believed that *loyalty* was an outcome rather than a predictor, which would speak against its integration. Further, he perceived VAS as irrelevant to his research because experiencing financial services would not motivate the notion of continuously trying something different¹⁰⁸. Using *loyalty* and VAS as categories to analyse the interviews revealed that five participants described themselves as *loyal* to their FSPs. Particularly, members of the Malay group emphasised that they did not look for other FSPs. Eight participants, however, stated that they were *disloyal* even though they were not actively seeking alternatives because of complacency. One respondent described herself as a VAS, however, her response showed that she aimed to expand her portfolio for different future scenarios and that she was either not interested in VAS or unfamiliar with the concept or meaning of this term:

Interviewer:Do you consider yourself as a variety-seeker?Interviewee:Yes, you just want to try. [Interview 4, Malay, female, young professional]

Interviewer:Have you added on new banks?Interviewee:Yes, I thought I'll just try. I thought that I've been with a certain bank for a
while, and since I've now started working, I thought I should save my money
in another bank as well. There's not much difference right now, but maybe
I'll see a difference in the long run.
[Interview 4, Malay, female, young professional]

Since VAS did not occur among responses, *loyalty* was the only variable in the group of *consumer profiling* concepts. Thus, *consumer profiling* was not perceived as useful because the only relevant construct, *loyalty*, is (a) conceptually similar to *switching intention*, (b) is usually relevant for types of behaviour that are of low

¹⁰⁸ For example, having several credit cards is used to extend personal credit lines, rather than for *variety-seeking* reasons.

involvement (Van Trijp, Hoyer and Inman, 1996) and (c) is used mostly in the context of probing product brands e.g., candy bars (Holland, 1984), not RBS brands.

Buying Behaviour Types

High involvement BB is driven by in-depth cognitive considerations that the customer is aware of (Molesworth & Suortti, 2002). Analysis of the narratives in this study revealed that FSP switching needs to be viewed as a high involvement scenario because all participants aimed to justify their choices and sought information before engaging with a new provider e.g.,

Interviewer:

Why did you choose these providers?

Interviewee: The type of accounts they offer and the products they offer; for example, for the normal savings account, Citibank offers step-up which is "interest over interest", which is not found in normal saving accounts. This is an innovative product and gives higher returns, although it is not a lot, but I will still go for that. [Interview 3, Chinese, male, young professional]

Since no evidence for low involvement was found, switching in the given context should be perceived as a complex behaviour with high cognitive involvement rather than a recurring or automated behaviour because most participants had not switched more than one to two times and only three participants added more than two SEPROs¹⁰⁹. Notwithstanding its limitations, this study suggests that BB types are unlikely to serve as a variable for the PTM because only a constant value (high involvement) of that variable was identified for this research context, which does not allow tests for correlations with other constructs.

4.3 Effects of Culture on the Quantitative Research Design

SP theories were predominantly developed in Western societies. Hence, the researcher explored the effects of cultural differences on RM to enable culturally sensitive data collection (Triandis, 1999). By contrasting interview statements of Asian vs. Western participants he tried to identify pointers of cultural differences due to the methodology and subsequently implications for RM refinements. In his analysis, the researcher considered the risk of *ecological fallacy* when drawing

¹⁰⁹ Maximum four FSPs were added.

conclusions about the ethnic background of individuals on the degree of cultural dimensions present in their personalities. To mitigate such risks he based the assessment of respondents as either *collectivistic* or *individualistic* on his personal observations. Possible RM refinements for culturally sensitive survey research were tested with theoretical coding, counting and evaluating the frequency of occurrence, and the strength of the statements.

4.3.1 Unit of Analysis

In *collectivistic* societies, the individual is a component of a group with strong ties and shared values, justifying the consideration of the in-group as a potential unit of analysis (Triandis, 1995). Therefore, analysing data in more *collectivistic* populations could concentrate on *groups* instead of *individuals* (Triandis, 1994). In-groups can refer to families, clans, ethnicity or other social groups (Hui, 1988). For this study, *households* or *families* were considered as plausible units of analysis because they either make financial decisions together or one member decides for all others.

The matter was examined by reviewing interviews with three ethnic Malay family members (father, son, father's sister) and rating the strength of intra-group relations. The researcher assumed that the family ranked high in *collectivism* based on his observations. The interviews showed that the father claimed that he made all decisions for his son:

Interviewer:Are you the financial decision-maker in your household?Interviewee:Yes, I am the only. Because I am the only money maker in the family. Three
of my kids are still schooling and just one is helping me in the moment, just
started after completing his national service. [Interview 14, Malay, male,
well established professional]

Although the father was convinced about his influence on other family members, his sister did not use the same SEPRO:

 Interviewer:
 Are you the financial decision-maker in your household?

 Interviewee:
 Oh, in my household, yes, I am. [Interview 10, Malay, female, well established professional]

Hence, *household* or *family* were not perceived as meaningful units of analysis because important differences occurred within the group, pointing towards independent decision-making. Only one of 22 participants selected FSPs because of her parents. Thus, for the quantitative part, the unit of analysis will be the *individual consumer* who engages RBS for personal use. This choice is appropriate because (i) psychological constructs are tested, (ii) characteristics of individuals (e.g., *gender, age*) can be combined to create a composite picture of groups that individuals represent and (iii) conclusions about the population can be drawn (Crossman, 2013), provided other preconditions are met e.g., a randomised sample (Diekmann, 1995) or responses without major measurement error (Podsakoff et al., 2003)¹¹⁰.

4.3.2 Effects of Context Specific Judgements

Following Shweder and Bourne (1982), *collectivists* frequently consider context during decision-making processes¹¹¹. Hence, *collectivists* (House et al., 2004) should be more feature-oriented in a service context than *individualists* when *switching* FSPs, i.e. they should specify P&P factors when evaluating their experience¹¹². To test this assumption, responses to two questions¹¹³ from interviewees, rated as either *collectivistic* or *individualistic* based on the researcher's observations, were searched for indications of service context specifications about P&P factors. Statements such as *poor ability to advise the client in terms of what fits, not convenient to locate a branch* and *not very innovative* or *creative with their offerings* were coded under category *context specific evidence in judgments*. Counting and comparing the statements for *individualists* and *collectivists* revealed that *individualist* gave no evidence for context specificity must be reflected in the survey design, i.e. survey items need to be specific and pre-tested for ambiguities

¹¹⁰ For a discussion of RMs and how generalisability can be obtained cf. chapter 6.

¹¹¹ Contrasting Americans vs. Indians in evaluating other individuals' performance: **72%** of Americans evaluated a person by using the term "intelligent" whereas **50%** of Indians described someone as "intelligent in the market place", integrating the context.

¹¹² For example, instead of attributing the one worded term *inconvenience* to a certain service provider, they could state more specifically *inconvenience of branch location*.

 ¹¹³ What do you like about your current financial service provider?
 What adjectives come to your mind when you think of your current financial service provider?

because previous studies have shown that Singapore's population is predominantly *collectivistic* (Hofstede, 2014a).

4.3.3 Losing Face

Losing face explains the reluctance to reveal sensitive information, to criticise questions or to ask for further guidance (Fontes, 2008). D. Y.-F. Ho (1976) stated that face was lost when individuals, either through their actions or that of people closely related to them, fail to meet essential requirements placed upon them by virtue of the social position they occupy. *Collectivists* are usually more concerned about losing face than individualists, meaning they try to behave in the way it is expected of them in respect to their social role (Triandis, 1994) which usually imposes challenges on the research design (Kitayama & Cohen, 2007). The researcher was concerned that *collectivists* would be less inclined to admit that they did not comprehend the question, but still offer a response. Further, they may not want other people to lose face and thus, would not criticise the researcher's questions, even if they perceived them as vague (Triandis, 1994). The researcher also believed that *losing face* may increase bias due to *social desirability*. For example, when asking whether respondents found *switching* difficult, they may state it was easy because society could expect them to be capable of *switching* on their own. Thus, the researcher wanted to verify whether this issue was relevant for his data collection and how other RMs (or modifications thereof) could address it.

The search for indications of *losing face* in the transcripts focused on whether questions were criticised, not answered or not understood. Related to this matter, the interviewers encountered problems in identifying and resolving language problems because some participants had difficulties to express themselves, but did not seek clarification from the interviewers. In some cases, interviewees did not answer the question, and instead repeated the previous response, leaving the impression of not having understood the question. In fact, one *collectivist* appeared to refuse to answer a particular question:
Interviewer:What is your perception of people who switch bank?Interviewee:Never thought about that! No comment! (Interview 16, Malay, female, mid-
career)

Thus, the researcher believes that *losing face* is less of a problem in the quantitative part which applies anonymous surveys instead of face-to-face interviews. In order to address remaining concerns about *losing face* related issues, this researcher decided to pre-test his survey for cultural sensitivities and ambiguous terms and to consider the *losing face* issue when interpreting his primary data.

The qualitative study enabled the extraction of relevant concepts and constructs, improved key term definitions and created a better understanding for the research context, above all about culturally sensitive research. Limitations of the qualitative study are described in this chapter. Results will be used to develop the PTM (cf. chapter 5) and to increase the rigour of the quantitative RM (cf. chapters 6 + 7).

CHAPTER 5

DEVELOPMENT OF THE THEORETICAL MODEL AND HYPOTHESES

CHAPTER 5: DEVELOPMENT OF THE THEORETICAL MODEL AND HYPOTHESES

The qualitative study led to (i) the modification of both research context and the definition of *switching*, and provides (ii) direction for the integration of relevant constructs into the new theoretical model (PTM). The researcher takes these new insights into account, revisits the literature and formulates hypotheses for subsequent quantitative testing.¹¹⁴ The chapter ends with the design of the PTM.

5.1 Hypotheses concerning the Foundational Theoretical Model

For testing the FTM in the context of RBS *switching* in Singapore, the researcher investigates relations between TPB constructs by testing hypotheses according to the directional relationships introduced by Ajzen (1985) and partially confirmed by Bansal (1997) for a context similar to this study, i.e. RBS *switching* in Canada.

First, a favourable *attitude towards switching* should increase the intention of a customer to perform *switching* (cf. chapter 2.4.1):

H1.1 Attitude towards Switching (ATT) positively affects Switching Intention (BIS).

Second, a customer should more likely intend to *switch* when important other people *switch* RBS and / or approve of such *switching* (cf. chapter 2.4.1):

H1.2 Subjective Norms (SUN) positively affect Switching Intention (BIS).

Third, the lower the barriers to *switch*, and the more *switching* is perceived as being in the customer's own control, the more likely he / she should intend to *switch* (cf. chapter 2.4.1):

H1.3 *Perceived Behavioural Control* (PBC) positively affects *Switching Intention* (BIS).

¹¹⁴ The researcher is aware of potential differences in the constructs' operationalisation between his study vs. studies that serve as references for his hypotheses. He will not outline such differences in detail, but describes his operationalisation (cf. chapter 6), which can be used for comparisons.

Further, for this research context, favourable *subjective norms* towards *switching* should have an affirming effects on customers' *attitude towards switching* (Bansal, 1997). More precisely, the direct effect of *subjective norms* on *switching intention* (**H1.2**) should be accompanied by an indirect effect of *subjective norms* on *switching intention intention* via *attitude towards switching*, leading to the following hypotheses:

- H1.4 *Subjective Norms* (SUN) positively affect an individual's *Attitude towards Switching* (ATT).
- H1.4a *Subjective Norms* (SUN) have an indirect positive effect on *Switching Intention* (BIS), mediated by an individual's *Attitude towards Switching* (ATT). In light of the direct effect of *Subjective Norms* (SUN) on *Switching Intention* (BIS) in H1.2, this mediation is partial.

Ajzen (2001) argues that a strong correlation between *attitude towards behavior* and *subjective norms* was reported frequently. A strong correlation of the three TPB constructs can be induced by underlying or antecedent factors, or information, that equally influence all three TPB constructs, which makes factor discrimination for example between *attitude towards behaviour* and *subjective norms* problematic.¹¹⁵ Further, Ajzen (2012a) offers evidence for the existence of mediation effects between the TPB constructs e.g., *perceived behavioural control* and *attitude towards behaviour*. However, the researcher's LR does not reveal problematic relations in the context of RBS *switching*. Thus, and with model parsimony¹¹⁶ in mind, the researcher discontinues inquiries into mediation effects within TPB constructs, other than *attitude towards switching* and *subjective norms*. Further, the SEM application (cf. chapter 7) allows the ex-post identification of other effects in case they play a significant role within the model. Appendix A5.1 summarises hypotheses **H1**.

¹¹⁵ Ajzen elaborates on his website, FAQ section, to the question: "My measures of attitude, subjective norm, and perceived behavioral control correlate significantly with each other. Shouldn't these variables be independent?" Response: "Attitude (A), subjective norm (SN), and perceived behavioral control (PBC) are conceptually independent predictors of intentions. However, empirically they are usually found to be intercorrelated because the same information can influence behavioral, normative, and/or control beliefs, the theoretical antecedents of A, SN, and PBC, respectively."

¹¹⁶ Adoption of the simplest assumption in the formulation of a theory or the interpretation of data (Hair & Anderson, 2010).

5.2 Hypotheses concerning Past Switching

Past switching shall be integrated into the PTM by operationalising two subconstructs, namely *past experience* and *past frequency* of *switching*, because of their potential to increase the explained variance of *switching intention* (cf. chapter 2). Thus, the following hypotheses are formulated:

H2.1 Past Frequency (PAF) positively affects Switching Intention (BIS).

H2.2 Past Experience (PAE) positively affects Switching Intention (BIS).

A meta-analysis of different behavioural types reveals that the average explanatory power of *past behaviour* for *attitude towards the behaviour* is **12%** (Conner & Armitage, 1998). For exercising behaviour, Hagger et al. (2002, p. 20) find that *past behaviour*, operationalised as *past frequency*, shows a significant path coefficient of 0.15 on *attitude towards the behaviour*. Hence, the researcher adds this hypothesis:

H2.3 Past Frequency (PAF) positively affects Attitude towards Switching (ATT).

Since *past behaviour* shows a positive influence on *attitude towards the behaviour* and on *behavioural intentions*, the explanatory power of *attitude* for *behavioural intention* decreases in many studies after including *past behaviour*, as it explains some of their common variance (Hagger et al., 2002). This leads the researcher to conclude that the integration of *past behaviour*, measured by *past frequency*, is likely to reveal a mediated relationship, resulting in the following hypothesis:

H2.3a *Past Frequency* (PAF) has an indirect positive effect on *Switching Intention* (BIS), mediated by an individual's *Attitude towards Switching* (ATT). In light of the direct effect of *Past Frequency* (PAF) on *Switching Intention* (BIS) in H2.1, this mediation is partial.

Further, Chatzisarantis, Hagger, and Smith (2007) state that a higher occurrence of *past behaviour* acts positively on *perceived behavioural control*¹¹⁷, while Kidwell and

¹¹⁷ For physical activities.

Jewell (2008) show that *past frequency* strengthens the relationship between *perceived behavioural control* and *behavioural intention*¹¹⁸. Both effects can be explained with an individual's perception of being able to perform the behaviour with growing experience (Kidwell & Jewell, 2008). In order to test those two effects, the following hypotheses are formulated:

H2.4 Past Frequency (PAF) positively affects Perceived Behavioural Control (PBC).

H2.5 *Past Frequency* (PAF) positively moderates (strengthens) the relation between *Perceived Behavioural Control* (PBC) and *Switching Intention* (BIS).

In view of the direct effect hypothesised in **H2.4**, the researcher rationalises that the direct effect stated in **H2.1** is accompanied by an indirect effect of *past frequency* on *behavioural intention* via *perceived behavioural control*:

H2.4a *Past Frequency* (PAF) has an indirect positive effect on *Switching Intention* (BIS), mediated by an individual's *Perceived Behavioural Control* (PCB). In light of the direct effect of *Past Frequency* (PAF) on *Switching Intention* (BIS) in H2.1, this mediation is partial.

Two meta-analyses led the researcher to include his hypotheses about *past behaviour* related sub-constructs. Interpreting their constructs similarly, Conner and Armitage (1998) confirm the inclusion of hypotheses **H2.1** to **H2.4** by stating that on average, correlations between *past behaviour* and *actual behaviour*, *past behaviour* and *behaviour*, *past behaviour* and *attitude towards the behaviour*, as well as *past behaviour* and *perceived behavioural control* are the strongest. Hagger et al. (2002) come to similar conclusions in their meta-analysis concerning the integration of *past behaviour* in the context of physical activity. Appendix A5.2 illustrates a summary of hypotheses **H2**.

5.3 Hypotheses concerning P&P Factors

In his qualitative study, and supported by past research (cf. chapter 2), the researcher identified *service failure*, *inconvenience*, *pricing issues* and *lack of trust*

¹¹⁸ For acquiring credit cards.

as the most important P&P factors for the explanation of *switching intention* in the given research context. Based on previous literature about direct relationships between P&P factors and TPB constructs, the researcher develops hypotheses concerning the integration of these factors into the PTM.

Pavlou and Chai (2002) offer evidence for a direct positive influence of *trust* on *attitude towards conducting online transactions,* which the researcher interprets as support for a direct positive influence of *trust* on *attitude towards the behaviour* in the PTM¹¹⁹. Further, their study shows a direct positive relationship between *trust* and *perceived behavioural control,* which this researcher converts into a direct negative influence of *lack of trust*¹²⁰ on *perceived behavioural control* in the PTM. In accordance with these findings, the following hypotheses are formulated:

- H3.1 Lack of Trust (TRU) positively affects Attitude towards Switching (ATT).
- H3.1a There is an indirect positive effect of *Lack of Trust* (TRU) on *Switching Intention* (BIS), mediated by an individual's *Attitude towards Switching* (ATT). In light of the direct effect of *Lack of Trust* (TRU) on *Switching Intention* (BIS) in H3.3, this mediation is partial.
- H3.2 Lack of Trust (TRU) negatively affects Perceived Behavioural Control (PBC).
- H3.2a There is an indirect negative effect of *Lack of Trust* (TRU) on *Switching Intention* (BIS), mediated by an individual's *Perceived Behavioural Control* (PBC). In light of the direct effect of *Lack of Trust* (TRU) on *Switching Intention* (BIS) in H3.3, this mediation is partial.

Trust is identified as a contributing factor to explain *switching intention* (Bansal et al., 2004; Bart et al., 2005; Planing, 2011). Bansal et al. (2004) state that *not trusting* a SEPRO results in *less commitment* to stay, which could translate into an increase of *behavioural intention to switch*¹²¹ in the researcher's PTM. Further, El-Manstrly et al. (2011) show that customers who do *not trust* their SEPROs are more inclined

¹¹⁹ The researcher interprets *conducting online transactions* as an inverse proxy for *switching*, i.e. a negative influence on *online transaction behaviour* is perceived as an indicator for a positive influence on *switching intention*.

 ¹²⁰ Conceptualized as an inverse construct of *trust*, referring to a customer not trusting his FSP. Thus, a *positive* relation between *trust* and *perceived behavioural control* can be seen as an indicator for a *negative* relation between *lack of trust* and *perceived behavioural control*.

¹²¹ Implies a mediated effect via variable *commitment*. The researcher reduced complexity by not investigating this mediating variable and thus, treating this indirect effect as a direct effect.

towards *switching* (cf. chapter 2). Thus, the researcher expects to see a direct effect of *lack of trust* on *behavioural intention*, stated in the following hypothesis:

H3.3 Lack of Trust (TRU) positively affects Switching Intention (BIS).

Studies of Clemes et al. (2010) and of Khan et al. (2010) report that customers are more likely to *switch* when they meet *inconvenience* issues e.g., if bank branches and / or ATMs are inconveniently located. Hence, the next hypothesis is suggested to represent the idea that *inconvenience* may influence *behavioural intention*:

H3.4 Inconvenience (INC) positively affects Switching Intention (BIS).

Anton et al. (2007a), Bansal et al. (2004) and Burnham et al. (2003) show that problems related to *pricing* could cause customers to *switch* e.g., when fees were perceived as too high. Their findings provide the basis for the hypothesis that investigates the impact of *pricing* on *behavioural intention*:

H3.5 *Pricing Issues* (PRC) positively affect *Switching Intention* (BIS).

Previous studies show that *service failure* increases customers' intention to *switch* (Anton et al., 2007a; Gerrard & Cunningham, 2004; Keaveney, 1995; Liang et al., 2012). This researcher will therefore investigate the influence of *service failure* on *behavioural intention* by hypothesising:

H3.6 Service Failure (SEF) positively affects Switching Intention (BIS).

De Matos, Rossi, Veiga, and Vieira (2009) reveal a moderating effect of *attitude towards complaining* on the relation between *service failure* and *customer satisfaction* (cf. chapter 2) as well as between *customer satisfaction* and *complaining*. Such findings imply that *attitude towards complaining* moderate an indirect relationship between *service failure* and *complaining* because for customers with a positive *attitude towards complaining*, both effects (*service failure* on *customer satisfaction* and *customer satisfacticus* and *customer s*

Bronkhorst (1995) who reveal that customers who are more likely to *complain* are also more likely to *switch*.

Hence, the researcher infers that the rationale related to the moderating effect of *attitude towards switching* could be applicable to describe the influence of *service failure* on *behavioural intention* and finds this worth investigating, which leads to the following hypothesis:

H3.7 *Attitude towards Switching* (ATT) positively moderates (strengthens) the relation between *Service Failure* (SEF) and *Switching Intention* (BIS).

Edward et al. (2010) show significant negative moderating effects of SCO on the relation between *service quality* and *customer loyalty* for mobile SEPROs. The researcher believes that it is possible to regard *service quality* as an inverse proxy for all P&P factors in his study because such factors measure similar phenomena¹²². Further, he claims that *loyalty* can be perceived as an inverse proxy for *switching*¹²³ and, in line with Bansal (1997), SCO as an inverse proxy for *perceived behavioural control*. He also interprets insights of Edward et al. (2010) as an indicator for a potential moderating effect of *perceived behavioural control* on the relationships between all P&P factors and *switching intention*. Due to *perceived behavioural control* being an inverse proxy of *switching costs*, the moderating effect should be positive¹²⁴. Thus, the following hypotheses are added:

- H3.8 *Perceived Behavioural Control* (PBC) positively moderates (strengthens) the relation between *Pricing Issues* (PRC) and *Switching Intention* (BIS).
- H3.9 *Perceived Behavioural Control* (PBC) positively moderates (strengthens) the relation between *Service Failure* (SEF) and *Switching Intention* (BIS).
- H3.10 *Perceived Behavioural Control* (PBC) positively moderates (strengthens) the relation between *Inconvenience* (INC) and *Switching Intention* (BIS).

¹²² The researcher claims that P&P factors measure negative *service quality* aspects.

¹²³ Loyalty describes the state of a customer, not a behaviour (Gentry & Kalliny, 2008).

¹²⁴ The effect changes direction because the formerly negative effect of SCO, which describes the inability to *switch*, should turn into a positive effect when using *perceived behavioural control* (which describes the ability to *switch*).

H3.11 *Perceived Behavioural Control* (PBC) positively moderates (strengthens) the relation between *Lack of Trust* (TRU) and *Switching Intention* (BIS).

Arguably, P&P factors could have been implemented as antecedents of *attitude towards switching* instead of direct influences on *switching intention*. Originally this researcher planned to integrate P&P factors in this manner. However, after receiving advice from doctoral supervisors to reduce the number of hypotheses in order to avoid an unnecessarily complex model that is almost impossible to analyse, he dismissed some of those hypotheses. The notion of dismissing some of those hypotheses was reinforced in view of the fact that he could not identify previous literature that tested the switching incidents used in this study (*service failure, pricing problems, inconvenience*) for direct effects on *attitude towards switching*. He found that previous literature has integrated *service quality* as an antecedent of *attitude towards switching* e.g., Bansal (1997). However, the researcher viewed *service quality* as distinctively different from the P&P factors, i.e. the switching incidents introduced by Gerrard and Cunningham (2004), and Keaveney (1995) (cf. chapter 2.5.1), thus not providing sufficient reason to include P&P factors as antecedents of attitude towards switching.

Appendix A5.3 provides a summary of **H3** related hypotheses.

5.4 Hypotheses concerning Cultural Dimensions

The qualitative study provides insights concerning relations between cultural dimensions and PTM constructs. Having applied insights from van Hooft and de Jong (2009); Robert et al. (2000) as well as Y. Zhang et al. (2010), the researcher focused initially on two cultural dimensions, namely *in-group collectivism* and *power distance*. His preliminary findings led him to further investigate the role of culture. Therefore, and based on the LR (cf. chapter 2.5.5), the integration of GLOBE's cultural dimensions into the PTM is now discussed.

Sideridis and Padeliadu (2001) identify a significant influence of *goal importance* on TPB constructs to explain *behavioural intention* for studying for exams. They

interpret this as evidence that *goal importance* is an overlaying cause for all TPB constructs and thus, an indirect cause of *behavioural intention*. *Goal importance* significantly influences *behavioural beliefs*¹²⁵ of *attitude towards the behaviour*¹²⁶ and *perceived behavioural control*¹²⁷ as well as the two *subjective norms* related sub-constructs *normative beliefs*¹²⁸ and *motivation to comply* (with said beliefs)¹²⁹ (Sideridis & Rodafinos, 1998). Since *goal importance* refers to how important an individual rates achieving a performance goal (Sideridis & Padeliadu, 2001), the researcher interprets this construct as a similar concept to GLOBE dimension *performance orientation*, which measures the extent to which a group encourages and rewards its members for performance and excellence (House et al., 2004).¹³⁰ The researcher therefore opts to investigate the direct effect of *performance orientation* on each of the three TPB constructs with the following hypotheses:

- H4.1 *Performance Orientation* (PER) positively affects *Attitude towards Switching* (ATT).
- H4.1a There is an indirect positive effect of *Performance Orientation* (PER) on *Switching Intention* (BIS), mediated by *Attitude towards Switching* (ATT). Since there is no hypothesis to support a direct effect of *Performance Orientation* (PER) on *Switching Intention* (BIS), this mediation is full.
- H4.2 Performance Orientation (PER) positively affects Subjective Norms (SUN).
- H4.2a There is an indirect positive effect of *Performance Orientation* (PER) on *Switching Intention* (BIS), mediated by *Subjective Norms* (SUN). Since there is no hypothesis to support a direct effect of *Performance Orientation* (PER) on *Switching Intention* (BIS), this mediation is full.
- H4.3 *Performance Orientation* (PER) positively affects *Perceived Behavioural Control* (PBC).

¹²⁵ Attitude towards behaviour is measured by behavioural beliefs about the outcome of performing the behaviour e.g., the outcome is believed to be *pleasant*. Regarding *perceived behavioural control, control beliefs* measure the belief about an individual's perception of his / her ability to perform the behaviour (Ajzen, 1991).

¹²⁶ Standardised path coefficients between 0.180 and 0.550

¹²⁷ Standardised path coefficients between 0.011 and 0.109

¹²⁸ Standardised path coefficients between 0.124 and 0.467

¹²⁹ Standardised path coefficients between 0.104 and 0.137

¹³⁰ It could be argued that the definition of Sideridis and Padeliadu (2001) relates to individuals, while House et al. (2004) refer to groups. However, when measured at individual level, both constructs are assumed to show the same effect: groups encourage individuals to perform highly, and when measured at the individual level, this encouragement will be shown in the importance an individual attributes to accomplishing a performance goal.

H4.3a There is an indirect positive effect of *Performance Orientation* (PER) on *Switching Intention* (BIS), mediated by *Perceived Behavioural Control* (PBC). Since there is no hypothesis to support a direct effect of *Performance Orientation* (PER) on *Switching Intention* (BIS), this mediation is full.

Donthu and Yoo (1998) disclose that customers with high levels of Hofstede's (1991) *uncertainty avoidance* have higher *service quality expectations*¹³¹, because they plan ahead and develop higher expectations during this process (Donthu & Yoo, 1998). According to Garvin (1984), customers rate *service quality* low if their expectations about a service are not fulfilled. Hence, customers with higher *service quality expectations* are more likely to experience *service quality* as low, or on a reversed scale, rate *service failure* as high. This insight leads the researcher to believe that measures for *service failure* in his study incorporate *service quality expectations*, i.e. *service expectations* and thus, interprets the finding of Donthu and Yoo (1998) as a pointer for a positive influence of *uncertainty avoidance* on *service failure*. Therefore, the researcher assumes that individuals with a high level of *uncertainty avoidance* evaluate *service failure*. This leads to the following hypotheses:

H4.4 Uncertainty Avoidance (UNC) positively affects Service Failure (SEF).

H4.4a There is an indirect positive effect of *Uncertainty Avoidance* (UNC) on *Switching Intention* (BIS), mediated by *Service Failure* (SEF). Since there is no hypothesis to support a direct effect of *Uncertainty Avoidance* (UNC) on *Switching Intention* (BIS), this mediation is full.

An inquiry by B. S.-C. Liu et al. (2001) regarding moderating effects of *uncertainty avoidance*¹³² for the relationship between *service quality* and the *intention to switch* banks shows that for customers ranking high in *uncertainty avoidance*, the negative effect of bad service encounters on their intention to *switch* is weak because *switching*, as a behaviour that by default carries uncertainties, is often avoided by

¹³¹ Defined as [p]retrial beliefs about a product that serve as standards or reference points against which product [or service] performance is judged (Zeithaml, Berry, & Parasuraman, 1993).

¹³² The researcher rates *uncertainty avoidance* in Hofstede (1991) as similar to the GLOBE study.

such individuals. Just like *service quality* was interpreted as a general attitude towards the SEPRO (Bansal, 1997), this researcher assumes that customer perceptions of P&P factors can be understood as a general attitude towards the SEPRO. Hence, the researcher's P&P factors are treated as equivalent to the *service quality* dimensions of Parasuraman et al. (1988)¹³³, which B. S.-C. Liu et al. (2001) apply in their study. Their findings indicate that high levels of *uncertainty avoidance* weaken the influence of P&P factors on *switching intention*. Thus, the following hypotheses are proposed:

- H4.5 Uncertainty Avoidance (UNC) negatively moderates (weakens) the relation between Service Failure (SEF) and Switching Intention (BIS).
- H4.6 Uncertainty Avoidance (UNC) negatively moderates (weakens) the relation between Inconvenience (INC) and Switching Intention (BIS).
- H4.7 Uncertainty Avoidance (UNC) negatively moderates (weakens) the relation between Pricing Issues (PRC) and Switching Intention (BIS).
- H4.8 Uncertainty Avoidance (UNC) negatively moderates (weakens) the relation between Lack of Trust (TRU) and Switching Intention (BIS).

Donthu and Yoo (1998) analyse cultural effects on *service quality expectations* and find that customers with high levels of Hofstede's (1991) *long-term orientation* dimension have lower *service quality expectations*, probably because of their tolerance to give the SEPRO time for improvement. Following the researcher's argument for formulating *uncertainty avoidance* - related hypotheses, he takes *service failure* as an inverse proxy of *service quality* and interprets Donthu and Yoo (1998) findings as an indicator for the influence of *long-term orientation* on how critically *service failure* is rated by customers. Customers with higher *service quality expectations* are more likely to perceive *service quality* as low (or *service failure* as high), which makes them more prone to *switching* (Liang et al., 2012; Parasuraman et al., 1988; Stauss & Mang, 1999).

¹³³ Competence, courtesy, credibility, security, access, communication, knowing the customer, tangibles, reliability and responsiveness.

Concluding the discussion, this researcher claims that (i) *service failure* represents the customer's final appraisal of the service and (ii) individuals perceive or evaluate *service failure* less strong when they rank high in *future orientation*, a proxy of *long-term orientation*. In short, a high level of *future orientation* should have a negative effect on *service failure*. This rationale is presented in the following hypotheses:

- H4.9 Future Orientation (FUT) negatively affects Service Failure (SEF).
- H4.9a There is an indirect negative effect of *Future Orientation* (FUT) on *Switching Intention* (BIS), mediated by *Service Failure* (SEF). Since there is no hypothesis to support a direct effect of *Future Orientation* (FUT) on *Switching Intention* (BIS), this mediation is full.

Donthu and Yoo (1998) demonstrate the potential for a negative influence of *power distance* on *service quality expectations* because customers perceive the bank as being in a position of power, which results in lower *service quality expectations*, i.e. higher tolerance for *service failure*¹³⁴. Since the researcher believes that *service quality expectations* are measured within the *service failure* construct, he assumes that customers with higher levels of *power distance*, i.e. lower *service expectations*, should report fewer *service failures*. Further, the researcher has good methodological explanations for the false rejection of this hypothesis in the qualitative study. Hence, his initial proposition of the qualitative study is reinstated in the following hypotheses:

- H4.10 Power Distance (POD) negatively affects Service Failure (SEF).
- H4.10a There is an indirect negative effect of *Power Distance* (POD) on *Switching Intention* (BIS), mediated by *Service Failure* (SEF). Since there is no hypothesis to support a direct effect of *Power Distance* (POD) on *Switching Intention* (BIS), this mediation is full.

In-group collectivism was investigated in the qualitative study because different levels of this dimension could lead to varying importance of TPB constructs. Studies of Davidson et al. (1976), Kashima et al. (1992), D. Y. Lee (2000), Pavlou and Chai (2002) and F. B. Tan et al. (2006), investigating different types of behaviour, indicate

¹³⁴ Underlying reasons outlined in chapter 4.2.5.

that for customers with high levels of *collectivism*, *subjective norms* are more vital and *attitude towards the behaviour* is less influencing for *behavioural intention*. These insights translate into the following hypotheses for this research context:

- H4.11 In-Group Collectivism (IGC) negatively moderates (weakens) the relation between Attitude towards Switching (ATT) and Switching Intention (BIS).
- H4.12 In-Group Collectivism (IGC) positively moderates (strengthens) the relation between Subjective Norms (SUN) and Switching Intention (BIS).

Weisz, Rothbaum, and Blackburn (1984) argue that *collectivists* are likely to desire the ability to adapt to the environment, whereas *individualists* aim to control the environment. This should make *perceived behavioural control* more relevant for *individualists* as they more likely engage in behaviours to change the environment than *collectivists*. Thus, the researcher claims that *in-group collectivism* weakens the *perceived behavioural control - behavioural intention* relationship:

H4.13 In-Group Collectivism (IGC) negatively moderates (weakens) the relation between Perceived Behavioural Control (PBC) and Switching Intention (BIS).

B. S.-C. Liu et al. (2001) show that customers from a more *collectivistic* culture, upon *equal service delivery* standards, have a lower propensity to *switch* and tend to experience higher *service quality* (an inverse proxy for *service failure*) than those with a more *individualistic* cultural background. One explanation why *individualists* tend to demand higher service standards than *collectivists* could be a combination of their ambition, self-responsibility beliefs and expectations from others to be efficient (Furrer et al., 2000). Hence, the researcher assumes that *collectivists switch* less frequently and evaluate *service failure* less strong than *individualists*, i.e. that a direct effect of *in-group collectivism* on *switching intention* and *service failure* exists. This gives rise to the following hypotheses:

- H4.14 In-Group Collectivism (IGC) negatively affects Switching Intention (BIS).
- H4.15 In-Group Collectivism (IGC) negatively affects Service Failure (SEF).
- H4.15a There is an indirect negative effect of *In-Group Collectivism* (IGC) on *Switching Intention* (BIS), mediated by *Service Failure* (SEF). In light of the direct effect of

In-Group Collectivism (IGC) on *Switching Intention* (BIS) in H4.16, this mediation is partial.

Cannon, Doney, Mullen, and Petersenc (2010) show that *collectivism* has a positive moderating influence on the relationship between *trust* and customers' *long-term orientation to engage with a supplier*¹³⁵. Buyer's *long-term orientation* is defined as awareness of the interdependence of the mutual benefits for both buyer and supplier (Ganesan, 1994) and results in sacrificing short-term gains in favour of long-term benefits (Ganesan, 1993). Thus, the researcher concludes that customers with higher levels of *long term orientation* have fewer intentions to *switch* their SEPRO. Put differently, *long term orientation* can be interpreted as an inverse proxy of *switching intention*. Thus, the results of Cannon et al. (2010) indicate a moderating role of *in-group collectivism* on the relationship between *lack of trust* and *switching intention*, as described in the following hypothesis:

H4.16 In-Group Collectivism (IGC) positively moderates (strengthens) the relation between Lack of Trust (TRU) and Switching Intention (BIS).

For the remaining GLOBE dimensions¹³⁶, the researcher could not find sufficient evidence to support their relevance for the PTM. Further, he perceives parsimony of the model as an important quality criterion and thus, does not want to unnecessarily increase the model's complexity. Lastly, superfluous model extensions complicate the model analysis, especially in light of rising *multicollinearity* concerns (cf. chapter 7.3.3) for large numbers of IVs.

Hypotheses of cultural dimensions being modelled as antecedents of TPB constructs in this study (H4.1, H4.2, H4.3 H4.5, H4.14) were based on findings of previous studies. None of these studies examined in the literature review for this doctoral thesis indicated good reasons to model further cultural dimensions as antecedents of TPB constructs. This should not be a surprise because TPB constructs and cultural

¹³⁵ Long-term orientation describes a behaviour, not to be confused with *future orientation* in this study, describing a general cultural trait that does not directly translate into a specific behaviour without empirical or theoretical proof to create a causal link.

¹³⁶ Assertiveness, gender egalitarism, humane orientation, societal collectivism.

dimensions do not relate to the same level of generality. TPB constructs were specifically adapted to the context of switching of retail banking services, whereas the cultural dimensions are more general because they inquire about the relationship of individuals with their society and are not limited to retail banking services. This makes theoretical reasoning to model cultural dimensions as antecedents of the TPB constructs implausible because the theory behind the cultural dimensions provides no reason to assume that cultural dimensions encompass a value judgement towards or against switching retail banking services. In particular, in the case of *in-group collectivism*, it would be implausible to propose that a *collectivistic* orientation alone could change the degree of *attitude towards switching* respectively of *subjective norms* in favour of switching.

Nonetheless, it is indeed plausible that a *collectivistic* orientation may cause individuals to act more in accordance with the views that prevail in his / her social environment, making it more likely that *subjective norms* in favour of switching will lead the individual to comply with such norms and to switch. This reasoning is expressed in the moderating effect in hypothesis H4.12, which is supported by findings of Davidson et al. (1976), Kashima et al. (1992), Pavlou and Chai (2002) and F. B. Tan et al. (2006).

The inverse reasoning applies for attitude towards switching: A collectivistic orientation leads an individual to place a lower priority on his / her own attitudes and a higher priority on the "collective", whereby the "collective" opinion is reflected in *subjective norms*, a fact that is expressed in hypotheses H4.11 and H4.12. As for *perceived behavioural control*, it could be argued that *collectivists* are likely to desire the ability to adapt to the environment, whereas *individualists* aim to control the environment (Weisz, Rothbaum, and Blackburn, 1984). In other words, *collectivists* are less likely to act simply in response to a high level of *perceived behavioural control* because adapting to their environment is more important for them than individual, self-determined action. Whereas *individualists* are more likely to act on accounts of high *perceived behavioural control* in order to influence a part of their environment (i.e. their bank). Therefore, and similar to the

earlier argument related to *attitude* and *subjective norms*, a moderation effect of cultural dimensions within the model in relation to the TPB construct *perceived behavioural control* appears more plausible.

Appendices A5.4 and A5.5 offer a summary of **H4** related hypotheses.

5.5 Summary of the Proposed Theoretical Model

Figure 5.1 illustrates a simplified PTM, in which the variable of interest is *switching intention* adapted from the TPB (Ajzen, 1985). *Attitude towards switching, subjective norms, perceived behavioural control,* the interrelation between *attitude towards switching* and *subjective norms,* as well as the predictive paths towards *switching intention* are also borrowed from the TPB.



Figure 5.1: Proposed theoretical model (simplified)

The LR shows that *past switching*, separated into sub-constructs *past experience* and *past frequency*, can contribute to the variance of *switching intention*. Further, in view of strong support in the literature and the qualitative analysis, *service failure, inconvenience, pricing issues* and *lack of trust* shall be integrated as likely model enhancers for *switching intention*. Cultural dimensions *power distance, in*-

group collectivism, performance orientation, future orientation and uncertainty avoidance, adapted from the GLOBE model shall be included either as direct influencers on other constructs within the PTM or as potential moderators that either weaken or strengthen relations between constructs. All hypotheses are subject to empirical testing (cf. chapter 7). The corresponding research design and data collection process is outlined in the following chapter 6.

CHAPTER 6

OPERATIONALISATION OF THE RESEARCH

INSTRUMENT

CHAPTER 6: OPERATIONALISATION OF THE RESEARCH INSTRUMENT

6.1 Development of the Research Instrument

For each construct in the PTM, the researcher extracted items and measurement scales used in past studies and subsequently adapted them to his context. He started with extracting 10-20 promising items per construct, of which he short-listed 5-6 items to develop a *beta* version of the survey. Following Matzler, Würtele, and Renzl (2006) and Mishra (2010), his item selection was based on the thought that items should vary to capture additional variance when measuring the construct as long as this process would not harm the construct's *validity*¹³⁷ and *reliability*. Further, the researcher chose items from a wider pool of sources which in his view offered the opportunity to identify those with the best fit for the given context.

Constructs included in the *beta* version of the survey were then tested for *reliability*. Consequently, unreliable items were replaced with new items that proved to be reliable in past studies to develop the *final* survey version (Appendix A6.1). Only three of **77** items¹³⁸ were not adapted from the literature **(SEF-05, SEF-06, PAS-04)**, but derived from the researcher's qualitative study¹³⁹. Applying Diekmann (1995), *multi-dimensional* questions¹⁴⁰ were not included because such items are often unreliable. As suggested by Diekmann (1995) and Podsakoff et al. (2003), short, simple and precise questions were favoured. If necessary, original item formulations derived from the literature were adapted to the given context. Further, items that were negatively formulated in the literature were converted to positive statements to avoid double negatives, which may confuse participants (Podsakoff et al., 2003), and subsequently reverse-scored. Lastly, the researcher took precautions not to violate the *principle of compatibility*¹⁴¹. Therefore, all survey items refer to RBS in general.

¹³⁷ Item content is consistent with the construct definition (Hair & Anderson, 2010).

¹³⁸ No. of items in the survey's *beta* version; reduced to 75 items for the *final* version.

¹³⁹ Deriving items was not a goal of the qualitative study, but frequently stated responses were used to formulate items.

¹⁴⁰ Items measuring more than one aspect.

¹⁴¹ Fulfilled when items refer to the same level of generality (Fishbein, 1967).

For both item selection and adaptation, the researcher addressed challenges of cultural sensitivity following his qualitative analysis as well as contemporary literature about c-c research. First, Asian respondents were considered as tending towards not creating a general evaluation, but an evaluation tailored to a particular aspect of a context (cf. chapter 4). For example, for the investigation of *service failure*, item: *"My RBS provider fails to deliver notices* (e.g., *billing statements) in a timely manner"* was selected because it featured a very specific aspect of the service context. Second, to avoid *losing face* issues when asking sensitive questions in one-to-one or one-to-many interactions with surveyors¹⁴², items about potentially sensitive information were avoided. When this was not possible, response categories were offered to reduce the individual character of an answer (Diekmann, 1995). Third, this researcher carefully decided for each single question to use either *etic* or *emic* terms to manage the risk of possible bias e.g., caused by *emic* terms when differences in perception of key terms occur among different ethnic groups (Kitayama & Cohen, 2007).

When determining scaling and scoring, a variety of problems and related remedies were considered to reduce potential biases caused by *common method variances* (Podsakoff et al., 2003). First, for the purpose of reducing *acquiescence bias*, answer categories were labelled *unipolar* numerical instead of *bipolar* numerical¹⁴³, whereas midpoints were labelled *neutral* whenever appropriate¹⁴⁴, following Tourangeau et al. (2000). Second, a scale length of seven points was applied for all items applying recommendations for measuring TPB constructs (Ajzen, 2012a), GLOBE dimensions (House et al., 2004) and *past behaviour* (Han & Ryu, 2012b). Several studies¹⁴⁵ measuring P&P factors use a scale length of five points. However, the researcher opted to measure P&P factors with a seven point scale to remain consistent in scaling throughout his survey. Moreover, this approach mitigated a type of *common method bias* described by Harrison, McLaughlin, and Coalter

¹⁴² For example, some respondents seemed reluctant to share information about personal income.

¹⁴³ Numbers 1-7 should reduce the impression that they can only agree or disagree with a statement compared to a numerical range from -3 to +3 (Tourangeau, Rips, & Rasinski, 2000).

¹⁴⁴ The omission of a neutral midpoint forces the respondent to make a choice, which can result in a tendency to agree, i.e. *acquiescence bias* (Tourangeau et al., 2000).

¹⁴⁵ For example, Liang et al. (2012); Matzler et al. (2006).

(1996), who report that shorter scale lengths increase the cognitive accessibility of respondents to previous answers, which makes it more likely that prior responses influence subsequent answers. To avoid that mixed endpoints confuse respondents (Francis et al., 2004), all item scale numbers started with one (1) and ended with seven (7). Appendix A6.2 summarises selected items including information about response format, reverse scoring and, if applicable, changes in item formulations¹⁴⁶.

Francis et al. (2004) recommend a combination of direct and indirect measures¹⁴⁷ for TPB constructs. Ajzen (2012a) states that using only direct measures is sufficient when the model's purpose is to explain *behavioural intentions* and not to investigate the underlying basis for the constructs. Hence, direct measures were deemed sufficient in this study. Similar to past studies (Ajzen, 1991; Chatzisarantis, Hagger, Wang, & Thøgersen-Ntoumani, 2009), measures for each construct consisted of five items. For each construct, a mix of *bipolar* items was used e.g., Likert items measuring agreement, using the two extermes *strongly disagree – strongly agree* (Francis et al., 2004), and adjective items e.g., *good – bad* (Ajzen, 1991, 2006, 2012a; Ajzen & Driver, 1992; S. Taylor & Todd, 1995). Combining those item formats should reduce the likelihood that covariance between constructs is partly caused by consistency in the item properties instead of the item's content (Tourangeau et al., 2000). Such bias may occur when similar item formats cause participants to anchor their response patterns to certain values, which systematically affect responses (Podsakoff et al., 2003).

For *switching intention* (BIS), item BIS-1 was adapted from Francis et al. (2004). Items BIS-4 and BIS-5 were adapted from the TPB survey offered by Ajzen (2012a). Items BIS-2 and BIS-3 were derived from Bansal and Taylor (2002). Bansal (1997) used the expression *at renewal date* in his items because his study investigated mortgage services that feature renewal dates, whereas this study investigates RBS in general. Hence, the researcher converted this expression into more general terminologies e.g., *If you required similar services* or *if I need similar services again*.

¹⁴⁶ A full list of shortlisted items, including those not applied, is available on request.

¹⁴⁷ Direct measures ask about overall attitudes, whereas indirect measures ask about specific behavioural beliefs and outcome evaluations (Ajzen, 2012a; Francis et al., 2004).

Attitude towards Switching (ATT) related items ATT-1 to ATT-5 were derived from Bansal (1997) as well as Bansal and Taylor (2002), indicating good *reliability*. Different types of evaluations were mixed by utilising both instrumental¹⁴⁸ (ATT-3, ATT-5) and experiential¹⁴⁹ (ATT-1, ATT-2, ATT-4) items to improve the construct's measurement (Chatzisarantis et al., 2009; Francis et al., 2004). This potential for improvement was also indicated in the qualitative study, where both types were mentioned by participants. All *attitude* related items were formulated in conditional form ("would be" vs. "will" or "is") to apply less binding expressions, which the researcher deemed more suitable¹⁵⁰ in the cultural context.

Items **SUN-1** to **SUN-05** measured *subjective norms* **(SUN)**. **SUN-1** and **SUN-2** items were taken from Bansal (1997) and Bansal and Taylor (2002), respectively. **SUN-3**, **SUN-4** and **SUN-5** were obtained from Ajzen (2012a) and adapted to the research context. J. R. Smith et al. (2008) argue that distinguishing and applying *injunctive* and *descriptive norms* should improve the predictive power of this construct. This researcher noted that Bansal (1997) and Bansal and Taylor (2002) did not use *descriptive norms* in their studies because they were probably considered as less relevant for *switching* of RBs. This assumption could be supported with results of the researcher's qualitative study which indicated that *descriptive norms* were of minor importance in the given research context. However, in other contexts, the inclusion of *descriptive norms* significantly improved the explanatory power of the model and the prediction of intention (Povey, Conner, Sparks, James, & Shepherd, 2000). A meta-analysis showed that *descriptive norms* contributed on average **5%** to the prediction of *behavioural intention* (Rivis & Sheeran, 2003). Thus, one *descriptive norm* item was inserted in the survey **(SUN-4)**.

¹⁴⁸ Measuring if the behaviour accomplishes something e.g., *useful – worthless* (Francis et al., 2004).

 ¹⁴⁹ Measuring how it feels to execute the behaviour e.g., *pleasant – unpleasant* (Francis et al., 2004).
¹⁵⁰ Asia-based researchers suggested that applying the conditional form is a well established practice because the non-conditional could be perceived as too strong by respondents.

Perceived behavioural control (PBC) was measured by adapting four items (PBC-1, PBC-2, PBC-3, PBC-4) from Bansal (1997)¹⁵¹. Bansal's (1997) study provides almost ideal PBC items because, similar to this study, they include SCO (cf. chapter 2). PBC-5 was selected from Ajzen (2012a) and adapted to the research context. PBC was captured by two measurement components, *controllability* (PBC-1) and *self-efficacy* (PBC-2, PBC-3, PBC-4, PBC-5) because various researchers (Ajzen, 2002a, 2006; Armitage et al., 1999; Manstead & Eekelen, 1998; Sparks, Guthrie, & Shepherd, 1997; Terry & O'Leary, 1995) suggest that including both concepts enhance the TPB's predictive power. Only one item measured *controllability* because Terry and O'Leary (1995) claim that although a significant effect of *controllability* on *actual behaviour* exists, its effect on *behavioural intention* is weak.

Following studies of Chiu et al. (2005), Han and Ryu (2012b), and Ajzen (2012a), seven point Likert and adjective items were applied for the measurement of subconstructs of *past switching* (PAS). PAS-2 and PAS-3, based on a concept of Han and Ryu (2012b), were created by this researcher to inquire about *past experience* of *switching* (PAE). PAS-1 was derived from Han and Ryu (2012b) and inquired about the perceived degree of *switching*. Diekmann (1995) suggests that response categories for *past frequency* (PAF) measures should be precisely stated. Thus, PAS-4 was added and used *never - six times and more* as answer categories, following Ajzen (2012a), Bansal (1997) and Phetvaroon (2006), to measure *past frequency* of *switching*. The range from zero to six incidents was selected because the researcher found a maximum of four *switching* incidents per respondent (cf. chapter 4.2.1) and concluded that although theoretically the number could be higher, it would be unlikely in the real world.¹⁵²

Following previous studies (Clemes et al., 2010; Liang et al., 2012; Matzler et al., 2006), the researcher measured P&P factors with four to five Likert items. Items labelled **INC** measured *inconvenience*. **INC-1** was adapted from Bansal (1997). **INC-2** and **INC-3** corresponded to items introduced by Liang et al. (2012). **INC-4** was

¹⁵¹ PBC-1, PBC-2, PBC-3 are also applied in Bansal and Taylor (2002).

¹⁵² Respondents who *switch* more than six times were considered part of a group of exceptionally frequent *switchers* at the upper end of the scale. This group was expected to be very small.

tailored to this study's needs from Clemes et al. (2010), whereas INC-5 was identical to INC-4, with the only difference that it referred to automatic teller machines (ATM) instead of bank branches. PRC related items measuring *pricing issues* and were adapted from Matzler et al. (2006) who introduced different aspects that contribute to customers being satisfied with the pricing¹⁵³. Items labelled SEF measured *service failure*. SEF-1 measured *unreliability* and SEF-2 measured the *inability to provide the right product*. Both items were selected based on frequently occurring interview statements in the qualitative study to complement other aspects of *service failure* for this specific research context. Items SEF-3 and SEF-4 stemmed from Liang et al. (2012). Four items labelled TRU measured *lack of trust* and were all adapted from Bansal et al. (2004).

Items measuring cultural dimensions were derived from the original GLOBE survey (GLOBE Foundation, 2006) and listed in House et al. (2004). The number of items as well as the Likert and adjective seven point formats were identical to the original GLOBE survey. Items labelled **POD** measured *power distance*. Since the GLOBE study asked employees about their organisations, whereas this study inquires about society in general, **POD-2**'s initial response option *shared throughout the organisation – concentrated at the top*, following House et al. (2004), was replaced with *shared throughout the society – concentrated at the top*. Items labelled **UNC** measured *uncertainty avoidance*, items labelled **IGC** measured *in-group collectivism*, **FUT** labelled items measured *future orientation* and items labelled **PER** measured *performance orientation*.

Demographic items **(DEM)** were derived from the GLOBE Foundation (2006) survey as well as from studies of Bansal (1997) and Phetvaroon (2006). In total, the *beta* version of the survey contained **77** items to inquire about **14** constructs.¹⁵⁴

¹⁵³ Price fairness, price-quality ratio, price transparency and price reliability.

¹⁵⁴ Not included in this study. The final survey contained 75 items (Appendix A6.1).

6.2 Structure of the Research Instrument

Following Podsakoff et al. (2003), the survey's title page provided information about the researcher and his study, a time estimate for completing the survey (15 to 20 minutes) and a statement encouraging participants to fill in responses diligently and honestly. Detailed research goals were not disclosed because some respondents may answer questions according to their own personal theories and assumptions (Podsakoff et al., 2003). Three complementary documents were provided to participants when the survey was disseminated. One document offered explanations about how to fill in the survey, while another document provided definitions of key terms and an illustration of the researcher's *switching* definition (Appendices A6.3 and A6.4). The third document requested participants to sign a pre-approved informed consent form¹⁵⁵ to grant the researcher permission to use the collected data (Appendix A6.5).

Following Dillmann (1983) the survey was divided into sections covering different sub-topics. The beginning of each section introduced the new sub-topic so that respondents could follow topic changes (Diekmann, 1995). The survey was designed to begin with interesting and simple questions (Dillman, 1983). For this purpose, questions about P&P factors were chosen, similar to Bansal (1997). Items about *switching intention* and *cultural values*, which in the view of the researcher required the highest level of attention, were placed in the middle of the survey when the attention level of respondents reaches its peak (Diekmann, 1995). Since questions about *past switching* and *demographic characteristics* were both sensitive and easy to understand, they were raised at the end after participants gain more trust in the survey and their concentration was at the lowest point (Diekmann, 1995).

The researcher applied methodological suggestions of Podsakoff et al. (2003) to avoid *common method bias* when assorting the survey items within each section. First, *common method variance* could result from correlations due to respondents' tendency to respond in a consistent way when answering similar questions (T. J. B.

¹⁵⁵ MBS Ethics Committee.

Kline, Sulsky, & Rever-Moriyama, 2000). Thus, within most sections, items related to different constructs were mixed. Following Ajzen (2012a); Bansal (1997); Francis et al. (2004); Phetvaroon (2006), **ATT**, **SUN** and **PBC** related items were mixed in one section, whereas **BIS** - related items were placed in the subsequent section. In line with Bansal (1997), Liang et al. (2012) and the GLOBE survey (GLOBE Foundation, 2006), both the sections for P&P factors and cultural dimensions also contained mixed items of different constructs. Second, specific items could influence responses to generic items (Peterson, 2000). Therefore, each section started with more general questions and ended with more specific ones. Third, according to Podsakoff et al. (2003), another form of *common method bias* can emerge from questions which evoke emotions and thus, may influence responses. The researcher believed that only items about values and belief sets related to one's personality could trigger strong emotions and therefore placed them at the end of the survey to avoid emotional bias in subsequent questions.

The researcher aimed to minimise *method bias* by optimising the survey's design before data collection. At the end of this chapter, he will outline his use of statistical data cleaning methods to filter out bias after the data collection process. Limitations of both preventative and filter methods are discussed in chapter 9.

6.3 Data Equivalence

When conducting c-c research, one important measurement requirement is to accomplish *data equivalence*. Due to differences between what is aimed to be measured vs. what is truly measured (Hult et al., 2008), the absence of *data equivalence* reduces the validity of hypotheses tests (van de Vijver & Leung, 1997). Two sub-samples without *equivalent data* are not comparable¹⁵⁶ and may lead to wrong conclusions about the influence of cultural diversity (Slater & Yani-de-Soriano, 2010), a problem affecting most c-c studies (Hult et al., 2008). Thus, the researcher focuses on three types of *data equivalence* outlined by Slater and Yani-de-Soriano (2010). First, *functional equivalence* exists when the behaviour in two

¹⁵⁶ Data that have the same meaning, interpretation and level of accuracy, precision of measurement and reliability in all countries and cultures (Douglas & Craig, 1983).

cultures is cultivated over time for similar reasons (Slater & Yani-de-Soriano, 2010)¹⁵⁷. This researcher believes that *functional differences* are represented by P&P factors that may explain *switching intention* from a functional perspective (e.g., *switching* could be interpreted as having the function to improve a consumer's situation related to *inconvenience*). Therefore, if functional differences exist, they will be accounted for within the PTM, effectively removing the requirement for *functional equivalence*. However, the researcher claims that *functional equivalence* does not need to be addressed for PTM constructs because they do not represent functions of behaviour¹⁵⁸.

Conceptual equivalence relates to cultures having similar concepts for the semantic meaning of the word when describing a selected behaviour. LRs and the qualitative study identified dissimilar concepts concerning the meaning of *switching*¹⁵⁹, but unrelated to different ethnic groups. Moreover, the detailed definition of *switching*, based on insights gained in the qualitative study, should lead to *conceptual data equivalence* for this behaviour. *Translation equivalence* refers to issues caused by words being associated with different meanings across different languages when translating the survey (Slater & Yani-de-Soriano, 2010)¹⁶⁰. Even though surveys may be conducted in English, such issues may arise when respondents are biased by the concept of the native cultural language e.g., when Singaporean-Chinese respondents process the meaning of an English word by applying a Chinese language concept. Thus, the researcher used *etic* instead of *emic* measurement terms for the formulation of survey items, such as the expression *people who are important* instead of *friends* or *family*.

¹⁵⁷ For example, *hunting*, a critical activity for the sake of survival for native tribes in Latin America (Olson, 1991), whereas people in industrialized countries like Germany are *hunting* to maintain the balance of the ecosystem (Hütter, 2005).

¹⁵⁸ Instead he assumes that the TPB, the GLOBE model and *past behaviour* are concepts which explain behaviours regardless of their function. For example, the researcher is of the opinion that *functional equivalence* is irrelevant for the GLOBE dimensions, which may have evolved for historical or evolutionary reasons to influence cultural behaviours not necessarily being of significance in the present, and thus supposedly have an influence on behaviour in the absence of any function. A similar argument can be applied for the TPB, whose predictors seek to explain behaviour regardless of an underlying function.

¹⁵⁹ In the qualitative study some respondents perceived *reducing* (services) as *switching*, whereas others had the concept of *terminating* in mind.

¹⁶⁰ For example, *friend* is more intimate in German than in Chinese (Kitayama & Cohen, 2007).

6.4 Pre-Tests

Prior to full operationalisation, the survey was tested in a five step process to assess the psychometric properties of collected data. Pre-testing included interviews, academic expert reviews, assessment by doctoral supervisors and two rounds of preliminary quantitative analyses (Appendix A6.6).

The first round of testing involved both the general examination of the survey design as well as a critical evaluation of the RI concerning cultural sensitivity. Eleven representatives of the three largest ethnic groups in Singapore (Chinese, Malay, Indian) or of other origins (permanent residents) were interviewed, following inquiries suggested by Francis et al. (2004) e.g.,

- Are any items ambiguous or difficult to answer?
- Does the questionnaire feel too repetitive?
- Does it feel too long?
- Does it feel too superficial?
- Are there any annoying features of the wording or formatting?
- Are there inconsistent responses that might indicate that changes in response endpoints are problematic for respondents who complete the questionnaire quickly?
- Are there any other comments?

Following Bagozzi and Foxall (1996), the survey was revised by two scholars¹⁶¹ to ensure content validity of the measures. Subsequently, a preliminary survey (*alpha* version) was quantitatively tested with a *convenience* sample of **115** local students¹⁶². The last page again contained above mentioned questions, derived from Francis et al. (2004), to capture pointers for the revision of the survey¹⁶³.

A detailed evaluation by the two doctoral supervisors of this study led to the *beta* version of the survey, which was quantitatively tested with another *convenience sample* of **137** local students and used to calculate *Cronbach's alpha* values (CA) and factor loadings (Appendix A6.7). Many of the constructs showed unsatisfactory

¹⁶¹ SIM University academics with expertise in Psychology and Human Resources.

¹⁶² At Singapore Management University, School of Business.

¹⁶³ Interim survey versions available on request. Final survey cf. Appendix A6.1.

results, possibly caused by the approach of measuring constructs with items from different sources. Items causing low *reliability*¹⁶⁴ and / or showing implausible factor loadings¹⁶⁵ were removed (Appendix A6.7). For constructs with insufficient *reliability*, additional items were derived from the literature to complement existing item sets. Adding more items was perceived as feasible because most respondents completed the *beta* version of the survey within **15** - **20 minutes**, i.e. within the recommended completion time suggested by the doctoral supervisors.

The next section describes constructs which required measurement modifications:

For *perceived behavioural control* **(PBC)** a CA of .72 was measured. In the hope to improve this value, item **PBC-05** which was similar to an item that was previously confirmed as reliable¹⁶⁶, was adapted from Bansal (1997) and added to the survey.

Initial *reliability* for *service failure* (SEF) was .58, which could be immediately increased by deleting SEF-03 and SEF-04. The EFA did not reveal these items as highly related with the construct¹⁶⁷. Further, five new items SEF-01 to SEF-04 and SEF-07, adapted from Liang et al. (2012), were added to create an enlarged item set sufficiently covering two different aspects of *service failure*. New items SEF-02 and SEF-03 focused on failures related to the interaction of customer and service personnel. SEF-01, SEF-04 and SEF-07 measured failures related to the core service itself, which included all critical incidents due to mistakes or other technical problems (Keaveney, 1995, p. 76).

Inconvenience **(INC)** pre-test results showed a *reliability* of .35. **INC-01** and **INC-04**, which showed very low factor loadings (< .3), were replaced with two new items from Liang et al. (2012) to complement the two previously used items from Liang et al. (2012). In the hope to increase overall construct *reliability*, two new items **INC-05** and **INC-06** were added from Clemes et al. (2010) and Mishra (2010).

¹⁶⁴ CA < .7 (Hair & Anderson, 2010).

¹⁶⁵ Items that load on a factor that doesn't represent the item's corresponding construct.

¹⁶⁶ Judging by Bansal's (1997) CA values of .77 and .82 for the two PBC sub-constructs.

¹⁶⁷ Items not loading on a common factor with other SEF items.

CA for *pricing issues* (**PRC**) was .64. Item **PRC-01**¹⁶⁸ proved to be weak (factor loading < .3). The researcher believed that this was possibly caused by the ideological judgement contained in the probably multi-dimensional item, which may have provoked participants to take a stand on purchasing power distribution of individuals in their society in addition to the assessment of RBS attributes.¹⁶⁹ It was replaced by a new item for *price fairness* (new **PRC-02**) from Matzler et al. (2006).

CAs of GLOBE dimensions ranged between .33 and .46, i.e. lower than in the original GLOBE study (Appendix A6.7), although all item sets in the survey were applied without modifications (except **POD-02**). In another LR the researcher identified the following possible rationales to explain the low *reliability* of the GLOBE constructs:

- 1. Response behaviour of Asian participants is less consistent due to the fact that more context dependent judgements can lead to different answers (Triandis, 1999).
- 2. GLOBE items not sufficiently adjusted to the specific cultural context of Singapore.
- 3. Motivation or attention of participants was lower than expected (Wolf & Best, 2010).
- 4. Unknown sample characteristics.
- 5. CA vary highly in small samples (Bonett, 2002; Yurduguel, 2008)

The researcher offers a preliminary assessment of these rationales, but will draw final conclusions later (cf. chapter 9.3.2). Rationales 1 and 2 are improbable explanations because the effect of culture on GLOBE items' response behaviour should be non-significant, as evidenced in the GLOBE study after controlling responses for cultural effects¹⁷⁰ (House et al., 2004). Rationale 3 appears possible since students may have been exhausted and / or insufficiently motivated to conduct the survey diligently¹⁷¹. Rationale 4 refers to sample disparity¹⁷² which may have caused differences in comprehending the items. However, for student

¹⁶⁸ Terms and conditions are affordable for everyone, independently of income (*Agree – Disagree*).

¹⁶⁹ Survey item could be interpreted as referring to the ideology of the equality of income distribution: "Terms and conditions are affordable for everyone". According to Diekmann (1995) such strong valued and debated expressions as ideological judgements can trigger responses in strongly in one or the other direction, and should be avoided.

¹⁷⁰ Referring to House et al. (2004), statistical methods are applied to compare raw response data with response data that take cultural effects into account. The measured difference was very low.

¹⁷¹ Survey conducted after 18:00 hrs.

¹⁷² Original GLOBE study: middle managers. Pre-tests in this study: undergraduate students.

samples, educational differences should not suffice to explain lower CA. In fact, students' knowledge should be closer to the academic environment and RM than that of middle managers, providing a better understanding of survey questions. Thus, rationale 4 is an improbable explanation, but cannot be dismissed. Rationale 5 is possible but unlikely because all CA for the GLOBE dimensions are low, while other constructs are reliable (e.g., *switching intention* with a value of .89; Appendix A6.7), suggesting that the issue lies within the constructs rather than the sample.

Since no solid explanation could be found, this researcher hoped that after obtaining a larger sample with a more controlled collection strategy in the final survey, a better *reliability*, or at least a result that excludes rationales 4 and 5 could be achieved. Further, the researcher considered improving GLOBE measures by adding or replacing items based on his assumptions about psychometric properties.

The *reliability* of *in-group collectivism* (IGC) was .44. Two items (initially labelled IGC-02, renamed IGC-05; initially labelled IGC-04, renamed IGC-06) turned out to be uncorrelated to the other two items (initially labelled IGC-01, renamed IGC-04; initially labelled IGC-03, renamed IGC-01). Two items (new IGC-02; new IGC-03) were added in the hope to compensate for the missing correlation¹⁷³.

The *reliability* of the *performance orientation* (PER) scale was .44. Subsequently, two new items PER-03 and PER-04 were added to compensate for initial items PER-03 and PER-04, both displaying low factor loadings (< .3). New item PER-03 was adapted from Diehl, Terlutter, and Mueller (2008) with minor modification, whereas new item PER-04 was derived from questions about organisational values in House et al. (2004). The researcher perceived both items as good matches with items PER-01 and PER-02. Initially PER-03 and PER-04 labelled items were not dismissed, but

¹⁷³ Items stemmed from the GLOBE Foundation (2006) survey related to organisational values. This researcher argues that applying modified items is possible because organisational norms and values can be seen as an isomorphism of more general norms and values in modern societies (Meyer & Rowan, 1977). In other words, general norms and values of the society exist in smaller organisational entities e.g., companies. The GLOBE study measures norms and values within companies in which participants work and thus, uses *in this organisation* in their survey items. Since this researcher does not measure values and norms within a specific firm, he uses the more general term *in organisations* to generalise.

relabelled to **PER-05** and **PER-06** because the researcher perceived them as a good match for the newly added items.

The CA for *power distance* (POD) was very low (.33). Thus, new items POD-04 and POD-05 were added to the survey, both taken from the societal value item sets of the GLOBE study (House et al., 2004). The initially POD-02 labelled item was deleted because it was loading on *past behaviour* (PAS) and *future orientation* (FUT), but not on POD (< .30), which would corrupt the model's discriminant validity.

To improve the *reliability* of .36 for *uncertainty avoidance* **(UNC)**, initially **UNC-02** labelled item was substituted with new item **UNC-01**, taken from a set of questions about organisational values in the GLOBE study (House et al., 2004). **UNC-06** was derived from Furrer et al. (2000) who had adapted the item from Hofstede (1991). However, Hofstede's and GLOBE's **UNC** construct differ (Venaik & Brewer, 2008). Although much care was taken to retain content validity within the construct, this specific combination of items was not tested to the best knowledge of this researcher. Consequently, the construct may not pass statistical validity tests when analysing data from the final survey (cf. chapter 7). Thus, the **UNC** measurement needs to be rated as a novel approach which is yet to be tested.

The *reliability* of *future orientation* (FUT) was .42. Initially FUT-04 labelled item was subsequently deleted in view of its low factor loading (< .30), which increased the CA to .56. The new item FUT-01 was taken from item sets for societal practices of House et al. (2004), with *is* being converted to *should be* to obtain the format of societal values. Based on Hofstede (1991) and adapted from Furrer et al. (2000), new item FUT-02 was added because the researcher believed that it complemented other FUT-related items. Similar to UNC, the FUT measurement is to be rated as a novel approach which is yet to be tested.

For *past switching* (PAS), the *reliability* was .46. Thus, initially PAS-02 and PAS-03 labelled items were erased because they appeared to measure *past experience* with the FSP instead of *past experience* with *switching*, which this researcher intends to

measure. Thus, the researcher generated the two new items **PAS-01** and **PAS-02** for *past experience*, based on a conceptualization outlined in Sommer (2011).

Two demographic items (**DEM-20**, **DEM-21**) and two new items were brought forward to the first survey page to create a set of screening questions (**SCR-01** to **SCR-04**) to decide upfront whether respondents belong to the target population.¹⁷⁴

The pre-tests led to the final survey version. The researcher assumed that by using items that were widely approved in the literature, measures of the final survey should achieve higher *reliability*. For his statistical analysis, he benchmarked the *reliability* of newly assembled item sets against the *reliability* of item sets in their respective original studies.¹⁷⁵ Survey proof-reading by another experienced academic¹⁷⁶ completed the pre-testing of the survey.

6.5 Sampling Strategy

The researcher analysed a sample with diverse demographic and cultural characteristics and of sufficiently large¹⁷⁷ sample size to draw conclusions about the target population. Thus, he selected the most efficient sampling strategy to test the PTM within the given constraints of this study. High variation within constructs should provide a better starting point for testing hypotheses about the influence of the constructs within the PTM. Since the measurement of culture in this study is based on cultural dimensions instead of demographic characteristics (e.g., *ethnicity* or *nationality*), the researcher aimed for a heterogeneous sample. This should provide for a high amount of cultural variety, since cultural dimensions vary with different demographic factors¹⁷⁸ (Triandis, 1995). A *convenience* sample limited to students is often chosen for c-c research (Liefeld, 1993), but was rated as inappropriate for the given context because it would not be sufficiently

¹⁷⁴ SRP members aged 19-55, living in Singapore for at least 3 years to have sufficient local RBS experience.

 ¹⁷⁵ Final CA values are reported along with the final sample analysis (cf. chapter 7.9.2). Appendix A6.8 compares CA values of the final survey vs. reference studies.

¹⁷⁶ SIM University academic with legal and editorial expertise.

¹⁷⁷ Rationalized later in this section.

¹⁷⁸ For example, *collectivism* varies with *age*.

heterogeneous. Moreover, applying a student sample could lead to biased and nonrepresentative outcomes (Liefeld, 1993), threatening the external validity of results.

A high degree of both heterogeneity and external validity could be achieved either by *quota* or *probability* sampling strategies (Diekmann, 1995). Strictly controlled *probability* sampling leads to highly representative results (Bello, Leung, Radebaugh, Tung, & van Witteloostuijn, 2009). However, this sampling approach would be resource consuming and unnecessary because the main research goal of this study is not to draw conclusions about the population, but to test correlation hypotheses (Diekmann, 1995). Nonetheless, drawing conclusions about the SRP remains a desirable research objective and requires a *representative* or *quasirepresentative* sample. The researcher opted for *quota* sampling as the most efficient strategy, whereby the quota was aligned with the distribution of particular demographic characteristics of the SRP. This *non-probability* sampling may achieve a high degree of *representativity*¹⁷⁹ by reproducing the demographic structures of the target population based on census data (Gorard, 2003). Webster (1966) supports this move stating that *quota* samples in c-c research are comparable with *probability* samples if both samples have the same degree of *reliability*.

The researcher aligned his *quota* sample as closely as possible with the demographic distribution of the target population along the three demographic characteristics *ethnicity, gender,* and *age group* (Appendix A6; Figure A6.11). By implementing a *quota* sampling strategy, the researcher assumed that the distribution of the demographic variables of the SRP¹⁸⁰ was similar to the distribution of the target population.

An appropriate sample size for the purpose of developing and testing a structural equation model (SEM) is pegged by Hair and Anderson (2010) at a minimum of five times the number of analysed variables. In this study, the target sample was estimated to be at least 75 x 5 = **375** respondents when demographic variables are

¹⁷⁹ Degree to which the relative size of groups in the sample is identical to their relative size in the actual population (Hair & Anderson, 2010).

¹⁸⁰ Singapore Department of Statistics.
not analysed in the model (cf. chapter 5.5). Further, this researcher aimed to establish a sample that allowed for comparisons between sub-groups of different variable characteristics¹⁸¹. Concerning SEM, this meant that, strictly speaking, each of the analysed sub-groups would have to contain a minimum of **375** respondents. Such a requirement would quickly lead to excessively large sample sizes¹⁸². Thus, a minimum of **30** cases per sub-group¹⁸³ was considered as efficient¹⁸⁴ for *quota* sampling purposes because the improvement of accuracy would slow drastically when adding more respondents¹⁸⁵. The resulting loss of accuracy is compensated when particular sub-group comparisons are limited to selected parts of the framework, such as single constructs or items. For example, during moderation analysis the sample was split into a maximum of two groups (cf. chapter 7.11.5). After splitting the sample into three age groups (Appendix A4.1), the smallest sub-group (Indians aged 20–29)¹⁸⁶ would represent **2.3%** of the SRP (Singstat, 2012, p. 29), equivalent to a representative sample size of at least **1,300** respondents¹⁸⁷.

For acquiring a minimum sub-group sample size of high quality, L. Cohen, Manion, and Morrison (2007) recommend to double the number of disseminated surveys to compensate for incomplete surveys and non-responses. The researcher applied recommendations from Diekmann (1995) and Dillman (1983) regarding the research setting (cf. chapter 6.6.), which should increase the rate of high quality surveys when collecting the survey. Therefore, he handed out **1,800** instead of **2,600**

¹⁸¹ For example, for the purpose of moderation analysis (cf. chapter 7.11.5).

¹⁸² A comparison between the three major ethnic groups would require a minimum sample size of 375 cases for the smallest of these groups (Indians). With this group representing 9.8% of the population (Table 5.1), the full sample size would grow to a minimum of 3,827 cases. If *age* was added as a grouping variable, even if reduced to a three-category variable, the smallest sub-group (Indians aged 20-29) would shrink to 2.3% of the total population, requiring a sample size of 16,304 – both sample sizes are larger than this researcher can possibly obtain.

¹⁸³ Respondents of the same *ethnicity* within a particular age group.

¹⁸⁴ At this stage the researcher aimed to conduct a sub-group analysis, however at later stage, he dismissed this option because it would have made the PTM unnecessarily complex, and was deemed as out of scope for this project.

¹⁸⁵ For example, doubling test accuracy for a group of 30 respondents, the number of respondents must be raised to 100 respondents, i.e. tripling the effort (Gravetter & Forzano, 2006).

 ¹⁸⁶ As indicated earlier, *gender* and *age* were considered as control variables at this stage. In chapter
 7 this researcher decided not to include these variables for efficiency reasons because it would make the model, which features other control variables, unnecessarily complicated for testing.

¹⁸⁷ 30 cases / 0.023 = 1,300. Makes comparisons of up to three equally sized groups with more than 375 cases a viable option in SEM. Relevant when testing moderation effects (cf. chapter 7.11.5).

surveys. In case some sub-groups would turn out to be under-represented, one subsequent round of data collection should be included as part of the sampling strategy (Trochim, 2006). The target number of **1,300** quality responses, which was considerably higher than responses collected in past studies¹⁸⁸ that investigated *switching*, was perceived as both reasonable and feasible for his study. Regarding the implementation of *quota* sampling, respondents were selected by *convenience* until their demographic target quota was fulfilled.

6.6 Data Collection Setting

When respondents filled the survey, interviewers were present to clarify questions and to increase the probability that questions were answered in a diligent way (Diekmann, 1995). Face-to-face communication was either one-to-one or one-tomany. The researcher did not interact with respondents to avoid unnecessary pressure on respondents. Instead, he engaged research assistants¹⁸⁹ whom he trained prior to operationalising the survey in the field. Most surveying activities took place at locations convenient for respondents to increase the chance of [voluntary] participation (Dillman, 1983). Collecting data in public enclaves of high ethnic concentration¹⁹⁰ was only performed if research assistants were unable to reach the target quota for selected ethnic groups, because this may cause bias due to over-representation of participants from specific areas¹⁹¹ (Diekmann, 1995).

6.7 Operationalisation

The first round of data collection took place between January and March 2013. Data collection over a longer period reduces the risk of bias as compared to data collection within a short period (Ghauri & Gronhaug, 2005), probably due to historical events that may influence results (Diekmann, 1995) e.g., banking scandals. For the prevention of data imperils, research assistants attended a compulsory one-

¹⁸⁸ For example: 511 (Hagger et al., 2006) or 371 (Bansal, 1997).

¹⁸⁹ Primarily undergraduate students from the Singapore Management University.

¹⁹⁰ Singapore examples: Little India, China Town, Kampong Clam.

¹⁹¹ For example, if residents of a certain area state that they encountered *service failures* with their bank because only one RB branch exists which provides low service quality.

day workshop, conducted by the researcher and a professional market researcher, to discuss best practices for conducting surveys with voluntary participation derived from Diekmann (1995), Tourangeau et al. (2000), Podsakoff et al. (2003) and Groves et al. (2004). In addition, prescribed reporting and survey submission processes were clarified. The workshop specifically emphasised data quality and *representativity* of the sample as key success factors for this study. Fulfilling the demographic distribution quota was made easier by forming culturally diverse¹⁹² groups of 4-5 research assistants. If needed, they were tasked to seek ad-hoc clarifications from the researcher throughout the collection period using email, telephone or meetings.

The researcher's intensive guidance for the research assistants and their physical presence while respondents completed the voluntary survey played an important role in achieving a high response rate (Diekmann, 1995). However, low data quality and forged survey responses are a risk for any empirical study (Dorroch, 1994). Thus, the researcher applied a variety of both computerised and non-computerised control mechanisms, including control calls to respondents, to mitigate such risks. The implementation of such mechanisms was communicated to research assistants in the workshop and frequently repeated during the data collection process. Control calls were progressively conducted over a period of four weeks and limited to **15%** of surveys collected¹⁹³, which the researcher deemed as sufficient. If control calls encountered suspicious responses, he called for a meeting with research assistants to discuss follow-up actions.

In total **1,744** surveys were collected. Following Lück (2011) and Pötschke (2010), different testing routines for identifying and handling low quality data were implemented. Routines included initial data cleaning (elimination of surveys by research assistants themselves¹⁹⁴) as well as tests for mistakes and outliers (to detect inadmissible or unrealistic answers), contradictory answering patterns,

¹⁹² Could mitigate effects of the research assistance's ethnocentricity bias (Triandis, 1994), which becomes important, when they are involved in the subsequent data cleaning process.

¹⁹³ Control calls normally range from 5% to 40% (Diekmann, 1995).

⁹⁴ Examples of context-specific observations: respondents were distracted, not interested or had poor English skills. Respondents failing the screening criteria were immediately excluded.

biased response patterns and duplicate cases. Lastly, a review meeting with each group of research assistants was conducted, whereby all doubtful cases¹⁹⁵ were reviewed. Such meetings provided the researcher with complementary insights: research assistants often recalled the situation at the time of data collection of a specific survey and thus, were better equipped to assess data integrity. This strategy is confirmed by Sana and Weinreb (2008), who show that the most accurate data editing decisions are made by fieldworkers with actual experience at the survey sites, whereas purely office-based data editing strategies often lead to misguided assumptions. Appendix A6.9 describes the testing routines in detail. If doubts about data integrity persisted, the researcher discarded related surveys. After dismissal of low quality or suspicious surveys, a total of **1,508** surveys remained in the sample.

Since ethnic Malays and higher age groups were under-represented in the **1,508** surveys (Appendix A6.10), more data had to be collected. Therefore, over a period of four weeks in May 2013, the researcher assigned and trained another group of research assistants, integrating his learnings from the first round of data collection into his instructions. Based on available resources and demographic requirements, the researcher targeted approximately **400** additional high quality surveys, applying a prescribed demographic distribution (Appendix A6.10, Table A6.10.1), which addressed the under-represented groups of the first round's sample (details in the following section). This approach generated an additional sub-sample of **557** surveys, resulting in a grand total of **2,301** collected surveys¹⁹⁶. After applying data cleaning methods identical to the ones used for the first sub-sample, **456** newly collected cases and a total of **1,964** surveys remained in the cleaned sample.

6.8 Demographic Structure of the Sample

Due to over-representation of Chinese Male respondents in the age group 25–29 in the initial clean sample with **1,508** surveys (constituting **13%** instead of the targeted **3%** of the total sample size) as well as under-representation of the age group 55+

¹⁹⁵ For example, due to unsuccessful control calls, suspected errors, dishonest answers or similar cases of questionable data discovered through computerized tests.

¹⁹⁶ Total number of collected surveys before data cleaning: 1,744 + 557 surveys.

(constituting **12%** instead of the targeted **30%** of the total sample size), an adjustment of the sample with perfect quota and full utilisation of already collected responses would have required overly large amounts of new respondents in the second round, with most respondents being in the age group 55+. Thus, the aim of the second round of data collection was narrowed in two ways: first, age group 55+ was removed from the target population, because of the large adjustments that would have been necessary were considered uneconomical¹⁹⁷. Subsequently, the data collection focused on the age groups 20–54. Second, the researcher decided to concentrate on under-represented groups, i.e. leaving over-represented groups unattended. This was considered an efficient trade-off between improving overall *representativity* and keeping requirements for additional data at feasible levels.

These two considerations narrowed the sample size within this newly defined target age group to a total of **1,764** surveys after two rounds of data collection. Nevertheless, this sample still contained a number of over-represented sub-groups. The researcher considered the remaining over-representation as acceptable because all deviations between his sample and the target population were less than 2%¹⁹⁸ with the exception of Chinese Males aged 25–29 (8.0% over-represented), Chinese Females aged 25–29 (3.2% over-represented) and Chinese Females aged 20–24 (3.2% over-represented). Appendix A6.10, Tables A6.10.2 – A6.10.6 show the underlying calculations for the two different sample sizes (N = **1,508** and N = **1,764**).

A perfectly adjusted sample could have been achieved through weighting¹⁹⁹ or random elimination of over-sampled sub-groups. A sample that is reduced in this way would have a perfect respondent distribution and would contain **1,422** surveys. Despite this more representative sample being much larger than the targeted minimum sample of **1,300** surveys, the sample size was kept at **1,764** surveys for

¹⁹⁷ A large number of respondents is required to achieve small improvements in *representativity*. Further, research assistants indicated language barriers for the older generations.

¹⁹⁸ In most cases < 1%.

¹⁹⁹ The researcher would be able to retain over-sampled sub-groups and to keep the probability of statistical type I error at a minimum, while *representativeness* would be maintained. The weighting strategy was not implemented because it limits the scope of the data analysis and complicates the interpretation.

two reasons: First, aforementioned analysis methods e.g., group comparisons or yet unknown data properties such as deviations from multivariate normality, can lead to further increases in the optimum sample size (Hair & Anderson, 2010). Second, missing data concerns could require additional adjustments to the sample during the descriptive stage of the data analysis, including further elimination of surveys and the subsequent possibility of further changes in the demographic make-up. Both points will be discussed in chapter 7.

The researcher therefore decided to forego further adjustments and to continue with a sample of **1,764** surveys. After the required demographic structure of the sample is established, this researcher will continue with his quantitative study, using regression analysis (RA) and structural equation modelling (SEM).

CHAPTER 7

QUANTITATIVE STUDY

CHAPTER 7: QUANTITATIVE STUDY

The focus of this chapter is to test the hypotheses (cf. chapter 5.5) and to provide empirical support for the proposed theoretical model (PTM). To this end, the established sample (cf. chapter 6.8) will be refined and tested, using both regression analysis (RA) and structural equation modelling (SEM). The researcher begins with a discussion of his choices concerning SEM methods and analytical tools (cf. chapters 7.1 and 7.2). In the next step, he uses SEM to conduct SEM specific data screening to establish and describe the final sample (cf. chapter 7.3), which is then subjected to theoretical testing.

Hypothesis testing is conducted with two separate analysis methods because the researcher aims to make the results of his study comparable to a wide range of past and future studies.²⁰⁰ First, the PTM is tested using multiple RA in chapter 7.4. Chapter 7.5 provides an overview of the steps that comprise the SEM analysis, while chapters 7.6 to 7.10 put these steps into action. Chapter 7.11 summarises RA and SEM results. Two models²⁰¹ will be tested in the SEM section, the first of which consists of the FTM (Model A) and the second model (Model B) which represents the full set of hypotheses developed by this researcher (barring the ones that cannot be tested due to measurement issues, cf. chapters 7.3 and 7.9). This way, the TPB's applicability to the context of this study is assessed independently from this researcher's PTM.

²⁰⁰ Hypotheses (cf. chapter 5) imply a number of direct and indirect effects, which make methods of *multivariate data analysis* necessary. For this study, the researcher selects hierarchical RA as a supplementary technique and SEM as the primary technique. RA is chosen because RA, in different forms, is widely used and especially useful in establishing comparisons of the explanatory power across research studies (Ajzen, 2012a; L. Cohen et al., 2007; Field, 2005; Hair & Anderson, 2010; Hunsley & Meyer, 2003). SEM is chosen as the primary technique because in the field of *social sciences*, and particularly in applications concerning the TPB, SEM is increasingly accepted as the superior form of *multivariate data analysis* (Bansal, 1997; Blankson et al., 2007; Hagger et al., 2006; Lippke, Nigg, & Maddock, 2007; Werner & Schermelleh-Engel, 2009).

²⁰¹ Hypotheses included in the FTM respectively the PTM (cf. chapter 5.2) are not tested together, but divided into several statistical tests. Because the term "model" is often used in software outputs to describe the results of a single test, it can either refer to such tests or to the overall framework's taxonomy of this study. In the former case, test results are discussed immediately, and in the latter case, the previously introduced terminology (cf. chapter 1.7) is used.

7.1 Theoretical and Methodological Background

7.1.1 SEM Notation and Terminology

Prior to entering into the detailed discussion, the researcher briefly provides his understanding of SEM specific key terms which he will apply throughout this chapter. This is deemed necessary to fully follow this researcher's methodological decisions due to a lack of generally accepted standards across research practices and analytical tools (R. B. Kline, 2005).

7.1.1.1 Structural and Measurement Model

An SEM analysis consists of a *measurement* model and a *structural* model. The *measurement* model specifies relationships between latent variables (*LVs*) and observed variables (*OVs*). The *structural* model specifies relationships between *LVs* and is therefore conceptually identical to a path model in a *path analysis*, the only difference being the latent nature of the variables in SEM and the use of related methods (e.g., estimation of *measurement error*) (Hair & Anderson, 2010).

7.1.1.2 Latent and Observed Variables

SEM combines *confirmatory factor analysis* (CFA) and *regression-based* methods, in particular *path analysis*, to estimate relations between *LVs* and *OVs* (Legare, 2009). Variables are described as either *latent* or *observed*, depending on their role within the *measurement* model. *OVs* are directly measured²⁰² (R. B. Kline, 2005). *LVs* are not directly observable and therefore indirectly measured with the help of *OVs* that can be measured using research instruments (RIs). Thus, the researcher uses the relationships among a large set of *OVs* to derive the relationships between a smaller set of *LVs* (Field, 2005). The rationale behind the concept of *LVs* is that individuals who are characterised by a certain value of the *LV* tend to respond in a consistent way to all survey items designed to capture this *LV*. In that sense, *OVs* are reflective

²⁰² Mostly as items of a survey instrument.

indicators (Edwards & Bagozzi, 2000) of *LV*s because they are presumed to reflect theoretical *latent* constructs (Field, 2005). In this study, **BIS** is an example of a LV^{203} .

7.1.1.3 Exogenous and Endogenous Variables

Describing variables as *exogenous* or *endogenous* refers to their role within the *structural* model. *Exogenous* variables are not influenced by other variables, meaning their role is that of independent variables (*IVs*), the only difference being the SEM specific terminology. *Endogenous* variables, however, are influenced by other variables and therefore conceptually similar to dependent variables (*DVs*) (Hoyle, 1995).²⁰⁴

7.1.1.4 Graphical Notation

In accordance with the graphical user interface of the selected analytical tool (cf. chapter 7.2), *LV*s are represented by circular or oval shapes, whereas *OV*s are represented by rectangular shapes. A one-headed arrow represents a hypothesised *direct* relationship between two variables, whereas a two-headed arrow represents a *correlation*²⁰⁵ or *covariance*²⁰⁶ between two variables with no implied direction of effect.

7.1.1.5 Written Notation

The most widespread standard in SEM notation is the symbol set used in LISREL²⁰⁷ (cf. chapter 7.2). However, with its unique mixture of Greek letters and notational standards in matrix algebra, it is difficult for the unaccustomed reader to keep the different notations in mind, unless the entire notational system is memorised (R. B. Kline, 2005). Thus, this researcher will use the content derived abbreviation system

²⁰³ Other examples could be *happiness* or *motivation* (Schumacker & Lomax, 2004).

²⁰⁴ Independent / exogenous and dependent / endogenous can often be used interchangeably. However, due to the nature of structural models, endogenous variables may influence other variables, while at the same time being influenced by other variables in the same model, which complicates the use of conventional RA terminology (dependent / independent). In such cases, the SEM terminology (exogenous / endogenous) is used.

²⁰⁵ Reporting *standardised* outputs.

²⁰⁶ Reporting *unstandardised* outputs.

²⁰⁷ Linear Structural Relations, an alternative analysis tool (Jöreskog & Van Thillo, 1972).

that was introduced in earlier chapters (cf. chapters 5.1 - 5.3; 6.1) by using e.g., acronym **BIS** when referring to *LV* **BIS**, and respective acronyms **BIS-01**, **BIS-02** etc. when referring to OVs^{208} . This way, readability will be higher and the content of the variables in question will be more self-evident. When SEM parameters and estimates²⁰⁹ are discussed, the researcher foregoes the use of SEM-specific symbols and letters and instead mostly uses self-explanatory terminology offered by the selected analytical tool.²¹⁰

7.1.2 Rationales for the Application of SEM

From a *theoretical* perspective, SEM is superior to alternative methods when assessing relationships between LVs because the researcher can account for a wider variety of relationships between IVs. Specifying a structural model which enables the testing of complex structures²¹¹ allows single variables to fulfil the role of a DV and IV simultaneously, thereby eliminating the need for separate RA (Gefen, Straub, & Boudreau, 2000). Second, from a measurement perspective, the TPB includes a number of abstract psychological latent constructs that are measured with a set of OVs (Field, 2005). For such variables, SEM, specifically CFA, provides an accurate way of measurement because it uses the largest amount of information available when calculating LVs (Guarino, 2004). In contrast to alternative methods, such as multiple RA, this allows the researcher to take into account how well each survey item measures the corresponding LV, accounting for the smaller role that items of lower validity may play and for the measurement error that occurs with most latent constructs (Guarino, 2004). Consequently, SEM is statistically more accurate. In fact, a great number of past research work applied SEM to ensure the convergent and discriminant validity (cf. chapter 7.9.2) of TPB measures (Ajzen et al., 2004).

²⁰⁸ Referred to as *items* in chapter 6.

²⁰⁹ Estimated parameter values calculated by the SEM tool.

²¹⁰ Exceptions are explained within the analysis part (cf. chapters 7.5 – 7.11).

²¹¹ For example, *mediated* relationships.

Third, from a *practical* perspective, SEM requires less analytical steps²¹² because both the assessment of *latent* construct measurement and theory-driven hypotheses can be conducted simultaneously, i.e. *LVs* and *regression weights* between the *LVs* are calculated in one step. Aside from providing efficiency, this improves especially the *theoretical* part because statistical properties of the measurement, such as *item validity* and *measurement error*²¹³, can be taken into consideration at the time of analysing hypothesised relationships, which is complicated or impossible when other methods are used (R. B. Kline, 2005). Moreover, the simultaneous calculation of *measurement* and *theoretical* tests enhances the researcher's ability to calculate *model fit statistics*²¹⁴ for the entire model that takes into account as much information as possible, providing additional insights about the quality of the model as a whole.

For example, a model with highly significant relationships between variables, but high *measurement error*, will receive a bad overall *model fit* in SEM, whereas it may be considered a good model in RA because it does not account for *measurement error*. Ultimately, these *fit statistics* help in creating cut-off values (COVs) by providing a basis for contrasting the TPB and competing (extended) models (Hair & Anderson, 2010). With the notion of extending the TPB, a goal of many researchers who are unsatisfied with the explanatory power of the TPB (Armitage & Conner, 2001), *fit statistics* become a key aspect in choosing SEM as the most apt method for this study.

In short, SEM yields *theoretical* (flexibility in modifying and testing competing hypothetical structures), *methodological* (more accurate computation of *LVs*) and *practical* (integration of *measurement, theory* and *fit* testing in one procedure) advantages for this study.

²¹² For example, *summated score variables* for multiple RA become obsolete (Hair & Anderson, 2010).

²¹³ Inaccuracies of the measurement instrument inherent to most forms of *multivariate* measurement (Hair & Anderson, 2010).

²¹⁴ Cf. chapter 7.9.1.

7.1.3 Maximum-Likelihood-Estimation Method

The selected method for SEM estimation is *Maximum-Likelihood-Estimation* (MLE), the default setting in most analytical tools. It is the most widely tested, accepted and applied method, and some scholars even find that the use of other estimation techniques requires explicit justification (Hoyle, 2000). However, two concerns with MLE are commonly raised (Hair & Anderson, 2010; R. B. Kline, 2005), the first one being the required sample size to attain reliable MLEs. This necessity was discussed in chapter 6.5 and is met in view of this study's obtained sample size of **1,764** cases (cf. chapter 6.8). The final sample size is discussed in chapter 7.3 and will remain well above the minimum of **1,300**. The second concern is the assumption of *multivariate normality*, which is discussed in chapter 7.3.

7.1.4 Two-Step SEM Analysis Process

For the analysis of the PTM (cf. chapter 5.5), the researcher applies a two-step process: in step 1 (cf. chapters 7.6 – 7.9), he establishes and analyses the *measurement* model using CFA. In step 2 (cf. chapters 7.10 – 7.11.), he then includes the hypothesised relationships between LVs to test the *structural* model. He prefers this approach to the one-step approach, where both models are analysed and tested in the same process for several reasons:

First, given the PTM's complexity, selecting the two-step process makes it easier to locate the source of potential problems within the model because items and constructs²¹⁵ of insufficient *validity* and *reliability* are identified before the *structural* model is tested (R. B. Kline, 2005). Thus, the deteriorating influence of such issues on the assessment of the *structural* model is minimised. Further, the

²¹⁵ The term *construct* refers to the underlying *LV* that is presumed to account for the variance in a set of items (Hair & Anderson, 2010). Following common practice in the SEM literature, terminology is used in a context-dependent manner. The terms *construct* and *item* are generally preferred, but in the context of *measurement* model specifications and analysis, *LV* or *OV* are used instead when deemed necessary for the better understanding of an argument. Further, for *LVs / constructs*, the terms *endogenous* and *exogenous* variable are used in the context of *structural* model specifications and analysis when the causal role of a construct within the model is of importance (cf. chapter 7.1.1), whereas RA related terms *outcome / dependent* and *predictor / IV* are used when the causal structure between two or more constructs is discussed in detail.

researcher deems the chance of reducing the risk of *interpretational confounding*²¹⁶ (cf. chapter 7.11.1) through the application of the two-step-process (Anderson & Gerbing, 1988; Burt, 1973) as important. Lastly, the two-step process allows a comparison of the *measurement* and *structural* model as *nested* models²¹⁷ (Hair & Anderson, 2010).

During this assessment, hypothesised relationships in the *structural* model are rated independently from the *measurement* model on the basis of a χ^2 -difference statistic²¹⁸, providing an additional measure for establishing *model fit*, which is entirely based on the fit of the *structural* model (Anderson & Gerbing, 1988), i.e. largely independent from the quality of the *measurement* model. Thus, for the sake of maximising the precision of the analysis while making the model as simple as possible, the two-step process is the preferred testing method for this study. This preference is confirmed by the fact that the two-step process has become a widely used and generally accepted approach in SEM analysis, mainly because it facilitates the fulfilment of requirements for *model identification*²¹⁹ (Bollen, 1989).

7.2 Selection of a Relevant Analytical Software Tool

The software tool *SPSS AMOS*²²⁰ version 21 (AMOS) is selected to specify the SEM and conduct the analysis. It is noted that from a statistical standpoint, the choice of software tools is arbitrary as long as the researcher does not require functionalities that are unique to one of the tools (R. B. Kline, 2005). In recent years, software tools have become increasingly similar²²¹. Although specific *fit indices*, estimation methods, the visual presentation of output content and notational conventions

²¹⁶ Misinterpretation of effects in *structural* models. Can arise when the *measurement* model is bad, but the overall *model fit* is still good enough to prevent the researcher from searching for flaws.

²¹⁷ Models with identical variables, but increasing complexity of the relationships between variables. The more complex model always contains at least all the relationships contained in the less complex model (Hair & Anderson, 2010).

²¹⁸ Most basic statistic of *model fit* in SEM (Hair & Anderson, 2010).

²¹⁹ Also described as *two-step-rule*.

²²⁰ Analysis of Moment Structures (IBM Corp., 2012a)

²²¹ For example, both AMOS and LISREL use a point-and-click interface and allow specifying the *structural* model with a path diagram.

tend to differ, the information needed to produce results that are accepted in the scientific community can be drawn from most tools (Hair & Anderson, 2010).

In order to address concerns about the capabilities of AMOS, two of its most commonly mentioned shortcomings shall be discussed: first, all AMOS versions (at the time of writing this study) fail to include the ability to analyse data with categorical OVs, using polychoric²²² or polyserial²²³ correlations, while other software tools, especially LISREL, include sophisticated features to conduct this type of analysis (Albright & Park, 2009; B. M. Byrne, 2001, 2010; R. B. Kline, 2005). Without going into details, this shortcoming of AMOS can be perceived as a severe limitation when categorical variables (e.g., dichotomous or ordinal variables) are used in a structural model. This is, however, not relevant for this study: First, existing research shows that methods for the investigation of *continuous* variables can be used for categorical data with little concern when the data is ordinal and has more than four categories (Bentler & Chou, 1987; B. M. Byrne, 2010; Green, Akey, Fleming, Hershberger, & Marquis, 1997), which is the case for the Likert-type items used in this study (cf. chapter 6.1). Second, if the need arises to estimate the effects of categorical variables which are not ordinal and / or have less than 4 categories, alternative methods are available in AMOS, such as multi-group analysis and Bayesian estimation (Arbuckle, 2012; B. M. Byrne, 2010). Another feature that AMOS lacks in comparison to Mplus²²⁴ and LISREL is the ability to produce scaled χ^2 statistics²²⁵. This issue can be addressed in AMOS with the help of *bootstrapping* (B. M. Byrne, 2010; Hu, Bentler, & Kano, 1992; R. B. Kline, 2005; Yu, 2002), which is discussed in chapter 7.3.2.

In summary, choosing AMOS should not have any implications for the quality of results. Practical considerations are (a) a seamless integration with software tool

²²² Estimation-based correlation coefficient for *ordinal* or *dichotomous* (in this case also called *tetrachoric*) variables (Jöreskog & Sörbom, 1996).

Estimation-based correlation coefficient if one variable is *continuous* and another is *categorical* (Jöreskog & Sörbom, 1996).

²²⁴ Muthén and Muthén (2012); www.statmodel.com

²²⁵ Measure of *model fit* developed by Satorra and Bentler (1994) to deal with *n*-*n* data.

*SPSS*²²⁶ version 20 (SPSS) used for data collection and coding (cf. chapter 6.7), (b) a sophisticated graphical user interface that allows for instant visualisation of relationships between constructs, (c) widespread recognition among the academic community (Blunch, 2008; B. M. Byrne, 2010; R. B. Kline, 2005) and (d) accessibility for this researcher. Further, (e) compared to other SEM tools (e.g., Mplus or LISREL), AMOS offers built-in error checking algorithms²²⁷ that help to avoid situations where minor specification errors lead to wrong outputs. Since model specifications, especially for hypotheses stating *moderating* effects, can be a tedious and error-prone task (R. B. Kline, 2005), these algorithms support the researcher to optimise and streamline the analytical process.

7.3 SEM-specific Data Screening Methods and Sample Adjustments

In continuation of the descriptive data screening process that started with data cleaning (cf. chapter 6.7) and investigating the demographic structure of the sample (cf. chapter 6.8), the following section describes SEM-specific data screening methods. After establishing the final sample size in chapter 7.3.1, the researcher implements suggestions of McDonald and Ho (2002) to analyse his sample with regards to the assumptions of *multivariate data analysis* in general, and MLE in particular. These include assumptions of *multivariate normally distributed data* (7.3.2), the absence of *multicollinearity* (7.3.3) and *homoscedasticity* (7.3.4). Related tests and analyses of results are dependent on selected SEM analysis techniques.

7.3.1 Missing Data Handling

With only 0.9% missing answers²²⁸, the total proportion of missing data in the researcher's sample is more than ten times lower than the COV^{229} , making the

²²⁶ Statistical Product and Service Solutions (IBM Corp., 2012b).

²²⁷ Control mechanisms to identify human errors in model specifications. For example, AMOS does not allow two *endogenous* variables to be associated because this would present a misspecification (R. B. Kline, 2005). Further, AMOS notifies the user when an *endogenous* variable lacks the mandatory error term (Arbuckle, 2012).

²²⁸ 1,330 answer values in the dataset were user-defined missings (no system-missing values exist), with 1,764 x 87 = 153,468 total possible answer values (Appendix A7.1). Some studies indicate that very low missing data rates could be an indicator for fabricated survey data (Turner, Gribble, Al-Tayyib, & Chromy, 2000). The rate of missing data in those studies is judged on a per-

collected dataset acceptable for *multivariate analysis*. Although this provides an incentive to skip missing data handling, the researcher addresses this issue because most data analysis procedures are not designed for data sets with missing data (Schafer & Graham, 2002). Many studies using SEM do not provide detailed discussions about missing data handling, or resort to severe editing to (i) create an appearance of data completeness and to (ii) avoid the task of remedying missing data (Schafer & Graham, 2002). If missing data are remedied, the *list-wise deletion*²³⁰ method is implemented in most studies because it is both the simplest (Brown, 1983) and most widespread practice (Allison, 2003; Carter, 2006). Since *list-wise deletion* has been criticised with valid arguments (Allison, 2003), rationales and consequences of this researchers' choice are briefly discussed:

First, this method is consistent with common research practices (Allison, 2003; Bernaards, Belin, & Schafer, 2007; B. M. Byrne, 1995; Carter, 2006; Hair & Anderson, 2010; R. B. Kline, 2005). Second, the application of *list-wise deletion* in AMOS is more efficient than other methods²³¹ because it is quicker to apply and once the sample is established, the results of later analyses do not depend on the missing data strategy anymore (Field, 2005; Hair & Anderson, 2010). Third, as an advantage over the increasingly suggested FIML²³² procedure (Blunch, 2008; P.-W. Lei & Wu, 2012), *list-wise deletion* allows the researcher to use AMOS' full feature set, such as output of *residual covariances* and *modification indices*, which are useful in assessing various types of *validity*²³³. Fourth, the risk of losing too many cases to maintain a sample of sufficient size (Allison, 2003) is not valid for this study

interviewer basis. In this study, interviewers with unusually high response rates were invited for a discussion of the issue. It was found that most of the variation in data completeness could be attributed to differing success rates in the interviewers' ability to follow-up on missing values with their respondents or to explain the questions that could not be answered due to language issues, as this was not a native-language survey for some of the ethnically diverse participants. Further details on data verification cf. Appendix A6.9.

²²⁹ Hair and Anderson (2010) propose a maximum of 10%, i.e. 153,468 x 0.1 = 15,347 values. Beyond this benchmark, missing data have a high potential to distort results to an extent that fundamentally threatens the validity of results.

²³⁰ Removal of every case that contains a MV in any of the analysed variables (Allison, 2003).

²³¹ For example, *pair-wise deletion* or *multiple regression imputation*.

²³² Full Information Maximum Likelihood; accounts for missing data during the model estimation, eliminating the need to remedy missing data before estimation (Arbuckle, 1996).

²³³ Discussed in stage 4 of the SEM analysis process (cf. chapter 7.9).

because only **27** out of **1,453** cases²³⁴ have missing values (MVs). Hence, the size of the researcher's sample remains above the targeted **1,300** cases (cf. chapter 6.5).

The researcher believes that this gain in *methodical* flexibility outweighs the minor loss in *accuracy* through *list-wise deletion* from a *statistical* as well as from a *practical* standpoint because the advantage of being able to apply a well-known and familiar technique ultimately leads to more accurate results (Schafer & Graham, 2002). Lastly, *list-wise deletion* ensures that the same sample is used each time the data are analysed²³⁵. This feature increases the validity of inter-group or alternate model comparisons and their interpretation (Schafer & Graham, 2002), which could prove to be a major advantage for a study that aims to test the expansion of a theoretical framework. In view of these insights, the researcher perceives any elaborate treatment of missing data beyond *list-wise deletion* as inappropriate.

For *list-wise deletion*, the researcher needs to determine whether data are *missing completely at random* (MCAR)²³⁶ (McDonald & Ho, 2002). If not, missing data remedies may lead to biased results²³⁷ (Allison, 2003). The MCAR issue can be answered for most *MVs* in the researcher's sample without testing because some of the variables referring to RBS provide a *not applicable* response option in case respondents never used such services. These responses, coded as *MVs*, account for most of the missing data and are obviously not MCAR²³⁸, which is confirmed by Little's (1988) MCAR test in SPSS because the test shows a significant result²³⁹. This finding, however, holds little meaning for a possible bias because the *not applicable* response option should not literally be understood as *MV*, since it provides full information about the respondent for the respective variable (Schafer & Graham,

²³⁴ Calculation stated on next page.

²³⁵ Instead of a method where the sample changes with the variables that are being tested, as it is the case with more complex methods such as FIML.

²³⁶ Missing data on a variable where presence or absence of the value is independent of other OVs and the variable itself (McDonald & Ho, 2002).

²³⁷ When the presence or absence of a value is dependent on other variables, the removal of cases where the value is absent will skew the distribution of the *IV*.

²³⁸ Not applicable answers appear for services that are not used by the respondent. Since there are several questions referring to one service, the *MV* would in theory appear in all those questions for one respondent. Hence, they are not independent from each other and therefore not MCAR.

²³⁹ SPSS output: $\chi^2 = 1,972.442; p < .001.$

2002). A more accurate interpretation is that these respondents do not belong to the population that is targeted in the measure and thus, the model cannot be tested for them. Consequently, the researcher excludes **311** concerned cases from the sample altogether, resulting in an adjusted sample size of **1,453**²⁴⁰ cases as a basis for the analysis of true *MV*s, i.e. without *not applicable* response option.

Based on this adjusted sample (cf. chapter 6.8), the remaining true MV_s are tested with a renewed Little's MCAR test that reveals that the remaining MVs are still not MCAR²⁴¹. This researcher could not find conclusive guidelines in the literature as to how the bias of a list-wise deletion can be further investigated and therefore decided to compare CFA results before and after the MV treatment of his sample to test whether the MCAR violation causes bias²⁴². Since results depend on the number of items included in the analysis, they are also obtained before and after item elimination²⁴³. This way, the researcher hopes to address three potential problems: First, he can fulfil the basic SEM requirement of testing his measurement model until he arrives at a valid solution²⁴⁴. Second, he can conduct a bias inspection, i.e. verify whether factor loadings that lead to item deletion remain the same after the MV treatment. Third, he can perform ad-hoc missing data treatment, i.e. adjust the case elimination procedure to the number of items that are confirmed as valid and thereby recover cases, since some of them have MVs only for variables that are eliminated, i.e. no MVs for variables which are further analysed in the SEM and RA sections of the analysis.

To achieve this integrated approach of establishing item validity and treating MV, the researcher developed and applied the following steps (Appendices A7.1 + A7.3):

²⁴⁰ 1,764 (full sample) - 311 = 1,453 cases. Appendix A7.1 shows a graphical representation of the MV analyses.

²⁴¹ SPSS output: $\chi^2 = 1,285.577; p < .001$

²⁴² Exclusion bias can occur by systematically excluding particular individuals from the study (Hair & Anderson, 2010).

²⁴³ Results are discussed in stage 4 of the SEM analysis (cf. chapter 7.9).

Achieved when all factor loadings meet the COV \geq .45.

- CFA²⁴⁵ with **1,453** cases and **78**²⁴⁶ items (cf. chapter 6.8) to identify and eliminate **38** bad items with factor loadings < .45 (Hair & Anderson, 2010), leading to a revised item count of **40**²⁴⁷ (Appendix A7.3, Table A7.3.1a).
- List-wise deletion of 24 cases with MVs for one or more of the remaining 40 items to remedy missing data, leading to a revised sample of 1,429 cases (Appendix A7.1, Figure A7.1.2).
- CFA with 40 items and the revised sample of 1,429 cases to re-confirm results. Three bad items were deleted whose factor loadings dropped below the COV of .45 due to the new factor structure and / or elimination bias, resulting in a new item count of 37 (Appendix A7.3, Table A7.3.1b).²⁴⁸
- Revised list-wise deletion of 22 instead of 24 cases²⁴⁹ with MVs in one or more of the remaining 37 items to again remedy missing data based on the new item set of 37, resulting in a new sample of 1,431 cases (Appendix A7.1, Table A7.1.4).
- 5. CFA with **37** items and **1,431** cases to re-confirm item validity and CFA results (Appendix A7.3, Table A7.3.2).²⁵⁰

CFA results differ slightly across the five steps, but variations in factor loadings stay within a small range (Appendix A7.3, Table A7.3.1a)²⁵¹. Thus, the researcher argues that potential bias caused by the *MV* treatment is negligible and implications for the convergent validity remain the same, except for items **SEF-05 (V09r)** and **SEF-06 (V10r)**, which are eliminated because their standardised factor loading drops below the COV of .45²⁵². Since the values for these two variables do not differ much from the initial estimate, the difference to the final estimate can be ascribed to random variation rather than bias caused by *list-wise deletion*. Additionally, the retention of cases which contain *MV*s only for items that are not used in the SEM analysis due to

²⁴⁵ Initial CFA was performed using AMOS' FIML procedure as an effective way of obtaining initial results despite missing values (Arbuckle, 2012).

²⁴⁶ Only 78 (75 construct indicators and 3 demographic variables) of total 87 items are relevant for the analysis.

²⁴⁷ 37 construct indicators and 3 demographic variables.

²⁴⁸ Numbers stated in tables are excluding the three demographic variables.

²⁴⁹ This number is lower than in stage 2 because *list-wise deletion* in stage 3 is based on 40 items. In stage 4, only 37 items are used, leading to less cases with missing values.

²⁵⁰ Numbers stated in tables are excluding the three demographic variables.

²⁵¹ Difference for most items < .02. Highest difference = .070 (SEF-05r / V09r).

²⁵² Values for both items changed from .45 to .39 after *list-wise deletion* and without changing the factor structure, i.e. without eliminating variables (Appendix A7.3, Table A7.3.1a).

validity concerns is possible. Instead of **1,163** cases²⁵³ that would have been retained based on **87** items in a full *list-wise deletion*, **1,431** cases can be retained for the final sample based on the remaining **37** items (Table 7.1).

Steps undertaken	Data collection	Data cleaning	Target group adjustment	List-wise deletion and deletion of
	(chapter 6.7)	(chapter 6.7)	(chapter 6.8)	"not applicable"
Ν	2,301	1,964	1,764	1,431

 Table 7.1:
 Sample size reduction after missing data handling

7.3.2 Multivariate Normally Distributed Data

Multivariate normality is an assumption underlying the MLE method. Most SEM researchers, however, fail to report detailed descriptive statistics necessary to confirm this assumption despite its potential to bias statistical estimation and inference (Lim & Melville, 2009). This may be caused by a lack of conclusive SEM reporting guidelines concerning said descriptive statistics. Literature reviewed by this researcher states the need to assess *multivariate normality*²⁵⁴ and connected assumptions²⁵⁵, but does not give instructions about how to test these assumptions and how to deal with the results, especially when assumptions are not met (Blunch, 2008; Bollen & Long, 1993; B. M. Byrne, 2010; Hair & Anderson, 2010; Hoyle, 1995, 2012; R. B. Kline, 2005; Schumacker & Lomax, 2004)²⁵⁶.

In an attempt to bridge this gap of information, the researcher applies guidelines developed by Lim and Melville (2009) to report concerned statistics, starting with *multivariate normality*. It should be noted that in general, criteria for assessing *multivariate normality* are applied with less strictness than for other *multivariate* techniques²⁵⁷ because past simulation studies show little or no impact of non-

²⁵³ 1,764 (full sample) - 603 = 1,163. Appendix A7.1 shows a representation of the *MV* analyses.

²⁵⁴ Dealing with the normality of joint distributions.

²⁵⁵ Such as the absence of *multicollinearity* and presence of *homoscedasticity*.

²⁵⁶ Shortcomings may relate to the fact that SEM (for a statistical method) is a young field and that the impacts e.g., of *N*-*N* on estimations, are still subject to debate (Lim & Melville, 2009).

²⁵⁷ For example, *multiple regression*.

normality (*N*-*N*) on path estimation, especially for sample sizes over **200** cases²⁵⁸ (Anderson & Gerbing, 1988; Browne, 1984; Lim & Melville, 2009).

Investigation of *multivariate normality* for all variable pairs is not a viable option because the sheer number of *multivariate* distributions quickly becomes impractical to examine²⁵⁹. However, in many instances, *multivariate n-n* data can be discovered by inspecting *univariate* distributions (R. B. Kline, 2005). Since large samples over **200** cases will almost always show significant deviations from normality, making normality statistics difficult to interpret, statistics are not calculated for this investigation. Instead graphical representations of the distributions, i.e. histograms, are examined (Appendix A7.2, Figure A7.2.1) (Field, 2005; R. B. Kline, 2005).

7.3.2.1 Testing for Normality

The researcher's investigation reveals that in his sample, a number of items show *n*-*n* distributions. Violations of this assumption have the biggest impact when it comes to *endogenous* variables (Eliason, 1993). Hence, the analysis first focuses on constructs that are specified as *endogenous* according to the hypotheses (cf. chapter 5), i.e. **BIS, ATT, PBC, SUN,** and **SEF**. The following section offers a brief description of distributions and continues with a discussion of possible consequences, before the next chapter outlines remedies.

For *endogenous* variable **BIS** all four items show sufficiently normally distributed data. There is a slight positive skew for all items, but in the researcher's opinion this effect is rather weak and the mode is still located at the centre value ("4") of the 7-point Likert scale. The mode is only marginally more peaked than in a normal

²⁵⁸ Nevertheless, the issue is addressed because (i) they may influence other estimated values (cf. chapter 7.3.2.1) and (ii) this researcher seeks to provide maximum transparency, so that other researchers may make their own assessment of the issue.

²⁵⁹ For example, examining the joint distribution of all possible variable pairs among 75 items (3 of the 78 items relevant for the SEM analysis are not part of the *measurement* model, because they are demographics and do not measure *latent* constructs) would result in a total of 2,775 distributions – a number that is not only tedious to examine, but also unreasonable to publish in paper form.

distribution, leading to the conclusion that the data are leptokurtic²⁶⁰, but to an acceptable degree. Thus, the researcher argues that **BIS** related items can be used without normality concerns.

Histograms for **ATT** display little skew, but a consistent leptokurtic shape, possibly due to a strong tendency of respondents to opt for the centre value ("4"), meaning that the mode is more peaked than anticipated under the normality assumption. The impact, however, is expected to be small or non-detectable since peaks are not severely high²⁶¹. Thus, **ATT** related items can be used without normality concerns.

PBC related items show a skew pattern that raises concern. While **PBC-01** and **PBC-03** show no skew, **PBC-02**, **PBC-04** and **PBC-06** display a strong negative skew with a mode at the upper end of the scale (answer values "6" and "7"). **PBC-05** displays a bimodal distribution with a main peak at "4" and a second peak at "6", causing a negative skew. Although peaks of all six items show acceptable kurtosis, skew patterns lead the researcher to conclude that items **PBC-02**, **PBC-04**, **PBC-05** and **PBC-06** are *n*-*n* distributed.

SUN related items **SUN-01** through **SUN-04** all show histograms with almost nondetectable skew, but exceptionally leptokurtic shape. **SUN-05** shows a negatively skewed distribution with a mode at the upper end of the scale (answer value "6"), but virtually no kurtosis issues. Hence, all **SUN** related items are *n*-*n* distributed.

Lastly, items for **SEF** show consistently strong positive skew with a low mode (answer value "2"), except **SEF-05** and **SEF-06**, which show a negative skew, presumably due to the inverse formulation of the item. In addition, distribution patterns appear slightly leptokurtic. **SEF-01** shows a slightly bimodal distribution with one peak at the centre value ("4") and one lower peak for the value "2". Further, **SEF-01** displays a close to normally distributed shape with no obvious

²⁶⁰ Distributions where the peak is higher than the normal curve.

²⁶¹ If anything, correlations will appear a bit weaker because of the strong neutral center of ATT.

kurtosis and skew. This leads to the conclusion that all items **SEF-02** to **SEF-06** deviate from the normality assumption, i.e. are *n*-*n* distributed.

Both kurtosis and skew of items in the dataset violate the normal distribution assumption. Although such findings can be expected within the field of behavioural science (Micceri, 1989), the implications are difficult to pinpoint because they are yet to be fully explored (e.g., in simulation studies). Two estimation problems that result from *n*-*n* data, however, are established with high certainty: while path estimates are repeatedly confirmed to be largely unaffected by *N*-*N* (M. Lei & Lomax, 2005; Lim & Melville, 2009; Sharma, Durvasula, & Dillon, 1989), past studies show that normality violations could lead to:

- (a) An inflation of the χ^2 statistic and consequently a decrease in overall *model fit*, i.e. to an increased likelihood of falsely rejecting a correct model (Anderson & Gerbing, 1988), and
- (b) Standard errors which may be underestimated, possibly leading to an underestimation of *p*-values and subsequently to an increased likelihood that covariances, factor loadings and variance estimates may appear significant, even if they are not present in the population (Lim & Melville, 2009; Satorra & Bentler, 1994; West, Finch, & Curran, 1995).

7.3.2.2 Bootstrapping as a Remedy for Non-Normality

Several options are on hand to prevent the problems outlined above, two of which shall be briefly debated²⁶²: maybe the most obvious one is the use of an SEM estimation method other than MLE, in particular one that is not based on the normality assumption, such as the *asymptotically distribution-free estimator* (AFD) (Browne, 1984). The disadvantage of this estimator is, however, that it requires very large samples. The minimum sample size for the AFD is not consensual, but suggestions of up to **5,000** cases are frequently made (R. B. Kline, 2005; Marsh,

²⁶² Alternate methods include the *scaled* χ^2 or the *robust standard errors* method (Satorra & Bentler, 1994). These methods are unavailable in AMOS.

Wen, & Hau, 2004; Ullman, 2006). Apart from the fact that this necessity is not met in this study, simulation studies show that the AFD delivers less reliable results than MLE (Hu et al., 1992; Marsh et al., 2004; West et al., 1995). Hence, this researcher will use the widely accepted MLE, requiring a different method to remedy *N-N*.

*Bootstrapping*²⁶³ is accepted because previously, computational demands were too high to conduct extensive studies (West et al., 1995). *Bootstrapping* addresses both issues of *n*-*n* distributed data because it can be used to address problems (a) to evaluate the *fit* of entire models and therefore acts as a replacement for the MLE generated χ^2 statistic (Bollen & Stine, 1992), and (b) to estimate standard errors correctly (Fouladi, 1998; Hancock & Nevitt, 1999; Nevitt & Hancock, 2001).

The Bollen and Stine (1992) *bootstrap* for *model fit* has the purpose of addressing problem (a) by producing a *bootstrapped*, corrected χ^2 statistic. χ^2 is the most fundamental statistic in determining *model fit* (cf. chapter 7.9.1) and is generally reported. However, χ^2 statistics in general, tend to react very sensitive to the sample size and almost invariably reject models with sample sizes above **200** cases (Garson, 2013; R. B. Kline, 2005), which makes them unfit to assess *model fit* in this study – even if adjusted for *N-N*. Therefore, additional indicators of *overall model fit* that are insensitive to *n-n* data shall be reported to address problem (a). Past studies also indicate that *relative (incremental) fit* indices²⁶⁴ are largely unaffected by *N-N* (M. Lei & Lomax, 2005; L. Wang, Fan, & Willson, 1996). Yu (2002) confirms this by showing that even *absolute fit* indices²⁶⁵ can be robust against *N-N*, given certain conditions²⁶⁶. Therefore, CFI and RMSEA are reported alongside the Bollen and Stine (1992) *bootstrapped* χ^2 statistic. A detailed discussion concerning these

²⁶³ The rationale behind *bootstrapping* is to draw a specified number of sub-samples (e.g., 1,000) from the given sample by replacing a small number of random cases with other cases from the same parent sample each time (Diaconis & Efron, 1983). When applying the MLE to each of the sub-samples, the variation of MLE parameters between the 1,000 bootstrap samples is stated as the standard error of that parameter (Arbuckle, 2012). In addition, each parameter is stated as a specified CI, allowing the researcher to test against the null hypothesis that there is no effect in the population. The related *p*-value indicates how small the CI for the parameter would need to be to include zero, meaning that a traditional interpretation is possible.

²⁶⁴ In particular CFI and TLI.

²⁶⁵ In particular RMSEA.

²⁶⁶ For example, sample size > 1,000 for RMSEA.

and other *fit* indices will be provided in stage 4 (cf. chapter 7.9.1) of the SEM analysis process in this chapter.

The major advantage of *bootstrapping* the MLE (which is done separately from the previously mentioned Bollen-Stine-*bootstrap*) is that it addresses problem (b) by correcting the standard error that is commonly underestimated by MLE when the normality assumption is violated (Fouladi, 1998), meaning that corrected *p*-values for regression weights and covariances can be used for hypotheses testing. Further, it provides additional results to a normal theory MLE²⁶⁷ because it gives the researcher standard errors as well as subsequent *confidence intervals* (CIs)²⁶⁸ and *p*-values for significance tests of most estimated parameters, including standardised regression weights, correlations and indirect effects, which cannot be estimated in a normal theory MLE (Blunch, 2008). In practice, this means that a larger variety of hypotheses can be tested. Especially *p*-values for indirect effects are essential to the analyses in this study because the PTM involves a number of hypothesised mediation effects, whose significance cannot be judged with normal theory MLE.

Considering the advantages outlined above and applying recommendations of Nevitt and Hancock (1998), a *normal* (also called *naïve*) *bootstrap* with a number of **1,000** *bootstrap* samples and bias-corrected CI of 90% (for the correction of standard errors) and a Bollen-Stine-*bootstrapped* χ^2 statistic (for the improved assessment of *model fit*) are implemented for this study.

7.3.3 Multicollinearity

*Multicollinearity*²⁶⁹ problems may result in a *non-positive definite sample covariance matrix*²⁷⁰ (B. M. Byrne, 2010), which can cause SEM relevant calculations to fail²⁷¹

²⁶⁷ MLE without *bootstrapping*.

²⁶⁸ CI states the upper and lower limit with which the real population value will be with a given certainty (e.g., 90%). A large CI indicates a more inaccurate estimation.

²⁶⁹ A situation where correlations between some variables are so high that they can be presumed to measure the same underlying construct.

²⁷⁰ A matrix is positive definite if all *eigenvalues* are > 0 (Wothke, 1993).

²⁷¹ For example, division because some denominators could be equal to zero. This would cause AMOS to refuse an output.

(R. B. Kline, 2005). Such problems arise if *multicollinearity* is present in the *structural* model, whereas it is usually not a problem in the *measurement* model, because *OV*s within a measurement construct are not only expected, but in fact required to correlate highly²⁷². Appendix A7.2 summarises statistics to detect *multicollinearity* for this study. Tables A7.2.1 and A7.2.2 show *bivariate* correlation tables for *LV*s to detect *bivariate multicollinearity*, whereby a threshold value > .85 is interpreted as indicating *bivariate multicollinearity* problems (R. B. Kline, 2005). Tables A7.2.3 and A7.2.4 illustrate the squared multiple correlations (R^2)²⁷³ between each construct and all other constructs, whereby R^2 > .90 indicates *multivariate multivariate multicollinearity* (R. B. Kline, 2005). Tables A7.2.1 and A7.2.3 are based on the full item set before item elimination and before CFA²⁷⁴, whereas Tables A7.2.2 and A7.2.4 illustrate results after item elimination and after the CFA. Table A7.2.2 also contains *bootstrapped* estimates including CIs of 90%.

Table A7.2.1 shows that the strongest correlation estimate (IGC \leftrightarrow PER) is highly significant with an upper bound of .815 at a *bootstrap* CI of 90% and therefore remains below the threshold. Three other correlations are high with estimates > .8 (PER \leftrightarrow UNC, PRC \leftrightarrow TRU, IGC \leftrightarrow UNC), but no correlation exceeds the threshold of .85, indicating that there are no *bivariate multicollinearity* concerns. Table A7.2.2 shows that this result holds true after item elimination and CFA validity testing. The squared multiple correlations (R^2) in Table A7.2.3 (pre-CFA) and 7.2.4 (post-CFA) confirm findings that there are no *multicollinearity* concerns for the post-CFA model, although in the pre-CFA table, four constructs (IGC, PER, TRU, UNC) exceed the R^2 COV of .90, indicating serious *multicollinearity* when using the initial item set and constructs. However, the reduction of items and constructs in the CFA remedies those concerns entirely, with the highest R^2 staying far below the COV at .713 (IGC). Hence, the researcher is not concerned about *multicollinearity* in his study.

²⁷² Measuring the same construct.

²⁷³ R² for each LV with all other variables are calculated in SPSS from a dataset with imputed LV scores using AMOS (via Analyse -> Data Imputation -> Regression Imputation).

²⁷⁴ Reported in stage 4 of the SEM analysis process (cf. chapter 7.9).

7.3.4 Heteroscedasticity

In a meta-study of 56 SEM application studies, Lim and Melville (2009) demonstrate that *heteroscedasticity*²⁷⁵ is the least considered distributional misspecification in SEM related literature. In fact, not a single study analysed by Lim and Melville mentions the issue. In contrast, 36% of studies applying RA explicitly report heteroscedasticity related test statistics or corrective methods. Part of the explanation for this shortcoming is the knowledge gap (Lim & Melville, 2009) regarding the implications of heteroscedasticity in SEM analysis. Despite the recommendation for SEM and RA practitioners to test whether the assumption of homoscedasticity is met (Bollen, 1989; B. M. Byrne, 2010; R. B. Kline, 2005), it remains unclear for SEM whether the test is mandatory (Lim & Melville, 2009) because the effects of violations remain partially unknown to-date. According to simulation studies, path estimates are consistent under heteroscedasticity, but there is a potential to obtain incorrect standard errors (Bollen, 1989) and to reduce the statistical power²⁷⁶ of the estimation (Lim & Melville, 2009). In order to assess these possible problems, the researcher will implement recommendations from contemporary SEM literature for dealing with heteroscedastic data:

As the only actual remedy, R. B. Kline (2005) mentions the possibility of variable transformation to create *homoscedastic* distributions. However, the researcher is unable to transform variables because self-reported Likert-scaled items like the ones used in this study are not offering the necessary mathematical properties (e.g., the number of data points is too low with only 7) for a successful transformation (Nevill & Lane, 2007). Due to the lack of a remedy solution, this researcher opts to assess *heteroscedasticity* with adequate tests and, based on implications from Lim and Melville (2009), to draw conclusions for the interpretation of SEM estimators. In order to detect *heteroscedasticity, bivariate* scatterplots showing the joint distribution for each *latent endogenous* variable with all of its *latent* variables are produced in SPSS (Appendix A7.2, Figure A7.2.2), following recommendations by R.

²⁷⁵ Homoscedasticity (vs. heteroscedasticity) is defined as the uniform variance of an outcome variable across all levels of the predictor, i.e. variance invariance (Hair & Anderson, 2010).

²⁷⁶ Probability of rejecting the null hypothesis when it should be rejected, or the probability that statistical significance will be shown, if it is present (Hair & Anderson, 2010).

B. Kline (2005). *LVs* used in said plots are imputed from AMOS into the SPSS dataset²⁷⁷. For this analysis of heteroscedasticity, only items and constructs confirmed as valid and reliable during the CFA are used. Results of the CFA are described in stage 4 of the SEM analysis process (cf. chapter 7.9). The following paragraphs start with a description of relevant *bivariate* scatterplots before concluding with a discussion of implications.

Endogenous variable ATT is examined in combination with each of its four predictors SUN, TRU, PER and PAF. Scatterplots for ATT / PER and ATT / PAF create cause for concern, displaying a typically *heteroscedastic* shape (Field, 2005) that funnels out towards one end of the predictor PER and PAF respectively, whereas scatterplots for ATT / SUN and ATT / TRU display roughly spherical or oval shape and therefore do not raise concerns. *DV* SUN shows a strongly funnelled and therefore *heteroscedastic* distribution in the joint *bivariate* scatterplot with its only predictor PER. While the scatterplot for *endogenous* variable PBC is acceptable when combined with TRU, the joint distributions PBC / PER and PBC / PAF are clearly *heteroscedastic*. With regards to SEF and its predictor IGC, the distribution is also *heteroscedastic*, with all predictors ATT, SUN, PBC, TRU, SEF and PAF showing a roughly spherical shape when plotted against BIS. In sum, there are six joint distributions that raise concerns for *heteroscedasticity*: ATT / PER, ATT / PAF, SUN / PER, PBC / PER and SEF / IGC (Appendix A7.2, Table A7.2.5).

To gain an additional perspective on the data to further investigate such concerns, an alternative test is applied to the variable combinations in question. Using a Levene's test (Hair & Anderson, 2010) for each of the six combinations²⁷⁸, five *heteroscedastic* joint distributions reveal significant test values at $p < .05^{279}$ and are thus confirmed to be *heteroscedastic*. **SEF** / **IGC**, however, cannot be confirmed as *heteroscedastic* with a non-significant result (p = .066; Appendix A7.2, Table A7.2.6).

²⁷⁷ Using AMOS' data imputation feature for regression imputation.

²⁷⁸ Levene's test compares the variance of each *endogenous* variable for values below and above the mean of the concerning predictor.

 $^{^{279}}$ p = .000, .034, .037, .011 and .002

A key concern of *heteroscedasticity* in SEM is that it reduces the power of path estimates (Lim & Melville, 2009).

A COV of .80 is suggested, independent from the calculation method (J. Cohen, 1988). However, Lim and Melville (2009) claim that for sample sizes > **400**, *heteroscedasticity* only makes path power drop below .80 if the explained variance²⁸⁰ of the *endogenous* variable is below .30. This thought leads the researcher to conclude that if any of the *heteroscedastic* variable pairs mentioned in this section has an *endogenous* variable with R^2 < .30, insignificant path estimates that are found in stage 6 of the SEM analysis process (cf. chapter 7.10) can be ascribed to *heteroscedasticity*. The interpretation of significant path estimates, however, is not affected by *heteroscedasticity*.

7.4 Regression Analysis

TPB related research work commonly applies different analytical approaches, most prominently RA^{281} and SEM²⁸² (Ajzen, 2012a). Due to computational and conceptual differences, the comparability of results stemming from different analytical methods is limited. The researcher aims to establish comparability and thus, offers two different perspectives of his data. This section presents the RA perspective, whereas the SEM analysis is conducted in the next sections (cf. chapters 7.5 – 7.11). In order to create a common basis for comparing **RA and SEM** results, this researcher aimed to conduct the respective analyses with identical samples and identical item sets. Since the missing data and data screening methods used for SEM are more rigorous than the ones used for RA, they were conducted prior to the RA to prepare the sample as best as possible for the RA. Additionally, RA specific data screening methods are applied in chapter 7.4.2.

²⁸⁰ Reported as R^2 in AMOS.

 ²⁸¹ For example, Gerrard and Cunningham (2001); Hofmann et al. (2008); Courneya et al. (1999); L.-Y. Lee, Veasna, and Wu (2013); Edward et al. (2010).

 ²⁸² For example, Bansal (1997); de Matos et al. (2009); Cannon et al. (2010); C.-T. Liu, Guo, and Lee (2011).

7.4.1 Process and Assessment Criteria

Construct variables are computed using averaged scores of the indicator variables, similar to other relevant studies in the field of behavioural sciences²⁸³. In order to achieve an identical data foundation for RA and SEM, the same indicator variables are used for both analyses. The minimum requirements for an averaged or summated score are content *validity* and *reliability* (Hair & Anderson, 2010). Content *validity* was discussed and tested earlier (cf. chapter 6.4). *Reliability* is assessed with CA at a COV of .7 (Appendix A7.3, Table A7.3.4). Due to the fact that requirements for items used in SEM are more demanding than in RA, the final set of indicator variables is only determined in the SEM analysis (cf. chapter 7.9.2 and CFA model, Appendix A7.3, Figure A7.3.3). Averaged scores are generated by summarising the values of all indicator variables for a construct and dividing them by their number using SPSS²⁸⁴. The variables created in this manner are designated with the suffix **"sum"** (e.g., **BISsum**).

RA is conducted hierarchically, starting with the FTM (TPB) and then progressively integrating each of the three concepts²⁸⁵ (cf. chapter 2.5) as a block of variables up to the full integration of all constructs in one model (PTM). This approach enables an assessment of the suggested TPB extensions in the given context (Field, 2005). In accordance with the hypotheses (cf. chapter 5), the PTM includes the *IVs* **ATT, SUN, PBC, TRU, SEF, IGC, PAF, PER** whereas **BIS** serves as *DV*. A summary of selected output and computation options for the RA in SPSS based on recommendations by Field (2005) and Hair and Anderson (2010) is shown in Appendix A7.5, Table A7.5.1.

7.4.2 Data Screening Results

Cut-off values (COVs) and interpretations applied in this section are based on Field (2005) and Hair and Anderson (2010).

²⁸³ For example, Jamal and Naser (2002).

²⁸⁴ For example, BIS-01 to BIS-05 are summated and then divided by 5.

²⁸⁵ Past behavior, P&P factors and GLOBE dimensions. The four steps in the hierarchy are designated in the SPSS outputs as "Model 1" to "Model 4" and not to be confused with the theoretical models presented in this study ("Model A" or "Model B").

Table A7.5.4 illustrates R^2 values for the *model fit* of Model 1, which explains **32.1%** of the variance in **BISsum**, whereas Model 4 explains **35.4%** of variance, meaning the proposed extensions in this study can explain an additional **3.3%** in variance, **1%** of which is provided by **PAF** (Model 2), **2%** by P&P factors (Model 3) and **0.3%** by GLOBE's cultural dimensions (Model 4). Adjusted R^2 values suggest that generalisability of these results is fairly high, since adjusted R^2 values are very close to R^2 and therefore, the RA of the given sample is likely to be an accurate representation of the population. With exception of Model 4, all changes in R^2 are connected to F-ratio significances < .001, meaning changes are highly significant. The lack of a significant contribution of Model 4 is notable, but no reason to discredit it because apart from potential direct effects on **BISsum**, another important reason for the inclusion of GLOBE dimensions are several hypotheses describing possible moderating effects (cf. chapter 7.4.5), which are not assessed by the R^2 measure.

For this study, the *Durbin-Watson-test*²⁸⁶ value is 1.9, indicating that error terms of the RA are independent and there is no cause for concern.

Absence of *multicollinearity* is another assumption underlying multiple RA. Looking at correlations in Table A7.5.3, none of the predictors exceeds the COV of R = .85, meaning that there are no immediate collinearity concerns, i.e. all predictors measure different aspects of the respondents (as they should). The highest correlation with **BISsum** is observed for **ATTsum** (R = .526, *p* = .000). Table A7.5.6 provides Variance Inflation Factor (VIF)²⁸⁷ statistics, whereby concerns can be caused by (a) VIF values > 10 (Bowerman & O'Connell, 1990; Myers, 1990), (b) an average across all VIF values substantially above 1^{288} (Field, 2013) and (c) a tolerance (1 / VIF) < .1 (Menard, 2002). For this study, the lowest tolerance level of

²⁸⁶ Helps to determine if error terms of the RA are independent, which is one of the underlying assumptions of RA. A test result close to the value of 2.0 is considered to be supportive of the assumption, whereas values below 1.0, and higher than 3.0 are indicative of a violation.

 ²⁸⁷ Another measure of *multicollinearity*. Higher degrees of *multicollinearity* are reflected in higher VIF values.

²⁸⁸ VIF, by definition, is always equal to or higher than 1 (Hair & Anderson, 2010).

.536 (**PERsum**) and the largest VIF of 1.867 (**PERsum**) are far from the COV. The average VIF value in the integrated model (Model 4) is 1.372. Although this value exceeds 1, it is not considered substantial by this researcher²⁸⁹ because Field (2013) reveals that average VIF values between 1 to 2 should be unproblematic, whereas average VIF values of 5 or higher are most likely problematic. Moreover, SPSS *collinearity* diagnostics (Table A7.5.7) show that there may be some amount of *multicollinearity* between **ATTsum** and **SUNsum**, since both variables load on a common dimension²⁹⁰. The researcher considers this result as acceptable because (i) other tests cited earlier in this paragraph indicate no concern for *multicollinearity* and, maybe more importantly, (ii) a certain amount of correlation between the two variables is expected due to the causality of hypothesis **H1.4** (cf. chapter 5.1).

Table A7.5.8 shows *casewise* diagnostics to detect outliers, illustrating that **66** standardised residuals exceed the COV of |2|. This is acceptable, since Field (2005) states that the sample can contain up to 5% of cases exceeding this value (equivalent to **71** cases based on the researcher's sample of **1,431** cases). Further, he states that 1% of cases (**14** cases in the given sample) can be expected to exceed the value of |3|. Table A7.5.8 shows only **8** values exceeding this COV. Thus, no cause for concern is indicated by the standardised residuals. However, to obtain a more complete picture of the issue, **66** cases exceeding the absolute standardised residual value of |2| shall be examined in further tests in the following paragraph.

*Cook's distance*²⁹¹ (Table A7.5.9) should not to exceed the value of 1.0 (Cook & Weisberg, 1982). Since all examined outlier cases are below this COV, there is no cause for concern. Further, *leverage (hat value)*²⁹² in a single case should be less than three times the *average leverage* (Stevens, 2009) and is calculated as .019²⁹³.

²⁸⁹ The choice of an acceptable degree of *multicollinearity* has to be made by the researcher (Myers, 1990). Since this study is not following an experimental research design, an average VIF > 1 is expected for all variables.

²⁹⁰ With no *multicollinearity*, each variable is expected to load on only one dimension.

²⁹¹ Indicates how strongly each outlier case affects the whole model.

²⁹² Measure for the influence of a single observed value of the *DV* on the value that is predicted by the regression equation.

²⁹³ Calculating average leverage as $\frac{k+1}{n}$ whereby k is the number of *IV*s and n the number of cases, leads to a COV of 3 * $\frac{(8+1)}{1431}$ = 0.019.

Table A7.5.9 shows three cases not meeting this COV (case numbers **923**, **1233**, **1269**). To further evaluate such cases, their *Mahalanobis distance*²⁹⁴ is examined. Guidelines in the literature (Barnett & Lewis, 1978; Field, 2005) do not explain how to interpret this measure for datasets with more than **500** cases and **5** variables. Therefore, an alternative route is taken by calculating probability values for *Mahalanobis distance* scores²⁹⁵ and using a conservative significance level of p < .001 as an indication for outliers (Hair & Anderson, 2010). Judging by the *p*-values (Table A7.5.9), only cases **923** and **1233** fall below the COV. As a final measure to rate cases that could be cause for concern, *DFBeta statistics*²⁹⁶ are applied²⁹⁷. The remaining two cases are within the recommended range of -1 to +1 (Table A7.5.9).

Only two of **1,431** cases in the sample represent cause for concern. However, this researcher decided to retain the two cases because (a) most of the other COVs indicate no cause for concern, (b) the actual bias caused by two outlier cases among **1,431** is considered negligible, especially in view of the fact that the scales used to measure the variables are limited in range from 1 to 7 (meaning that no values will be exceptionally high or low), (c) the multiple methods applied in this study (RA and SEM) are best compared using the exact same data, otherwise the comparison will be inconsistent due to sample variation and (d) removing them was not worth the effort of redoing the entire SEM analysis in terms of efficiency. At this stage, the researcher concludes that his tests for two of the underlying RA assumptions, namely *independence of residuals* and absence of *multicollinearity*, provide satisfactory results and that problems with outlier cases are negligible.

Moreover, the data set is screened for the assumptions of *homoscedasticity*²⁹⁸ and *linearity*²⁹⁹. Appendix A7.5, Figure A7.5.1, shows a plot of standardised residuals

²⁹⁴ Single measure of a case's distance from the mean of all included variables. As such, this measure is primarily used to detect *multivariate outliers*.

²⁹⁵ This is possible using SPSS compute command "1 - CDF.CHISQU (MAH_1, 9)", based on the fact that the scores follow a χ^2 distribution.

²⁹⁶ Each DFBeta value indicates the number of standard errors by which a coefficient changes when an observation is deleted and thus indicates whether a case has a large influence on each of the regression parameters (Stevens, 2009).

²⁹⁷ Other cases are already confirmed to be no cause for concern at this stage.

²⁹⁸ *Homogeneity* of variance in the *DV* across all levels of the predictors.

against the standardised predicted value, which allows for a visual assessment of the aforementioned assumptions. The shape of this scatterplot appears as a random array of dots centred around zero, meaning the data set is in fact *homoscedastic* and therefore meets the assumption. Further, the graph shows that the assumption of *linearity* is met because residuals do not display any specific patterns dependent on **BISsum**, i.e. they are not a function of the outcome variable.

When looking at partial plots in Figure A7.5.4, *linearity* and *homoscedasticity* appear to be given for all variables, except **PAS-03**³⁰⁰ which deviates from the expected shape, thereby calling the results of this particular predictor into question. The shape of the residual cluster could suggest a *curvilinear* relationship, especially when looking at the group of data points between 0 and 2 on the x-axis that escapes towards the top half of the diagram. *Heteroscedasticity* may also be indicated since the variation in **BISsum** appears to be somewhat smaller at higher levels of **PAS-03**. Although these deviations appear to be small³⁰¹, the researcher concludes that the influence of **PAS-03** on **BISsum** should be interpreted with care.

Finally, the assumption of *normality of residuals* is tested by using histogram and normal probability plots (Figures A7.5.2 and A7.5.3). The former displays a close approximation of the normality function, which is depicted as a black line. For the latter, a perfect normal distribution is represented by a black line from the zero point in the bottom left corner of the graph to the upper right corner. This line is obscured by residual data points, verifying that the residuals approximate the normal distribution closely.

²⁹⁹ The mean values of the outcome and the predictor(s) lie along a straight line, i.e. there is a linear relationship as visualised in residual plots (Field, 2005).

³⁰⁰ PAS-03 represents the only variable for construct PAF.

³⁰¹ The respective scatterplot (Figure A7.5.4) displays both a *linear* and a *negative quadratic* (curvilinear) *fitting* curve, illustrating that the difference between the two is marginal. Regarding *heteroscedasticity*, variability of BISsum, when observed perpendicular to the fitting curves, appears to be highest in the middle, but the differences in variability are in fact not as high as it may seem. Due to the slightly quadratic relationship, data points are shifted towards the top in the mid-section of the graph, making the range of BISsum in this area appear wider than it is.

7.4.3 Direct Effect Hypotheses

Results for regression coefficients in all Models 1 - 4 are displayed in Appendix A7.5, Table A7.5.6. The evaluation of hypotheses is based on results for Model 4. Mediation and moderation hypotheses are covered in chapters 7.4.4 and 7.4.5.

H1.1 ATT positively affects BIS.

A *b* value of .410, highly significant at p < .001 confirms this hypothesis. In comparison with other *b* values in the model, **ATTsum** is the predictor that has the largest influence on outcome **BISsum**.

H1.2 SUN positively affect BIS.

A highly significant (p < .001) b value can be observed for **SUNsum**. The b value of .187 shows that **BISsum** will increase by .187 standard deviations if **SUNsum** increases by one. Therefore, **H1.2** is *confirmed*.

H1.3 PBC positively affects BIS.

PBCsum, in contrast, will lead to a decrease in **BISsum** by -.100 (p < .001) when increased by 1. In other words, the hypothesised positive influence of the predictor cannot be confirmed because the direction of the influence is negative. The hypothesis is therefore *rejected*³⁰².

H2.1 PAF positively affects BIS.

PAF, represented by the single-measure **PAS-03**, is found to have a weak positive effect on **BISsum** equalling .090 standard deviations. Since the effect is highly significant at p < .001, the hypothesis is *confirmed*³⁰³.

³⁰² Not confirmed: results do not provide conclusive evidence e.g., in case of insignificant *p*-values. Rejected: used to designate results that provide proof against a hypothesis e.g., in case of significant effects of trivial size or in the opposite direction.

 ³⁰³ As mentioned in chapter 7.4.2, this relationship can be seen as slightly *curvilinear*. The scatterplot in Figure 7.5.4 shows that when assuming a *curvilinear* relationship, the positive relationship is stronger for lower values of PAS-03, while becoming slightly negative towards higher values. Based on scatterplot, significance and effect strength, however, this researcher interprets the result as clear enough to be considered as confirmed, despite the possible non-linearity.
H3.3 TRU positively affects BIS.

Similarly, **TRUsum** displays a weak, but significant (b = .071, p < .005) effect, leading to the *confirmation* of this hypothesis.

H3.6 SEF positively affects BIS.

With a highly significant b of .114 (p < .001), **SEFsum** has a moderate effect on the outcome variable. The hypothesis is *confirmed*.

H4.14 IGC negatively affects BIS.

The coefficient for **IGCsum** is insignificant and shows trivial strength of only -.015. Moreover, its 95% CI crosses the zero-point, meaning it cannot be said with 95% certainty that the coefficient is different from zero in a random sample taken from the population. In sum, there is no support for the given hypothesis, which is therefore *not confirmed*.

To conclude the data screening results and to provide a more thorough picture of the sample data, construct means are reported in Appendix 7.6, Table A7.6.1.

7.4.4 Hypotheses related to Mediation Effects

Due to the complex and inefficient procedures required to perform mediation and moderation analysis manually in SPSS, this evaluation is conducted using the add-on macro PROCESS 2.10 for SPSS (Hayes, 2012), designed to simplify and streamline the task (Field, 2013).

H1.4 SUN positively affect an individual's ATT.

H1.4a SUN have an indirect positive effect on BIS, mediated by ATT. In light of the direct effect of SUN on BIS in H1.2, this mediation is partial.

Table A7.5.10 shows the result for hypotheses **H1.4** and **H1.4a**. From the first three regression sections in the output, it can be deduced that mediation is probably present, since the influence of **SUNsum** on **BISsum** shrinks from an *unstandardised*

 b^{304} of .51 (total effect model) to .24 when **ATTsum** is added to the model (p < .001 for both coefficients, two-tailed³⁰⁵), stemming from the effect of **SUNsum** on **ATTsum** in the first regression (b = .49, p < .001). Due to this direct effect, hypothesis **H1.4** is *confirmed*.

Section "Total, Direct and Indirect Effects" in Table A7.5.10 shows *standardised* and *unstandardised* mediated regression results, including 95% CIs for the indirect effect. Here, partial mediation is *confirmed*, since all *standardised* and *unstandardised* results, including corresponding CIs, are positive and of moderate strength. Hypothesis **H1.4a** is *confirmed*.

In order to reduce the extent of this chapter, the analysis of the remaining mediation outputs is limited to the "Total, Direct and Indirect Effects" section of the outputs, which contains all information needed to assess hypotheses.

- H2.3 PAF positively affects ATT.
- H2.3a PAF has an indirect positive effect on BIS, mediated by ATT. In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.
- H2.4 PAF positively affects PBC.
- H2.4a PAF has an indirect positive effect on BIS, mediated by PBC. In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.

The PROCESS macro in SPSS allows the researcher to test several mediators at once. **ATTsum** and **PBCsum**³⁰⁶ were therefore entered simultaneously as mediators between **PAS-03**³⁰⁷ and **BISsum**. This way, the total effect of **PAS-03** on **BISsum** is calculated in consideration of both mediators, leading to more accurate results. Table A7.5.11 shows the *unstandardised* effect of **PAS-03** on **BISsum** dropping from .215 to .118 (p < .001, in both cases) when two mediators are considered, meaning

³⁰⁴ Designated as "coeff" in Table A7.5.10.

³⁰⁵ All *p*-values reported in this study are two-tailed (not mentioned in the remaining analyses).

³⁰⁶ The negative effect of PBCsum on BISsum (Tables A7.5.6 and A7.5.11) is a potential concern, since negative indirect and positive direct effects cancel each other out, leading to inconsistent mediation (Kenny, 2013b). In the given case, however, mediation stays consistent because the influence of PAS-03 on PBCsum is also negative, resulting in a positive indirect effect in total.

³⁰⁷ Shown in the output with its SPSS variable name V74 (Table A7.5.11).

that partial mediation is present. An investigation of direct effects of **PAS-03** on the mediators (b = .137 on **ATTsum**, p < .001 and b = -.056 on **PBCsum**, p < .05) and the mediators on **BISsum** (b = .663 for **ATTsum** and b = -.107 for **PBCsum**) reveals that although all direct paths are significant, the one for **PAS-03** on **PBCsum** is negative and barely significant. These findings indicate that **H2.3** is *confirmed*, whereas **H2.4** must be *rejected*.

Standardised indirect effect results in Table A7.5.11 demonstrate that despite several significant direct effects, mediation is almost entirely attributable to **ATTsum** (b = .088, CI ranging from .061 to .117), meaning that **H2.3a** is *confirmed*, but **H2.4a** must be *rejected*. The reason for this rejection is that the *standardised* effect of **PBCsum** is so low (b = .006, CI ranging from .001 to .014) that **PBC** cannot be considered a relevant mediator, despite CI boundaries being both positive.

- H3.1 TRU positively affects ATT.
- H3.1a There is an indirect positive effect of TRU on BIS, mediated by ATT. In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.
- H3.2 TRU negatively affects PBC.
- H3.2a There is an indirect negative effect of TRU on BIS, mediated by PBC. In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.

The mediating relationships involving **TRUsum** imply the inclusion of two mediators, namely **ATTsum** and **PBCsum**³⁰⁸. Table A7.5.12 reveals a reduction of the direct effect of **TRUsum** on **BISsum** from .244 to .151 after factoring in the two mediators (p < .001 in both cases). In other words, there is a combined indirect effect of .093, which shows that mediation is present with a CI between .056 and .134. A closer inspection of the individual mediation paths shows that **TRUsum** significantly predicts both mediators (b = .125 for **ATTsum** and b = -.092 for **PBCsum**, p < .001 and p < .01, respectively), meaning that **H3.1** and **H3.2** are *confirmed*.

³⁰⁸ The negative sign of PBC's coefficient does not cause inconsistent mediation because it is affected negatively by TRU, resulting in a positive indirect effect (Table A7.5.12).

A look at *standardised* indirect effects further reveals that **PBCsum** plays a positive, but negligible role in the prediction of **BISsum** by **TRUsum** (b = .008, CI between .002 and .016). The small role of **PBCsum** relative to **ATTsum** illustrates that **H3.2a** must be *rejected*. With an identical line of reasoning to **H2.3a** and **H2.4a**, a comparatively moderate³⁰⁹ mediation effect (b = .066, CI between .036 and .099) for **TRUsum** via **ATTsum** provides *confirmation* for **H3.1a**.

- H4.1 PER positively affects ATT.
- H4.1a There is an indirect positive effect of PER on BIS, mediated by ATT. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.
- H4.2 PER positively affects SUN.
- H4.2a There is an indirect positive effect of PER on BIS, mediated by SUN. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.
- H4.3 PER positively affects PBC.
- H4.3a There is an indirect positive effect of PER on BIS, mediated by PBC. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.

For **PERsum**, the number of mediators to be included in the model reaches three. The direct regression of **PERsum** on each of the three mediators (Table A7.5.13) indicates that **H4.1** and **H4.2** are *rejected*, whereas **H4.3** is *confirmed* with **PERsum** failing to reach significance as a predictor of **ATTsum** (p = .467) and **SUNsum** (p = .247). Thus, the only relevant mediator is likely to be **PBCsum** (b = .331, p < .001).

In the total effect model with all four variables entered (Table A7.5.13), there is no significant total effect between **PERsum** and **BISsum** (b = -.022, p = .548). In part, this can be attributed to inconsistent mediation (Kenny, 2013b) since the indirect path via **PBCsum** is of negative nature (**PBCsum** negatively affects **BISsum** with b = -.146, p < .001), cancelling out positive direct effects of the same strength. The direct effect between **PERsum** and **BISsum**, however, remains small and insignificant (b = -.029, p = .342), even when indirect effects (and therefore any possibly cancelled-out

³⁰⁹ Effect size for mediation is interpreted less strictly than for direct effects, because an indirect effect is always comparatively small as it is mathematically identical to the product of the two direct effects, i.e. the product of two numbers < 1.</p>

effects) are accounted for. This indicates that there is no direct path between the two variables, i.e. any potential mediation between **PERsum** and **BISsum** is full.

When looking at the individual indirect effect paths of **PERsum** on **BISsum**, **ATTsum** and **SUNsum** display very weak *standardised* effects with CI's including zero in both cases, which is in line with above findings concerning **H4.1** and **H4.2**, meaning it *cannot* be said with 95% certainty that the effects will be different from zero (Field, 2013). Hence, the effects stated in **H4.1a** and **H4.2a**, are evidently so small (if existent) that they must be *rejected*.

In contrast, the negative indirect effect of **PERsum** on **BISsum** as mediated by **PBCsum**, is evident, albeit weak (*b* = -.036, CI ranging from -.054 to -.022). Contrary to the hypothesis, the effect is negative rather than positive, leading to the initial diagnosis that **H4.3a** should be *rejected*. Upon closer inspection, however, the negative effect is attributable to the negative relationship between **PBCsum** and **BISsum**, which has already been addressed with regards to **H1.3** (cf. chapter 7.4.3). Regardless of directionality, the mediational nature of the relationship stated in **H4.3a** is supported by the data, resulting in the conclusion that **H4.3a**, when viewed in light of the findings regarding **H1.3**, can be *confirmed*.

H4.15 IGC negatively affects SEF.

H4.15a There is an indirect negative effect of IGC on BIS, mediated by SEF. In light of the direct effect of IGC on BIS in H4.16, this mediation is partial.

H4.15 can be *confirmed* due to its negative and highly significant coefficient (b = -.170, p < .001). Considering that the direct effect of **IGC** on **BIS** was shown as unsupported (cf. chapter 7.4.3, hypothesis **H4.14**), any mediation found in this test is expected to be full rather than partial. Table A7.5.14 shows that there is no significant direct effect (b = -.016, p = .082). The indirect relationship between the two variables, mediated by **SEFsum**, is of moderate negative strength (b = -.034, CI in the range of -.05 to -.02 with 95% certainty). This is in line with the reasoning for **H4.15a**. Hence, this hypothesis is *confirmed* with the limitation that the mediation is not partial, but full.

7.4.5 Hypotheses related to Moderation Effects

Moderation effects are again analysed applying PROCESS 2.10, which automatically accomplishes the tasks needed to prepare moderation analyses: Variables are centred around zero³¹⁰ to obtain meaningful results for direct effects of the *IVs* (including the moderator) on the outcome. This is useful when no moderation effect is evident because then the moderator can be identified as a predictor (Field, 2013). Further, product interaction terms³¹¹ are automatically calculated, eliminating the need to manually compute additional variables.

H2.5 PAF positively moderates (strengthens) the relation between PBC and BIS.

H4.13 IGC negatively moderates (weakens) the relation between PBC and BIS.

Variables **PAS-03** and **IGCsum** are hypothesised to moderate the relationship between **PBCsum** and **BISsum**. Results presented in Table A7.5.15 show that no variable in this moderated regression (except **PAS-03**³¹²) has a significant effect on outcome **BISsum**. At first glance, this is surprising, since the direct effect of **PBCsum** on **BISsum** was significantly negative (cf. chapter 7.4.3). A possible reason for the inability to reproduce this direct effect may be suppression effects³¹³, possibly caused by a common variance of **PBCsum** with other variables that positively affect **BISsum** and are only present in the full RA model (cf. chapter 7.4.3). When not entered into the moderated regression, the effects cancel each other out, since they are both represented by **PBCsum**, but in the full regression, the positive effect from the other variables is separated from **PBCsum**'s effect³¹⁴. To control for suppression, a second moderated regression was produced (Table A7.5.15a) in which the researcher includes all predictors (Hair & Anderson, 2010). In the new RA

³¹⁰ For example, a variable ranging from 1-7 will range from -3 to +3 after it is centred.

³¹¹ Product of predictor and moderator variable.

³¹² Displayed as V74.

³¹³ When relationships between variables are invisible (suppressed) in a bivariate relationship, but become visible as additional predictors are entered in a regression. Shared variance caused by the additional predictor is removed from the equation and thus, reveals the true effect strength (Hair & Anderson, 2010).

 ³¹⁴ The correlation matrix (Table A7.5.3) reveals that the most likely candidates for the suppressor effect are ATTsum and SUNsum because they correlate positively with PBCsum as well as with BISsum, thereby cancelling out the negative relationship between PBCsum and BISsum.

output, the main effect between **PBCsum** and **BISsum** becomes evident (b = -.113, p < .001), whereas the hypothesised moderating effects of **IGCsum** and **PAS-03** fail to materialise. The interaction terms "int_1" (**PBCsum** x **IGCsum**) and "int_2" (**PBCsum** x **PAS-03**) are both weak and insignificant (b = -.003, p = .900 for "int_1"; b = .012, p = .530 for "int 2"). Therefore, hypotheses **H2.5** and **H4.13** are *not confirmed*.

H3.7 ATT positively moderates (strengthens) the relation between SEF and BIS.

H3.9 PBC positively moderates (strengthens) the relation between SEF and BIS.

A second set of moderators is subjected to analysis for the relationship between **SEFsum** and **BISsum**. In contrast to the previous set of moderators, every predictor in this moderated RA model is significant (Table A7.5.16). This includes the two interaction terms, which both display almost identical strength (b = .067 at p = .042 for "int_1"³¹⁵ and b = .063, p = .015 for "int_2"³¹⁶). Moderating effects of both variables are further illustrated in the conditional effect section of Table A7.5.16 and in Figure A7.5.5: the main relationship (**SEFsum** -> **BISsum**) is virtually non-existent when both moderators are low³¹⁷ (b = .053, p = .289 in the table, purple line in the diagram), while it becomes stronger when one is low and one is high (yellow and green lines, b = .18 and b = .19, p < .005 for both). It is strongest when both moderators are high (b = .320, p < .001, blue line in the diagram). In sum, **H3.7** and **H3.9** should be *confirmed*. However, this analysis also provides a restriction for **H3.6**, since the conditional effect section in Table A7.5.16 shows that the effect of **SEFsum** on **BISsum** is not present when both moderators are low.

H3.11 PBC positively moderates (strengthens) the relation between TRU and BIS.

H4.16 IGC positively moderates (strengthens) the relation between TRU and BIS.

Table A7.5.17 shows that when **PBCsum** and **IGCsum** are specified as moderators for the relationship between **TRUsum** and **BISsum**, the main effect is evident with a highly significant coefficient of b = .239 (p < .001). However, the two interaction

³¹⁵ SEFsum x ATTsum

³¹⁶ SEFsum x PBCsum

³¹⁷ Low, medium and high values of the moderators are defined as the mean plus / minus one standard deviation from the mean (Hayes, 2012).

terms are both low in strength (b = -.01 and b = -.02 for **TRUsum** x **PBCsum** and **TRUsum** x **IGCsum**) and insignificant (p = .796 and p = .782, respectively). Thus, **H3.11** and **H4.16** are *not confirmed*.

H4.11 IGC negatively moderates (weakens) the relation between ATT and BIS.

The relationship between **ATTsum** on **BISsum** is hypothesised to be moderated by **IGCsum**. Table A7.5.18 illustrates that although the direct effect of **ATTsum** is present (b = .671, p < .001), the moderating effect is not evident. Despite the negative direction of the moderator being consistent with the hypothesis, the low coefficient and insignificance of the interaction term **ATTsum** x **IGCsum** (b = .007, p = .836) lead to the result that **H4.11** is *not confirmed*.

H4.12 IGC positively moderates (strengthens) the relation between SUN and BIS.

Lastly, Table A7.5.19 shows that the evident effect between **SUNsum** and **BISsum** (b = .614, p < .001) is not moderated by **IGCsum**, as can be deducted from the low coefficient and insignificance (b = -.014, p = .644) of the related interaction term **SUNsum** x **IGCsum**. The hypothesis is *not confirmed*.

7.4.6 Summary of Results

In sum, **33** hypotheses are tested, of which **18** hypotheses are confirmed (Appendix A7.5, Table A7.5.20). Most direct effect and mediation hypotheses are confirmed, indicating theoretical validity. Given the generally high rejection rate in moderation research (Aguinis, Beaty, Boik, & Pierce, 2005; Kenny, 2013c), the confirmation of two moderation effects is viewed a satisfactory result by the researcher.

7.5 Implementation of the Two-Step SEM Analysis Process

This section marks the start of the SEM analysis. The two-step process separating CFA and SEM-analysis (cf. chapter 7.1) is implemented to deal with the complexities of the PTM (cf. chapter 5). Step 1 covers the specification and testing of the *measurement* model. Step 2 covers the specification and testing of the *structural* model. Following Hair and Anderson (2010), the two-step process is subsequently

separated into six stages (Figure 7.1). Several stages are already covered in earlier parts of this study (cf. chapters 5 and 6). To clarify the tasks that are described in the following sections, an introduction of each stage is provided:



Figure 7.1: Separation of the two-step process into six stages

Defining the Constructs (Stage 1)

Stage 1 is concerned with defining and operationalising the constructs by either using scales from past research or developing new measurement scales. These issues are mostly discussed in chapter 6.4, but an overview is given later in this chapter as an introduction to the model development stage.

Developing the Measurement Model (Stage 2)

The objective is to discuss the requirements and restrictions of any well-specified SEM and to convert the measurement items into a *measurement* model that can be tested and verified.

Designing the Study (Stage 3)

Hair and Anderson (2010) propose a discussion of issues related to research design, e.g., concerning data metrics³¹⁸ and missing data problems. Most of these issues are not specific to SEM and are covered in chapters 6.1 - 6.5 with the exception of missing data treatment, which is discussed in chapter 7.3.

Assessing Measurement Model Validity (Stage 4)

This stage describes CFA results and related statistics of construct *validity*. Further, *reliability* is assessed and subsequent item and construct eliminations are performed based on the *reliability* test results. Lastly, the CFA model is assessed in its entirety with the use of *fit indices* because a well-fitting CFA model is considered a prerequisite for a well-fitting SEM (Hair & Anderson, 2010).

Specifying Structural Models (Stage 5)

Structural models are specified by converting the hypotheses (cf. chapter 5) into a path diagram that can be tested using AMOS. Various options, methodological difficulties and the researcher's decisions for testing the hypotheses are stated at this stage.

Assessing Structural Model Validity (Stage 6)

Lastly, the models are evaluated as a whole and hypotheses are tested. Competing models, possible shortcomings and modifications are discussed in preparation of chapter 8, where a deeper discussion of this study's findings is given.

7.6 Defining the Constructs (Stage 1)

Almost all constructs used in this study are taken from past research (cf. chapter 2) and are verified through the combination of the qualitative study (cf. chapter 4) and quantitative pre-tests (cf. chapter 6.4). From a SEM perspective, the main goal of construct definition is achieving content *validity*, i.e. *face validity*, defined as the

³¹⁸ Refers to the required sample size, MV computations and the remaining data screening applied in chap. 7.3. Hair & Anderson treat Stage 3 as mostly a stage of discussing theoretical and methodological decisions. In the researcher's opinion, however, data screening needs to be a part of this stage, since it has to be available before Stage 4.

extent to which the content of the items is consistent with the construct definition (Hair & Anderson, 2010). The content *validity* of verified constructs is given according to (i) the judgement of the researcher and (ii) two additional expert reviewers (cf. chapter 6.4). Table 7.2 summarises the constructs used in the PTM.

TPB constructs	Sub-constructs of Past Switching
Switching Intention (BIS)	 Past Frequency of Switching (PAF)
 Attitude towards Switching (ATT) 	• Past Experience with Switching (PAE)
• Subjective Norms (SUN)	
Perceived Behavioural Control (PBC)	
P&P Factors	GLOBE Cultural dimensions
Inconvenience (INC)	Power Distance (POD)
Pricing Problems (PRC)	Uncertainty Avoidance (UNC)
• Service Failure (SEF)	In-group Collectivism (INC)
Lack of Trust (TRU)	• Future Orientation (FUT)
	Performance Orientation (PER)

Table 7.2:Constructs used in the PTM (cf. chapter 5)

The route of construct adaptation to the research context is described in chapter 6.

7.7 Development of the Measurement Model (Stage 2)

In order to combine the constructs into a valid *measurement* model, several points are taken into account during the specification.

7.7.1 Unidimensionality

Unidimensional measures are present when all items that are used to measure one construct are explained by only one construct (Hair & Anderson, 2010). This becomes more important as more constructs are involved, since the risk of one construct explaining an item belonging to another construct increases. In terms of model specification, this implies that every item is only allowed to load on one construct, i.e. that all cross-loadings are hypothesised to be zero, or in the AMOS user interface, that each item is only allowed to show one arrow, originating from

the construct it is supposed to measure. Any significant cross-loadings are a sign that the concerned item measures more than one construct, making it statistically impossible to distinguish which of the two constructs is measured. Further, *unidimensionality* implies that error terms of items of different constructs are hypothesised to be unrelated because any significant covariance between such error terms is evidence that the items are more related to each other than expected and therefore do not measure clearly distinguishable things. While it is possible under certain conditions to explore error covariances or cross-loadings in a post-hoc analysis (B. M. Byrne, 2010), it is a crucial element of a well-specified model to start without them because the existence of cross-loadings or cross-construct error covariance would be evidence for a lack of *validity*.

To achieve *unidimensionality* several model parameters need to be defined:

- Cross-loadings are constrained to zero,
- Error covariances between items are constrained to zero.

Measurement models that fulfil these requirements are consistent with good measurement practices (Hair & Anderson, 2010).

7.7.2 Model Identification

The number of items used per construct represents a trade-off because more items per construct can provide maximum *reliability* (Bacon, Sauer, & Young, 1995), but also require larger sample sizes and make it more difficult to retain *unidimensionality* (Hair & Anderson, 2010). This matter is closely related to the issue of *model identification*. In order to produce a unique estimate for each parameter in the model, there must be more observed variances and covariances as there are parameters to be estimated, i.e. there must be positive degrees of freedom $(df)^{319}$ (R. B. Kline, 2005). A model that does not fulfil this condition is

³¹⁹ Value calculated as the total number of observations (variances and covariances) minus the number of estimated parameters (Hair & Anderson, 2010).

under-identified³²⁰, whereas a model with more observed variances or covariances than estimated parameters is over-identified, which is necessary to obtain meaningful SEM estimates (B. M. Byrne, 2010). Therefore, the researcher applies the following recommendations to achieve *model identification* (B. M. Byrne, 2010; Hair & Anderson, 2010):

- Each LV needs to have its scale determined³²¹.
- Within-construct and between-construct error covariance terms should be fixed at zero and not estimated.
- All measured variables should be free to load only on one construct.
- LVs should be indicated by at least 3 measured variables (three-indicator-rule).

The first three recommendations are specified in the AMOS input for this SEM analysis (Appendix A7.3, Figure A7.3.1; Appendix A7.4, Figures A7.4.1 and A7.4.2). However, the last one is not consistent with this researcher's measurement of *past switching*, which he split into two sub-constructs **(PAE, PAF)** with only two variables each. This raises the question whether *model identification* is still assured.

There are two ways to respond: First, in addition to the three-indicator-rule, there is also a commonly referred two-indicator rule (Kenny, 1979; O'Brien, 1994), which is also used in studies such as Bansal (1997), who applies only two measured variables for **SUN**. The two indicator rule states that a construct with two indicators with significant factor loadings is identified as long as the construct is correlated to another construct in the model and error terms of the indicators are not correlated between and within constructs. Both of these aspects are incorporated in this researcher's CFA model specification.

Second, using only one item for *past behaviour* seems to be a common practice due to the quantitative nature of measuring the frequency of past behaviour incidents.

³²⁰ Or just-identified, in which case there is a solution, but there are zero *df*, meaning that no alternative solutions are possible and the model can therefore not be rejected. Such a model is not appropriate for theory testing (B. M. Byrne, 2010).

³²¹ Under-identification arises when no measurement scale is assigned to *LV*s (R. B. Kline, 2005). In this study, measurement scales are assigned according to standard practices and recommendations in the AMOS user guide (Arbuckle, 2012).

This is confirmed by a significant number of studies that integrate *past behaviour* with only one item e.g., Rhodes and Courneya (2003), Phetvaroon (2006) and C. L. Wong and Mullan (2009). Third, *df* can be calculated to assess *model identification*.

AMOS can be used to make this calculation, since the inability to obtain unique estimands³²² from an unidentified model will cause it to warn the researcher when trying to calculate *model fit* (Arbuckle, 2012). Despite being useful, the test for *model identification* does not fully substitute a prior assessment of the identification issue (Arbuckle, 2012). This researcher therefore calculates *df* by hand before testing the model with AMOS. As stated earlier, a model is identified when the number of total observed variances or covariances is larger than the number of parameters to be estimated (R. B. Kline, 2005). The number of total observed variances or covariances in this study, whereas the number of estimated parameters is **255**³²⁴, resulting in *df* = 2,850 – 255 = **2,595**. Since this number is larger than zero, there are no concerns for *model under-identification* in the CFA. Based on these insights, the *measurement* model is defined (Appendix A7.3, Figure A7.3.1).

7.8 Designing the Study (Stage 3)

The process of designing the study, including LRs, qualitative and quantitative pretests, designing the RI, calculating the required sample size for the main survey, RI operationalisation, data cleaning and *MV* treatment, are described in detail throughout chapters 6 and 7.3.

³²² AMOS-specific term for estimated parameters (Arbuckle, 2012).

³²³ Calculated as p(p+1)/2, whereby the *p*-value represents the number of *OV*s in the model. For the PTM, the total number of observed variances and covariances is 75(75+1)/2 = 2,850.

³²⁴ In the CFA model for this study, there are 15 *LV* variances, 75 error variances (one for each item), 60 regression weights (one for each item minus the 15 reference variables, which are constrained to 1 and therefore not estimated) and 105 covariances (one between each *LV* and every other *LV*: 15 * 14/2), adding up to 15+75+60+105 = 255 parameters (Arbuckle, 2012).

7.9 Assessing Measurement Model Validity (Stage 4)

7.9.1 Goodness of Fit

Overall model fit (cf. chapter 7.3.2) is assessed with the following goodness-of-fit (GOF) indices³²⁵: model χ^2 and RMSEA as *absolute* fit indices (FIs), and the comparative FI (CFI) as a relative FI. These choices follow recommendations of Hair and Anderson (2010) to report at least one absolute and one relative FI in addition to the model χ^2 . It is also aligned with simulation studies that show higher probabilities of detecting mis-specified models when following this recommendation e.g., Hu and Bentler (1999). In addition, RMSEA and CFI are confirmed in meta-studies to be the most broadly accepted indices in the field of SEM (McDonald & Ho, 2002).

AMOS results and implications for the next steps of the analysis are briefly discussed:

The Bollen-Stine χ^2 is a *bootstrapped* variant of the model χ^2 (Bollen & Stine, 1990; Bollen & Stine, 1992), which is the most basic *fit* statistic and used in this study. χ^2 is based on the discrepancy of the *observed* data structure from the data structure that is specified in the researcher's model. The χ^2 statistic is associated with a *pvalue* that signifies whether or not the model represents the data adequately with a significant result indicating a lack of *fit* and therefore leading to the rejection of the model. However, the χ^2 statistic has two major flaws: it assumes that *perfect fit* of the SEM in the population is better, which means that in comparing two nested models, the more complex model is always better than the simple model, violating the epistemological preference for parsimony. It is also dependent on the number of cases in the dataset and tends to measure worse *fit* when the sample size grows (B. M. Byrne, 2010), leading to an over-sensitivity of this test for bigger sample sizes

³²⁵ Cf. McDonald & Ho's (2002) meta-study. More reasons: GFI (Goodness-of-Fit Index) is outdated and considered inferior to RMSEA. SRMR (Standardised Root Mean Residual) is similar to RMSEA, but more difficult to interpret and less widespread. NFI (Normed Fit Index) is outdated, whereas CFI is an improved version of NFI. TLI (Tucker-Lewis Index) is often used and recommended, but it is not normed and no COVs exist, which makes it more problematic to interpret than CFI.

and thus, requires the use of additional *fit* indices (Blunch, 2008; B. M. Byrne, 2010; Hair & Anderson, 2010; R. B. Kline, 2005).

RMSEA has become one of the most popular FI for SEM applications (B. M. Byrne, 2010; R. B. Kline, 2005; McDonald & Ho, 2002). Similar to χ^2 , it is an *absolute badness-of-fit*³²⁶ measure, meaning it provides an evaluation of how well the specified model fits the observed data. Its aim is to account for the weaknesses of χ^2 by including parsimony and sample size into its calculation³²⁷ (Hair & Anderson, 2010). RMSEA takes on values between 0 and 1 with lower values indicating better *fit*. Recommended COVs are .05 for good *fit* and .08 for adequate *fit* (Browne & Cudeck, 1993; Hu & Bentler, 1999). RMSEA is linked to a CI to assess the accuracy of the estimate (Steiger, 1990), which allows to estimate the model's *fit* to the population, not just to the sample. By default, the CI is specified at 90%³²⁸ in AMOS and most other SEM tools (Arbuckle, 2012).

The *comparative* FI (CFI) is possibly the most widely reported FI (McDonald & Ho, 2002). It is fundamentally different from χ^2 and RMSEA in that it is a comparative, i.e. incremental or relative FI. Thus, it does not assess the model in regard to the population, but in comparison to alternate models. The CFI is an improved version of the *normed* FI (NFI) (Bentler, 1990; Bentler & Bonett, 1980) as it takes parsimony into account. Evaluation of the model is based on a comparison between the specified model and the independence model³²⁹. Thus, the CFI indicates how much better the specified model is than the independence model in portraying the structure of the sample data and accounts for parsimony by penalising every parameter, i.e. every estimated path coefficient, covariance or variance, that is

³²⁶ Due to the fact that higher values of χ^2 indicate a higher discrepancy between predicted and observed values, which means a worse *fit*, the model χ^2 is also referred to as a *badness-of-fit* index (R. B. Kline, 2005).

³²⁷ RMSEA = $\sqrt{\frac{(\chi^2 - df)}{N-1}}$. Subtraction of *df* from the χ^2 accounts for parsimony, sample size is taken into account in the denominator.

³²⁸ For example, RMSEA of .05 would normally be interpreted as good, but if the CI ranges from 0 to .10, then it cannot be said with 90% certainty that RMSEA is below the COV of .08 (since it could take on values up to .10) and the hypothesis of poor *fit* cannot be rejected.

³²⁹ A model assuming zero covariances between the *OV*s in the population (Arbuckle, 2012; Bentler, 1990).

added (Kenny, 2013a). It takes on values between 0 and 1 and its COV for large samples (N > 500) is recommended to be .90 (Bentler, 1990; Hair & Anderson, 2010; R. B. Kline, 2005), with higher values indicating better fit than lower values.

Table 7.3 contrasts three FIs in the model with all **75** variables (*measurement* model of the PTM) and the final CFA model³³⁰.

Fit Index	Value	Model with	CFA	CFA
		all variables		
		(75 items)	(34 items)	(32 items)
Model chi-square	df	2,595	492 ³³¹	429
	χ^2	10,391	633 ³³²	554
	p	.000	.001	.001
		(poor fit)	(poor fit)	(poor fit)
RMSEA	RMSEA	.046	.054	.052
	<i>LO</i> 90 ³³³	.045	.052	.050
	HI 90 ³³⁴	.047	.056	.054
		(close <i>fit</i>)	(adequate <i>fit</i>)	(adequate <i>fit</i>)
CFI	CFI	.766	.903	.916
		(poor fit)	(close fit)	(close fit)

Table 7.3: Fis (before / after CFA) and measurement model (source: AMOS).

While results for the model with all variables appear unsatisfactory, with two out of three FI rejecting the model, they are within the realm of what should be expected: χ^2 statistics tend to reject nearly any model for sample sizes > 200 (Garson, 2013; R.

³³⁰ Different item counts refer to different stages of the model: 75 before validity tests, 34 after validity tests and 32 after additional model diagnostics (cf. chapter 7.9.2).

³³¹ The number of total variances and covariances in the final model is $\frac{p(p+1)}{2} = \frac{34(34+1)}{2} = 595$. There are 9 *LV* variances, 33 error variances (one for each item, except PAS-03, which is a single-item measure in the final model and therefore its error variance is constrained to 0), 25 regression weights (one for each item minus 9 reference variables, which are constrained and therefore not estimated) and 36 covariances (one between each *LV* and every other *LV*: 8+9/2), adding up to 9+33+25+36 = 103 parameters. *Df* for this model add up to 595-103 = 492.

 $[\]chi^{2}$ -values reflect the mean of the bootstrapped ML-discrepancy (implied vs. sample) of 1,000 Bollen-Stine-bootstrap samples. The *p*-value is associated with the Bollen-Stine-bootstrap.

³³³ Lower bound of 90% CI

³³⁴ Upper bound of 90% CI

B. Kline, 2005) and are therefore of little value at this point³³⁵. CFI, on the other hand, imposes a penalty for large numbers of parameters, which is of high relevance for the PTM in this study. As shown by the CFI value of the 32 item model, the high complexity in the model including all variables negatively affects the CFI, but the reduction of variables (done as part of *validity* testing, cf. chapter 7.9.2) cures this problem and raises the CFI from .766 to .916. The results for the two reduced models appear satisfactory.

7.9.2 Construct Validity

While *fit* indices are a good way to assess the entire theoretical model, they do not measure whether or not every part of the model is well-specified and valid (Kenny, 2013a; R. B. Kline, 2005). Thus, a poorly specified model with unreliable and theoretically unsupported constructs can still have a good *fit* (Tomarken & Waller, 2003) because *fit* indices only indicate the average *goodness* of a given model. Thus, an in-depth analysis of the model is mandatory when testing a theory with SEM. For CFA, this means a thorough evaluation of the different aspects of *construct validity*, namely *convergent*, *discriminant* and *nomological validity*. Their analysis can then be refined with a final evaluation of model diagnostics, such as residuals and modification indices (Hair & Anderson, 2010).

7.9.2.1 Convergent Validity

Statistically, *convergent validity* translates into the concepts of *factor loadings* on the item side and *reliability* on the construct side, which shall be reported at this point. *Standardised* and *unstandardised* factor loadings for the *measurement* model of the PTM are illustrated in Appendix A7.3, Table A7.3.1). Items that are insignificant and / or those with factor loadings falling below the COV of .5 (Anderson & Gerbing, 1988) in the initial CFA are considered to lack *convergent validity* and are excluded from further analysis. This leads to the immediate deletion of **23** out of **75** items used in the CFA and three more items (**SEF-05, SEF-06, SEF-07**)

³³⁵ Nevertheless, it is considered standard practice to report the χ^2 statistic because it is the basis for most other *fit* statistics (Hair & Anderson, 2010; R. B. Kline, 2005).

in the process of *MV* treatment (cf. chapter 7.3.1 and / or Table 7.3.1b). Assessments of *convergent validity* on the constructs' end are based on three measures: *Cronbach's alpha* (CA), *composite reliability* (CR³³⁶) and *average variance extracted* (AVE³³⁷) (Fornell & Larcker, 1981; Hair & Anderson, 2010). Values of CR and CA usually yield similar results, making it possible to substitute one for the other (Peterson & Kim, 2013). Reporting both values at this point is done for practical reasons³³⁸. None of the three (CA, CR, AVE) can be computed by AMOS³³⁹, hence CR and AVE are computed manually³⁴⁰ in spreadsheet software Microsoft Excel, while CA is obtained from SPSS. Results for CA, CR and AVE are displayed in Appendix A7.3, Tables A7.3.4 and A7.3.5³⁴¹.

Looking at CA and CR, results show in both cases that out of **15** constructs (cf. chapter 7.6), **8** perform insufficiently at a COV of .7 (Field, 2005; Hair & Anderson, 2010) in the *measurement* model of the PTM. This is largely consistent with results concerning factor loadings (see previous paragraph and Table A7.3.1), where items of said constructs show the poorest average performance. A look at AVE values, however, shows worse overall performance than CA and CR in the *measurement* model of the PTM, with only **3** out of **15** constructs meeting the COV of .5 (G. R. Norman & Streiner, 2003). After deleting items with insufficient loadings, constructs with item counts below **3** are excluded from the analysis because this is a threat to model identification (cf. Chapter 7.7.2).

Among the remaining constructs, CA of **SUN** improves from .64 to .70 (.68 to .73 for CR), making it reliable enough for inclusion into the model. *Reliability* of other

³³⁶ CR is similar to CA, the main difference being that it is computed from factor loadings rather than item correlations.

³³⁷ AVE is the mean variance extracted for all items of a construct (variance extracted being the percentage of variance in the item explained by the factor).

³³⁸ CA was more suited for the exploratory phase during pre-tests, so it is reported in order to achieve comparability with pre-test results. CR is easy to compute and more common among SEM studies.

³³⁹ Because AMOS does not have these functions.

³⁴⁰ AVE = $\frac{\sum_{i=1}^{n} L_i^2}{n}$. L represents the standardised factor loading of an item, n is the number of items and $(\sum_{i=1}^{n} L_i)^2$

i the number of a single item. CR = $\frac{(\sum_{i=1}^{n} L_i)^2}{(\sum_{i=1}^{n} L_i)^2 + (\sum_{i=1}^{n} e_i)}$ "e" represents the error variance of an item.

³⁴¹ Table A7.3.4, column "After second survey round".

constructs improves as well, but not sufficiently to allow inclusion into the model. As a consequence, **6** constructs (**FUT**, **POD**, **UNC**, **PAE**, **PRC**, **INC**) are excluded from further analysis.³⁴² AVE values largely confirm the *validity* of the remaining constructs. AVE values for **PBC** and **SUN** (.4 for both) are slightly below the COV and could have been improved by eliminating one additional item each. In view of their closeness to the COV, the researcher decided not to remove them from the model in favour of a higher content *validity* of the construct³⁴³ (Hair & Anderson, 2010).

To conclude, the *measurement* model is reduced to **9** constructs and **34** items and tested again. Factor loadings and *reliability* are re-confirmed in the reduced *measurement* model (Appendix A7, Table A7.3.7) and with estimated *bootstrapped* estimates, including CIs of 90% for factor loadings. *Validity* of the final *measurement* model is confirmed, since all factor loadings are highly significant (p < .005) below the COV (.45) at the specified 90% CI. The only exception is item **SUN-04**, which shows an acceptable estimate of .48, but a lower bound value of .43 which is slightly below the COV (upper bound value .52). This researcher deems this as acceptable, since the upper bound value is clearly above the COV.

A special case is sub-construct **PAF**. Instead of removing it from the analysis due to low *reliability*, it can be treated as a single indicator variable with a known measurement error that is fixed at zero. The measurement error is deemed negligible (Hair & Anderson, 2010) in light of the fact that item **PAS-03** basically measures the exact amount of times an individual has switched in the past. This is also in accordance with **PAS** measurements in previous studies (Bansal, 1997; Phetvaroon, 2006; J. R. Smith et al., 2008). In sum, *convergent validity* testing leads to a *measurement* model with **8** constructs, **1** single-item measure and **34** items.

³⁴² This researcher applied a novel, yet to be tested measurement for some constructs, especially UNC (cf. chapter 6.4). Said constructs were measured with items from different sources in an attempt to achieve an acceptable level of reliability after they failed to meet this researcher's benchmarks throughout the pre-test stages.

³⁴³ Concerned items, capturing essential aspects of the underlying construct, are deemed necessary to maximise content *validity* (cf. chapter 7.6).

7.9.2.2 Discriminant Validity

Discriminant validity is given when each construct is truly distinct from other constructs in the model. It is, to some extent, already tested within the scope of *multicollinearity* (cf. chapter 7.3.3) because an exceptionally high correlation between two constructs implies a lack in *discriminant validity*. However, in testing a *measurement* model, *discriminant validity* should be established in a relative fashion, i.e. by verifying that the relationships between the items of a construct are stronger than the constructs relationship with other constructs. The most rigorous way to do this is to ensure that the AVE values of two constructs are always higher than the squared correlation between those constructs (Fornell & Larcker, 1981; Hair & Anderson, 2010). Cross-tabulations (Appendix A7.3, Table A7.3.6) show that initially, **9** out of **15** constructs lack *discriminant validity*, with squared correlations exceeding AVE values.

In the reduced *measurement* model, however, only two constructs (**IGC**, **SUN**) pose a minor problem, with squared correlation **IGC** \leftrightarrow **PER** exceeding **IGC**'s AVE by .049 and **SUN** \leftrightarrow **ATT** exceeding **SUN**'s AVE by .033. However, those values are considered acceptable since *discriminant validity* is additionally supported by (i) the fact that the *measurement* model has a good *fit* without containing cross-loadings or correlated error terms and by (ii) absolute correlation values, which do not show *multicollinearity*. Since the comparison of squared correlations and AVE gives the most conservative estimate of *discriminant validity* possible (Hair & Anderson, 2010), above results are interpreted to support *discriminant validity* for the *measurement* model.

The AVE values of constructs **SUN** and **IGC** were initially close to, but slightly below the squared correlations of said constructs with the constructs **ATT** respectively **PER**. This means that more variance in those constructs is explained by another construct than by their items. However, this issue was resolved for **SUN**, whose squared correlation with ATT drops below the AVE of SUN after model diagnostics are performed (Appendix A7.3, Table A7.3.8). The issue remains debatable for IGC, whose squared correlation with PER is .581, which is slightly above its AVE of .532 (Appendix A7.3, Table A7.3.8). The researcher concedes that this may be unacceptable by some standards, but argues that in his case this minor diversion from the Fornell & Larcker (1981) criterion is acceptable because:

- a) No multicollinearity is indicated in the model (cf. chapter 7.3.3), meaning that the constructs are not overly correlated, and the absolute cut-off value (AVE > .5) is exceeded by IGC, meaning that convergent validity of the construct is not a concern (cf. chapter 7.9.2.1) and that its items are sufficiently strong in explaining the IGC construct. The combination of multicollinearity and convergent validity tests is indicative of the fact that IGC is both sufficiently separated from other constructs and consistent enough in itself to provide a basis for model testing.
- b) The Fornell & Larcker (1981) criterion is commonly described as the most conservative test of discriminant validity (Hair & Anderson, 2010), whereas usually only AVE values and / or multicollinearity statistics are reported and considered as sufficient.
- c) The Fornell & Larcker (1981) criterion has no *p*-value and thus, no means of determining the probability of type II errors. Hence, in the opinion of the researcher, values that are very close to each other should be interpreted less strictly than values that are far apart. The difference between the given values (.581 and .532) is only .049, which the researcher views as a very low value.
- d) From a theoretical standpoint, it is plausible that a construct, such as IGC, is relatively broad by its nature and therefore, shows a relatively low AVE, but is nevertheless very strongly correlated with another construct, in this case PER. However, this does not mean that PER related items provide a better measurement for IGC than the items of IGC itself. Their content refers to *performance orientation* and not to *in-group collectivism*, which means that they do not have any content validity for IGC and cannot possibly be seen as a reason to question the validity of IGC (cf. chapter 7.6). A high correlation, however, is theoretically plausible since cultural dimensions often reflect a socialisation that affects more than one cultural dimension at once. Provided all

other measurement properties are satisfactory, and a sound theoretical explanation can be provided, it is therefore considered by this researcher to be an acceptable and sometimes unavoidable trade-off to forego the Fornell & Larcker (1981) criterion and to accept a construct that is more strongly related to another construct than itself, when the construct appears to add great value to the theory.

e) With almost no changes, both IGC and PER measurements are adapted from the GLOBE study, a well recognized piece of research that applied these two constructs together in different contexts. This increased this researcher's confidence in his decision.

7.9.2.3 Nomological Validity

Nomological validity is given if correlations among constructs in a measurement model make sense in theory (Hair & Anderson, 2010). A correlation matrix for **9** constructs (including **PAF**) and **34** items is outlined in Appendix A7.3, Table A7.3.9. Each of the constructs is hypothesised to have a direct positive influence on **BIS**. While three of the correlations (**IGC**, **PBC**, **PER**) lack the significance to be indicative towards or against this claim, the significant correlations of five constructs are in accordance with the theory developed previously (cf. chapter 5.5).

Further, hypothesised relationships that cannot be assessed due to the lack of significance are ATT \leftrightarrow PER, PER \leftrightarrow SUN and PAF \leftrightarrow PBC. On the other hand, the remaining relationships ATT \leftrightarrow PAF, ATT \leftrightarrow TRU, ATT \leftrightarrow SUN, PBC \leftrightarrow PER, PBC \leftrightarrow TRU (negative), IGC \leftrightarrow SEF (negative) are all in accordance with theoretical reasoning. Correlation PER \leftrightarrow IGC (.76, *p* < .001) stands out as very high despite not being part of the PTM. However, since it does not contradict the theory in any way, it poses no threat to *nomological validity* and is therefore discussed further when the *structural* model is tested (cf. chapter 7.11). In sum, *nomological validity* is confirmed for the *measurement* model.

7.9.2.4 Model Diagnostics and Findings

Model diagnostics are best used in the CFA context as an additional aid to address problems that are already identified e.g., the low AVE of **PBC** and **SUN** (Hair & Anderson, 2010). In fact, some researchers consider the over-use of *model diagnostics* to be the end of any confirmatory approach and the beginning of an exploratory analysis, especially when added parameters are freed up that were initially not part of the model (B. M. Byrne, 2010). The researcher will refrain from doing that to adhere to his goal of testing a theoretical model, but use *model diagnostics* to assess measurement model *validity*.

AMOS produces two types of *model diagnostics*: *standardised residuals* and *modification indices*:

- i. Standardised residuals are scale-independent indicators of how far observed covariances deviate from the ones implied by the model. Since these values refer to observed covariances, they are only available for OVs (not for LVs). Looking at standardised residuals for the proposed measurement model with 34 remaining items (Appendix A7.3, Table A7.3.11), it is clear that several values exceed the *red flag* value of [4]. However, this benchmark is not to be used as a rigid COV, but rather as a pointer to the most mis-specified parts of the *measurement* model, because large residuals can be expected to a certain extent as a result of sampling error (Hair & Anderson, 2010). Nevertheless, a closer look at the concerned variables reveals that among the ones with the highest residuals are V34 and V35, both of which relate to the less favourably performing SUN and PBC constructs and, in addition, show sub-standard factor loadings during the convergent validity test. Before a final conclusion can be drawn about how to proceed with those two variables, modification indices, the second type of model diagnostics, are discussed.
- ii. *Modification indices* (MIs), designating progress in the model χ^2 if an additional parameter is freed up (R. B. Kline, 2005), are illustrated in Appendix A7.3, Table A7.3.12. The table is ordered by magnitude of MIs to aid the process of starting

with the largest value (Jöreskog, 1993). Only values for direct paths are shown here, since all covariances between *LV*s are, by default, free parameters in every CFA model. Again, **V34** and **V35** appear often in the list and therefore count among the problematic variables, since large MIs between these items and other constructs (e.g., **V34** and **ATT**, or **V35** and **BIS**) indicate substantial cross-loadings, jeopardising *discriminant validity*. A conspicuous item, both in terms of *standardised residuals* and MIs, is **V38** (part of **BIS**). The MI for a direct regression path (arrow) between **V38** and **SUN** is the highest in the table with a predicted χ^2 improvement of 139 and an expected factor loading of .448. This indicates a cross-loading between **V38** and **SUN**. The item's residuals support this concern with high values (exceeding the *red flag* of |4|) for **V38** - **V35** and **V38** - **V33** (both part of **SUN**).

In sum, findings support the removal of items **V34** and **V35** due to their moderate performance in previous results, i.e. *convergent validity* and *reliability*. **V38**, however, is not considered as problematic because its predicted cross-loading is expected to drop after the removal of **V35**. Further, it belongs to **BIS**, which had no problems in any of the *validity* tests. The researcher excludes items **V34** and **V35** from the *measurement* model, after ensuring that content *validity* remains intact.

Before testing the *structural* model, the removal of items calls for renewed tests of the *measurement* model. The renewed computation of FI, *standardised* factor loadings, CR and AVE scores, *discriminant validity* statistics and construct correlations (Tables A7.3.3, A7.3.5, A7.3.8, A7.3.10; FI are reported in Table 7.3) leads to the following conclusions: the removal of items V34 and V35 improves the *measurement* model in several ways. Not only are FI improved, but also remaining *validity* concerns are resolved. Related constructs **SUN** and **PBC** have almost unchanged CR scores, and AVE scores rise above the COV for *convergent validity* (from .4 to .5 for both **PBC** and **SUN**). Furthermore, removal of V35 reduces the correlation between **SUN** and **ATT**, meaning **SUN**'s AVE is now higher than all of its

other *bivariate* correlations with other constructs, supporting *discriminant validity* for this construct. *Nomological validity* remains unaffected³⁴⁴.

Consequently, all items and constructs meet the rigid COVs imposed by this researcher. A single, but acceptable exception remains **IGC**, which is below the COV for *discriminant validity*, but performed well in all other aspects. The final *measurement* model with **9** constructs and **32** items is illustrated in Appendix A7.3, Figures A7.3.3 and A7.3.4 as well as Figure 7.2 below.



Figure 7.2: CFA model with theoretical background of constructs (32 items, 9 constructs; source: AMOS)

³⁴⁴ The correlation between PAF and PBC, hypothesised to be positive, was significantly negative in the modified model with 32 items. However, the correlation value of -.065 was low and could be interpreted as trivial (Hair & Anderson, 2010).

7.10 Specifying Structural Models (Stage 5)

Based on the *measurement* model, the objective of this section is to convert the theory into a *structural* model. This process identifies the direct effects implied in the theory and changing the covariances between the concerned *latent* constructs in the *measurement* model to single-headed, directional arrows. As a further consequence, *endogenous* constructs in the model are specified to include an error term because they are considered to be causally explained by their predictors, but not in full (Hair & Anderson, 2010; R. B. Kline, 2005). In order to decide which variables are to be specified as *endogenous*, refer to the hypotheses in chapter 5 and Appendix A5, Figures A5.1 – A5.3.

7.10.1 Foundational Theoretical Model (Model A)

The first *structural* model (Model A) is an illustration of the FTM of this study, with all constructs borrowed from the TPB. The analysis is therefore limited to hypotheses which connect the three predictors **ATT**, **SUN** and **PBC** to the outcome **BIS**. According to the researcher's LR, all hypotheses labelled **H1** (cf. chapter 5.1) are included in this FTM (Appendix A7.4, Figures A7.4.1 and A7.4.1a).

7.10.2 Proposed Theoretical Model (Model B)

The main model for this researcher is the PTM, which is partially represented in *structural* Model B, with only the moderation effects not yet included³⁴⁵. For the specification of Model B, alterations of the PTM that were made during the validation of the *measurement* model are taken into account (cf. chapter 7.9). In effect, the new version of the model includes all hypotheses that hold relevance for the given *measurement* model, i.e. that include constructs which are not dismissed during the CFA. Again, moderation hypotheses (cf. chapter 7.11.5) are excluded because they are analysed by using multiple group analysis and therefore are not specified in the path diagram (Hair & Anderson, 2010; Sauer & Dick, 1993). The

³⁴⁵ Moderation effects cannot be specified as part of a *structural* model (cf. chapter 7.11.5).

proposed Model B is tested with all direct and indirect effects expressed in these hypotheses (Appendix A7.4, Figure A7.4.2 and A7.4.2a).

7.11 Assessment of Structural Model Validity (Stage 6)

7.11.1 Interpretational Confounding

When adopting the CFA constructs to the *structural* model, two different arguments are to be considered (Hair & Anderson, 2010): one line of reasoning suggests that factor loadings and error variance terms are already known from the CFA and should therefore not be allowed to be estimated as free parameters when the SEM is estimated. Consequently, those parameters are fixed before the *structural* model is tested. The argument in favour of this approach is that concerned values should be the same in the CFA and the SEM because any deviation would represent an instance of *interpretational confounding*, i.e. a situation where factor loadings and error variances in SEM change when the structure between the *LVs* changes (Hair & Anderson, 2010)³⁴⁶. However, the disadvantage of this approach is that it does not allow the researcher to differentiate between problems of *model fit* that lie within the *measurement* model and issues that relate to the *structural* model because the measurement part of the latter is not analysed.

Therefore, a second line of reasoning suggests that the *measurement* model should be estimated again along with the *structural* model. This allows the researcher to detect and examine issues of *interpretational confounding*, instead of assuming their absence (as it is done in the first approach). An additional advantage of this approach is that it is simpler and less error-prone because there is no need to go through each individual factor loading and error variance term to fix it manually. This line of reasoning will be applied in this study.

In order to take advantage of this approach, factor loadings for CFA and SEM shall be briefly compared. Appendix A7.4, Table A7.4.7 shows factor loadings in the SEM

³⁴⁶ This is undesirable since measurement properties such as factor loadings of *OV*s are expected to be independent from the relationships between *LV*s.

and illustrates differences to the estimates obtained in the CFA (replicated from Appendix A7.3, Table A7.3.3). The highest difference of .010 is observed for item **V06**, which drops from .501 to .511. Since this drop is below the recommended maximum of .05 (Hair & Anderson, 2010), results indicate that there is no *interpretational confounding* and the *measurement* model is not dependent on the specified *LV* structure.

7.11.2 Structural Model Goodness of Fit

Establishing *Goodness-of-Fit* (GOF) for the *structural* models works in the same manner as for the CFA model. Table 7.4 outlines a comparison of SEM related *fit* statistics and CFA values (cf. chapter 7.9.1, Table 7.3).

<i>Fit</i> Index	Value	CFA	Model A	Model B
		(32 items)		
Model chi-square ³⁴⁷	df	429	99	443
	χ^2	554	133	571
	p	.001	.001	.001
		(poor <i>fit</i>)	(poor <i>fit</i>)	(poor <i>fit</i>)
RMSEA	RMSEA	.052	.081	.055
	LO 90	.050	.076	.053
	HI 90	.054	.085	.057
		(adequate <i>fit</i>)	(poor <i>fit</i>)	(adequate <i>fit</i>)
CFI	CFI	.916	.902	.904
		(close fit)	(close <i>fit</i>)	(close <i>fit</i>)
<i>R</i> ² of BIS	R^2	N/A	.32	.33
	Lower	N/A	.26	.27
	Upper	N/A	.38	.38
	p-value	N/A	.004	.006

Table 7.4:FIs after CFA and *structural* model (source: AMOS).

FIs in the *structural* models are expected to be less good than in the CFA model because in the CFA model, all constructs are allowed to correlate freely, whereas the *structural* models are more constrained, i.e. some constructs are specified to have no relationship with each other (Hair & Anderson, 2010). However, if a

 $^{^{347}}$ χ^2 -values reflect the mean of the bootstrapped ML-discrepancy (implied vs. sample) of 1,000 Bollen-Stine-bootstrap samples. The *p*-value is associated with the Bollen-Stine-bootstrap.

structural model fits substantially worse than the CFA model, it can be concluded that the structural theory lacks validity (Anderson & Gerbing, 1992). Fit statistics for the structural models suggest good fit and theoretical validity because results are slightly, but not substantially worse than the CFA results³⁴⁸. COVs for the *structural* model are the same as for the CFA model, and thus should not drop below a COV of .90 for CFI or above a COV of .08 for RMSEA, respectively. Both COVs are met by Model B, whereas Model A needs to be interpreted with caution due to a poor RMSEA fit of .081.

7.11.3 Model A Validity

When establishing validity of the structural model and incorporated hypotheses, estimated parameters must meet three criteria to confirm a hypothesis: nontriviality³⁴⁹, significance and having the predicted direction e.g., negative effects should display a negative factor in the estimated model (Hair & Anderson, 2010).

H1.1 ATT positively affects BIS.

Appendix A7.4, Table A7.4.3 shows that the *standardised*³⁵⁰ estimate for this path has a 90% CI between .41 and .57 (p = .003). A moderate effect between the two constructs is *confirmed* for this model.

SUN positively affect BIS. H1.2

With a weak effect of .12 (significant CI from .03 to .21, p = .029), this hypothesis is confirmed, with the limiting remark that the lower bound is very low and therefore the effect strength may be trivial.

PBC positively affects BIS. H1.3

³⁴⁸ The strategy of comparing *model fit* for CFA and SEM applies only when comparing models with the same measurement structure. In this case, this refers to the CFA model and Model B only, since Model A has a different number of measured constructs.

³⁴⁹ The effect size can be considered as relevant in light of the hypothesised theoretical relationship.

³⁵⁰ All SEM related effects are standardised.

The estimated effect of **PBC** on **BIS** has a weak negative value of -.16 and is highly significant (p = .002) at a 90% CI between -.22 and -.11. However, the negative sign leads to the conclusion that this hypothesis must be *rejected*.

H1.4 SUN positively affect ATT.

SUN is found to have a moderate to strong effect of .64, which falls into a CI between .59 and .69 with 90% certainty at a significance of p = .003. As a result, this hypothesis is *confirmed*.

H1.4a SUN have an indirect positive effect on BIS, mediated by ATT. In light of the direct effect of SUN on BIS in H1.2, this mediation is partial.

The indirect effect (Appendix A7.4, Table A7.4.4) in the model is highly significant with p = .002. Its value is estimated at a moderate strength of .32 (CI from .26 to .38) and subsequently the mediating effect is *confirmed*. Due to the possibly *trivial* strength of the direct effect between **SUN** and **BIS** (as stated in **H1.2**), the mediation could be partial or full.

7.11.4 Model B Validity

H1.1 ATT positively affects BIS.

The AMOS output (Appendix A7.4, Table A7.4.3) for the *standardised* direct path between **ATT** and **BIS** shows a moderate positive strength of .47, with a *bootstrapped* 90% CI from .39 to .55, which is highly significant with p = .002. Thus, the hypothesis is *confirmed*.

H1.2 SUN positively affect BIS.

The path estimate from **SUN** to **BIS** is weak with an estimate of .08 and a CI from -.01 to .16. These estimates are non-significant with p = .146, leading to an inability to reject the null hypothesis because there is no direct relationship between the two constructs at a significance level of p < .05. The hypothesis is *not confirmed*.

H1.3 PBC positively affects BIS.

With a highly significant, weak direct path estimate of -.12 and a CI from -.17 to -.06 (p = .002), the null hypothesis is rejected. However, the directionality of the effect presents a negation with the hypothesised effect. Thus, the hypothesis is *rejected*.

H1.4 SUN positively affect ATT.

This direct effect is estimated to be strong at a value of .62 and a CI from .56 to .67. This estimate is highly significant (p = .003), leading to the conclusion that the hypothesis is *confirmed*.

H1.4a SUN have an indirect positive effect on BIS, mediated by ATT. In light of the direct effect of SUN on BIS in H1.2, this mediation is partial.

For indirect effects, the matrix output provided by AMOS is summarised in Appendix A7.4, Table A7.4.4. With a highly significant estimate of .29 and a CI from .24 to .36 (p = .002), indirect effects of **SUN** on **BIS** are *confirmed*. In light of the lack of evidence for a direct effect of **SUN** on **BIS** (H1.2), the mediation is considered to be full rather than partial.

H2.1 PAF positively affects BIS.

Results suggest a weak effect of **PAF** on **BIS**. The estimate is .08, i.e. just above the threshold for *non-triviality* (Hair & Anderson, 2010). CI values indicate a highly significant range of .04 to .12 at p = .002. Thus, the given hypothesis is *confirmed*.

H2.3 PAF positively affects ATT.

PAF has a highly significant (p = .003) influence on **ATT**, at a weak strength of .10 and a CI from .05 to .15. The hypothesis is *confirmed*.

H2.3a PAF has an indirect positive effect on BIS, mediated by ATT. In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.

Partial mediation for this indirect effect is supported by a highly significant (p = .003), weak parameter estimate of .05 with a CI from .03 to .07. This is equal to the product of the direct effects between **PAF** and **ATT** (.10) and **ATT** and **BIS** (.47), which indicates that there are no other mediation paths involved (this chapter, **H2.4a**). Despite this value being below the *triviality* threshold of .08, it is close to

the estimate of the direct effect between **PAF** and **BIS** (.08), which gives it a high relative relevance for the causal chain between the two variables. In combination with its high significance, results are viewed as a *confirmation* of the hypothesis.

H2.4 PAF positively affects PBC.

PAF's influence on **PBC** is weak (-.02, CI between -.07 and .04). This estimate is nonsignificant (p = .645), leading to the conclusion that this hypothesis is *not confirmed*.

H2.4a PAF has an indirect positive effect on BIS, mediated by PBC. In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.

Due to the lack of a confirmable direct effect between **PAF** and **PBC**, this mediation is *not confirmed*. This is in line with the reasoning expressed in the results of **H2.3a**, according to which there is only one significant indirect path between **PAF** and **BIS**, namely over **ATT**.

H3.1 TRU positively affects ATT.

The influence of **TRU** on **ATT** is both *trivial* (estimate of .05, CI -.01 to .09) and nonsignificant (p = .203). Hence, the hypothesis is *not confirmed*.

H3.1a There is an indirect positive effect of TRU on BIS, mediated by ATT. In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.

Lack of evidence for a direct effect between **TRU** and **ATT** invalidates this hypothesis already as *not confirmed*.

H3.2 TRU negatively affects PBC.

This direct effect is estimated at a weak strength of -.03, with a CI lower bound of -.09 and upper bound of .03. The effect is *trivial* and non-significant (p = .391), therefore, the hypothesis is *not confirmed*.

H3.2a There is an indirect negative effect of TRU on BIS, mediated by PBC. In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.

Similar to **H3.1a**, this effect is *not confirmed* because the direct effect between **TRU** and **PBC** is non-significant (this chapter, **H3.2**).

H3.3 TRU positively affects BIS.

With an estimated weak strength of .08, a CI from .03 and .13 and a significance of p = .007, this hypothesised direct effect is *confirmed*.

H3.6 SEF positively affects BIS.

Similarly, the weak influence of **SEF** on **BIS** is estimated to be .12 with a 90% CI from .07 to .16. The estimate is highly significant (p = .002) and the hypothesis is *confirmed*.

H4.1 PER positively affects ATT.

This hypothesis is *not confirmed* due to a non-significant (p = .384) estimate of -.03 and a CI from -.07 to .02.

H4.1a There is an indirect positive effect of PER on BIS, mediated by ATT. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.

In light of the lack of evidence expressed in **H4.1**, this hypothesis is *not confirmed*. This is additionally signified by the estimated effect for the indirect effects between **PER** and **BIS**, which is insignificant (p = .082) and weak (-.04; CI from -.07 to .00).

H4.2 PER positively affects SUN.

With a low estimated value of .04, a CI from -.02 to .10 and a non-significant test result (p = .254), this hypothesis is *not confirmed*.

H4.2a There is an indirect positive effect of PER on BIS, mediated by SUN. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.

The lack of evidence for a direct effect between **PER** and **SUN** (this chapter, **H4.2**) invalidates this hypothesis. The effect is *not confirmed*.

H4.3 PER positively affects PBC.

Test results *confirm* the *validity* of this hypothesis with a moderate estimated effect of .34, with CI boundaries from .28 and .41 (p = .001).

H4.3a There is an indirect positive effect of PER on BIS, mediated by PBC. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.

Despite the evidence for direct paths between **PER** and **PBC** as well as **PBC** and **BIS**, this effect is weak (-.04; CI from -.07 to .00) and not evidenced with significance (p = .082). Therefore, this mediation hypothesis is *not confirmed*.

H4.14 IGC negatively affects BIS.

IGC is estimated to influence **BIS** directly at negligible strength (.04 with CI bound values between -.02 and .08). This estimate is non-significant (p = .255), leading to the conclusion that this hypothesis is *not confirmed*.

H4.15 IGC negatively affects SEF.

IGC influences **SEF** negatively with a strength of -.19 and a CI from -.24 to -.14. The estimate is highly significant (p = .001), which is why this hypothesis is *confirmed*.

H4.15a There is an indirect negative effect of IGC on BIS, mediated by SEF. In light of the direct effect of IGC on BIS in H4.16, this mediation is partial.

The *validity* of the indirect effect between **IGC** and **SEF** is indicated by the strong support for the relationship between **IGC** and **SEF** (this chapter, **H4.15b**) as well as **SEF** and **BIS** (this chapter, **H3.6**). It is further evidenced by the (p = .001) significant *bootstrapped* indirect effect estimate of -.02, with a CI from -.04 to -.01. This parameter estimate is equal to the product of the combined direct effects because there are no further indirect paths specified. Despite the evidence, the relationship strength is so low that the condition of *non-triviality* cannot be considered as fulfilled and therefore the hypothesis is treated as *not confirmed*.

7.11.5 Proposed Structural Model Validity – Moderation Effects

Since the *dichotomisation* approach represents a form of multi-group analysis, it is essential to test for factorial invariance of the *measurement* model to ensure that the constructs are measured in an equivalent manner in both groups (Hair & Anderson, 2010). Byrne (2010) recommends a manual approach to factorial invariance testing rather than the automated option available in AMOS, mostly due

to the fact that AMOS has a potentially confusing system for the automated approach where parameters are given names automatically. Thus, this researcher opted to implement the recommended manual approach by Byrne.

This approach tests invariance between groups by comparing the fit of a *configural* model with a *constrained* model. For the *configural* model groups are entered into AMOS, but no constraints on any of the parameters are imposed, whereas for the constrained model, groups are entered and constraints are imposed on those parameters that are to be tested for invariance. Traditionally, invariance is indicated if the chi-square difference between the models is insignificant (Jöreskog, 1971). However, this is increasingly viewed as an overly restrictive approach to invariance testing (Byrne, 2010), so a less stringent approach is preferred by many researchers. This alternative approach compares CFI values of the models. For a difference smaller than .01 it is assumed that invariance is given (Cheung & Rensvold, 2002). The CFI based approach is followed by this researcher. Results of both CFI and chisquare tests are reported in Appendix A7.6, Tables A7.6.4 to A7.6.6 for added transparency. In this study, the researcher focuses on invariance testing for the measurement model only, because the structural model is expected to show some amount of non-invariance due to moderation effects (i.e. some structural paths are hypothesised to be different between groups), making invariance testing obsolete.

For all three grouping variables, Tables A7.6.4 to A7.6.6 show a significant chisquare difference between the models, but the CFI difference is far less than .01 in all three cases. Therefore, factorial invariance of the *measurement* model is not confirmed by the traditional standard, but confirmed by the more current CFI difference test.

H2.5 PAF positively moderates (strengthens) the relation between PBC and BIS.
When testing this hypothesis and trying to produce a related output, an error message is produced by the software³⁵¹. Hence, no statement regarding this hypothesis can be made.

H3.7 ATT positively moderates (strengthens) the relation between SEF and BIS.

The *unstandardised* estimate³⁵² for the direct path between **SEF** and **BIS** varies between .08 (p = .185) for the group with low moderator values (referred to as "lo") and .17 (p = .002) for the group with high moderator values (referred to as "hi"). The χ^2 difference between the moderated and the non-moderated model is 2³⁵³ with 1 *df*, resulting in a non-significant probability of .157³⁵⁴. Therefore, the hypothesis is *not confirmed*.

H3.9 PBC positively moderates (strengthens) the relation between SEF and BIS.

When grouped according to **PBC** instead of **ATT**, the *unstandardised* estimate for the direct path between **SEF** and **BIS** is .05 (p = .288) for the lo-group and .236 (p = .004) for the hi-group. The χ^2 difference between moderated and non-moderated models is 8^{355} with 1 *df*, resulting in a significant probability of .004. Thus, the hypothesis cannot be *confirmed*.

H3.11 PBC positively moderates (strengthens) the relation between TRU and BIS.

The *unstandardised* estimate for the direct path between **TRU** and **BIS** is .04 (p = .458) for the lo-group and .14 (p = .043) for the hi-group. The χ^2 difference between the moderated and the non-moderated model is 10^{356} with 1 *df*, resulting in a significant probability of .002. Therefore, the hypothesis is *confirmed*.

³⁵¹ The researcher sought clarification from academic and AMOS product experts at IBM, but did not receive a response by the time of submission of this study. The error message reads: "An error occurred while attempting to fit the model. The sample moment matrix is not positive definite. It could fail to be positive definite for any of the following reasons"

³⁵² For group comparisons, only *unstandardised* estimates can be interpreted (Denis, 2010; Hair & Anderson, 2010).

³⁵³ Computed by subtracting AMOS χ^2 : 46,510 – 46,508 = 2.

³⁵⁴ Computed by using Soper's Statistics Calculator (Soper, 2013).

³⁵⁵ Computed by subtracting AMOS χ^2 : 45,524 – 45,516 = 8.

³⁵⁶ Computed by subtracting AMOS χ^2 : 45,526 – 45,516 = 10.

H4.11 IGC negatively moderates (weakens) the relation between ATT and BIS.

The *unstandardised* estimate for the direct path between **ATT** and **BIS** is .78 (p = .001) for the lo-group and .70 (p = .002) for the hi-group. The χ^2 difference between the moderated and the non-moderated model is 1^{357} with 1 *df*, resulting in a non-significant probability of .317. Therefore, the hypothesis is *not confirmed*.

H4.12 IGC positively moderates (strengthens) the relation between SUN and BIS.

The *unstandardised* estimate for the direct path between **SUN** and **BIS** is .12 (p = .167) for the lo-group and .10 (p = .361) for the hi-group. The χ^2 difference between the moderated and the non-moderated model is 1^{358} with 1 *df*, resulting in a non-significant probability of .317. Therefore, the hypothesis is *not confirmed*.

H4.13 IGC negatively moderates (weakens) the relation between PBC and BIS.

The *unstandardised* estimate for the direct path between **PBC** and **BIS** is -.12 (p = .007) for the lo-group and -.13 (p = .024) for the hi-group. The χ^2 difference between the moderated and the non-moderated model is 1³⁵⁹ with 1 *df*, resulting in a non-significant probability of .317. Therefore, the hypothesis is *not confirmed*.

H4.16 IGC positively moderates (strengthens) the relation between TRU and BIS.

The *unstandardised* estimate for the direct path between **TRU** and **BIS** is .08 (p = .130) for the lo-group and .12 (p = .020) for the hi-group. The χ^2 difference between the moderated and the non-moderated model is 1^{360} with 1 *df*, resulting in a non-significant probability of .317. Therefore, the hypothesis is *not confirmed*.

7.11.6 Summary of Results

Results of RA and SEM are summarised in Appendix A7.5, Table A7.5.21. To offer a more thorough picture of the constructs, R^2 values for all endogenous constructs in Model A and Model B are reported in Appendix A7.6, Tables A7.6.2 and A7.6.3.

³⁵⁷ Computed by subtracting AMOS χ^2 : 45,328 – 45,327 = 1.

³⁵⁸ Computed by subtracting AMOS χ^2 : 45,328 – 45,327 = 1.

³⁵⁹ Computed by subtracting AMOS χ^2 : 45,328 – 45,327 = 1.

³⁶⁰ Computed by subtracting AMOS χ^2 : 45,328 – 45,327 = 1.

7.12 Additional Considerations to confirm Mediation Effects

Views of researchers on how mediation should be determined differ. Some are more pursuant of the traditional fulfilment of the Baron and Kenny (1986) criteria to confirm mediation, whereas others propose that it is more important to focus on the testing of the indirect effect and to apply bootstrap tests to conduct this analysis (Xinshu Zhao, Lynch, & Qimei Chen, 2010). This study focussed mostly on the latter, but in those cases where full mediation was found, the Baron and Kenny criteria shall be discussed.

Four steps of regression are necessary to fulfil the full Baron and Kenny (1986) criteria:

- (a) Confirm that there is a significant effect of the independent variable (*IV*) predicting the independent variable (*DV*).
- (b) Confirm that there is a significant effect of the *IV* predicting the mediator.
- (c) Confirm that there is a significant effect of the mediator predicting the *DV* when both mediator and *DV* are entered as predictors into the regression.
- (d) Confirm that there is a reduced (for partial mediation) or no (for full mediation) effect of the *IV* predicting the *DV* when both mediator and *DV* are entered as predictors into the regression.

In this study, full mediation was only revealed for hypothesis H4.3a. All four steps can be reconstructed from the PROCESS 2.0 output in Appendix A7.5, Table A7.5.13. Steps (b) and (c) are confirmed with a significant effect of the *IV* PERsum on the mediator PBCsum and of the mediator PBCsum on BISsum (the respective sections in the output are titled "Outcome: PBCsum" and "Outcome: BISsum"). Step (d) is likewise confirmed with a non-significant effect of the *IV* PERsum on the *DV* BISsum when mediator and *IV* are entered into the equation simultaneously (refer to section "Outcome: BISsum").

At first glance, it could be argued that step (a) is not fulfilled because the total effect of the *IV* on the *DV* (refer to section "Total effect of X on Y") is non-significant.

However, many academics agree that step (a) is not required (Kenny, 2013) and in fact cannot be met in some cases of inconsistent mediation, as is the case for this hypothesis (cf. chapter 7.4.3), because the total effect will be cancelled out by the inconsistency despite the existence of an indirect effect. Additionally, the existence of an indirect mediation effect is confirmed by the fact that the confidence interval (CI) for the bootstrapped indirect effect (b = -.036, standardised) does not contain zero (Table A7.5.13). Further, a Sobel test (Baron & Kenny, 1986) using the statistics from Table A7.5.13 yields a result of -5.00 (p = .000), confirming the existence of the indirect effect. Full mediation is therefore considered *confirmed*.

As for the SEM analysis, full mediation is claimed for hypothesis H1.4a. Some researchers believe that the possibilities offered by SEM are superior to the Baron and Kenny criteria because the latter depend on several separate regression equations, while SEM does all simultaneously (Xinshu Zhao et al., 2010). In particular, step (a) becomes difficult to execute because it would require the specification of an entirely new model where only the *IV* SUN and the *DV* BIS are included, which would mean to forego the benefits of SEM to take several effects into account at once. Therefore, step (a) will be omitted for the SEM analysis and substituted by a short discussion of the indirect effect.

In order to reconstruct steps (b) to (d), Appendix A7.4, Tables A7.4.3 and A7.4.4 are used. Step (b) is confirmed by a significant direct effect of the *IV* SUN on the mediator ATT (b = .62, p = .003) and additionally supported by a bootstrapped CI that does not contain 0. Moving on to step (c), a direct effect of mediator ATT on *DV* BIS confirms the step (b = .47, p = .003), again supported by an all positive CI. Step (d) is confirmed by the lack of a direct effect between SUN and BIS, which is both insignificant (p = .146) and has a CI that contains 0. To substitute step (a) and confirm that there is in fact an indirect (and total) effect of significance, the bootstrapped parameter estimate between the *IV* SUN and the *DV* BIS (b = .29, p = .002) is used, additionally supported by the fact that the CI does not contain 0. Full mediation is therefore considered *confirmed*. Appendix A7.6, Table A7.6.7 provides an overview of the mediation effects.

CHAPTER 8

DISCUSSION OF FINDINGS

CHAPTER 8: DISCUSSION OF FINDINGS

Following doctoral studies in relevant fields (Jang, 2007; J.-E. Lee, 2010; Sanchez, 2010), the discussion offers an overview of the study's research goals and methods. A summary of key findings is presented before models and individual hypotheses are debated in detail. An additional section presents the post-hoc analysis, exploring possible pointers for model modifications that could be tested in future research. New hypotheses developed for future research conclude the chapter.

The goal of this study was to propose and test a theoretical framework to explain customer *switching* of RBS in Singapore on the basis of the Theory of Planned Behaviour (TPB) (Ajzen, 1991), GLOBE's cultural dimensions (House et al., 2004), *past behaviour* (Ajzen, 2002b; Bansal, 1997; Sommer, 2011) and P&P factors (Anton et al., 2007a; Gerrard & Cunningham, 2004; Keaveney, 1995), as well as findings from the researcher's exploratory qualitative study. For quantitative testing, a quasi-representative quota sample was collected with **1,431** responses (after data cleaning and *MV* treatment), which was analysed by applying two separate statistical methods, namely regression analysis (RA) and structural equation modelling (SEM), to allow for multiperspectivity.

8.1 Summary of Notable Findings

Among the statistics for *model fit*, two cut-off values (COVs) stand out as exceptional: The *explained variance* (R^2) of **BIS** in the proposed RA model (PTM or Model 4) and the *root mean square error of approximation* (RMSEA) of the proposed SEM (Model B).

The R^2 of .35 in the proposed RA model speaks for the contributions of this study to the contemporary body of knowledge in two ways: First, when compared to other studies, the proposed RA model provides an explained variance of *behavioural intention* above the average of R^2 = .32 found in studies that use comparable measures of behavioural intention (Armitage & Conner, 2001). Second, the explained variance of the PTM (R^2 = .35) exceeds the FTM's explained variance (R^2 = .32). From a RA point of view, this result is a clear indicator of the value of the proposed extensions – even when looking only at direct effects (as expressed in R^2), leaving aside the better understanding of the nature of these effects that is offered by the extended method of mediation and moderation analysis in RA and SEM.

The RMSEA value of .055 provides a more complex way of capturing the model *fit* than the R^2 of a single variable because indirect effects and measurement properties are included (cf. chapter 7.9.1). Looking at RMSEA, it is difficult to draw comparisons to other TPB-based studies because no meta-studies with average RMSEA values are presently known to this researcher. However, his results compare well with similar studies used as references for this piece of work e.g., RMSEA = .064 in Bansal (1997, p. 91) and .058 in C.-T. Liu et al. (2011, p. 75). Perhaps a more meaningful comparison is the difference of *internal validities* between FTM and PTM in the SEM analysis. The RMSEA increases from a barely acceptable *fit* of .081 to a quite adequate *fit* of .055 (cf. chapter 7, Table 7.4), which supports the proposed extensions in this study.

A key finding among individual effect tests relates undoubtedly to *past switching*, which shares 4 % of its variance³⁶¹ with **BIS** in the PTM. The result is independent of the analysis method, which speaks for the robustness of this finding. Part of the effect is owed to a direct effect on **BIS**, another part to an influence of *past switching* on **ATT**. In contrast, the effects of *past switching* on *perceived behavioural control* found in other studies cannot be reproduced (cf. chapter 8.3.2). These results highlight the general importance that *past behaviour* can have for the study of *behavioural intention*, while concurrently indicating that its specific impact may be highly dependent on the type and context of the behaviour in question.

SEF shows a significant impact on **BIS** which is moderated by **PBC**. While the direct effect comes as no surprise, the result of the moderation analysis is an interesting insight for the field of consumer *switching*. These new perspectives demonstrate that there is almost no effect of **SEF** on **BIS** for individuals with low **PBC** (cf. chapter

³⁶¹ Shared variance = squared correlation, cf. chapter 8.3.2.

8.3.3), whereas the effect becomes stronger with growing levels of **PBC**. This result can be seen as a pointer towards the general importance of moderation analysis.

Another notable result is the confirmed effect of **IGC** on **SEF**, which indicates that *service failure* is not perceived uniformly across cultures. It thereby emphasises the importance of cultural diversity when asking people for service evaluations. Although *service failure* is often treated and measured as if it was an objective fact, people with diverse cultural background may give different evaluations of the same service. More importantly, those evaluations could be more meaningful than any objective measurement of *service failure*, because they represent an individual's perspective and may be connected to his/her reasons to perform particular behaviours. Therefore, this result is an important pointer towards the importance of cultural differences in *behavioural intention*.

8.2 Assessment of Models

For the discussion of overall model *fit*, the FTM is compared to the PTM (cf. chapter 7.9). Regression results are discussed first, followed by SEM results. To test the models, a hierarchical RA that specified all constructs as predictors of **BIS** was applied (cf. chapter 7.4), whereby the hierarchy started with the FTM (Model 1) and progressively integrated *past switching* (Model 2), P&P factors (Model 3) and GLOBE variables (Model 4). The analysis (Table 8.1) shows that the PTM with all variables explains 35% of the variance of **BIS**, representing an additional 3% when compared to the FTM ($R^2 = .32$).

The change of *F*-value (Table 8.1) related to the explained variance is highly significant (p < .001) for the FTM, indicating that it is significantly better suited to explain the data than a model in which the included variables are unrelated. All subsequent *F*-values are significant, except the *F*-value for Model 4 (Appendix A7.5, Table A7.5.4), meaning that each model provides a significant improvement over the previous one in the hierarchy, except for the integration of GLOBE variables **PER** and **IGC** which does not provide a significant improvement over Model 3.

Assessment Criteria		Foundational Model	Proposed Model	Benchmark Value ³⁶²
Regression	R^2	.32	.35	.32 ³⁶³
	p of F-value change	.000 ³⁶⁴	.065 ³⁶⁵	N/A
SEM	R^2	.32	.33	.32 ³⁶⁶
	90% CI (<i>R</i> ²)	.2638	.2738	N/A
	RMSEA	.081	.055	.065 ³⁶⁷
	90% CI (RMSEA)	.076085	.053057	N/A
	CFI	.902	.904	.990 ³⁶⁸

Table 8.1:Criteria for model assessment (cf. chapters 7.4.2 + 7.11 and Appendix
A7, Table A7.5.4)

However, these findings have to be interpreted with care. They are (i) limited to direct effects, meaning that mediation and moderation effects specified in the PTM are not yet accounted for when calculating the explained variance (because they were tested later in separate RA tests, cf. chapters 7.4.4 and 7.4.5). The models that are tested here are therefore theoretically incomplete. Further, (ii) the measurement error is unaccounted for, meaning that all variables are assumed to perfectly represent the reality of the underlying theoretical construct, which is almost never the case in field studies (Guarino, 2004; Hair & Anderson, 2010).

Moreover (iii), the models do not take into account how much of the explained variance in Model 1 shifts to other variables in Model 4, i.e. how much of the variance explained by **ATT**, **SUN** and **PBC** in Model 1 is better explained by other variables that are only present in Model 4. Existence of such effects would imply that Model 1 is spurious because it falsely attributes some of the explained variance

³⁶² Benchmarks derived from comparable studies. For RMSEA and CFI, only two studies could be identified, whereby the better of the two studies was used.

³⁶³ Average value of TPB studies using the same measurement of *behavioural intentions* as this study (Armitage & Conner, 2001).

³⁶⁴ *F*-value based on comparison to a model with no relationship between constructs.

³⁶⁵ F-value based on comparison to a model where all predictors, except GLOBE constructs, predict switching intention (Model 3). When compared to the FTM, the F-value change is significant at p < .001 (Appendix A7.5, Table A7.5.4).</p>

 ³⁶⁶ Average value of TPB studies using the same measurement of *behavioural intentions* as this study (Armitage & Conner, 2001).

³⁶⁷ Cf. Bansal (1997).

³⁶⁸ Cf. C.-T. Liu et al. (2011).

of **BIS** to **ATT**, **SUN** and **PBC**. Appendix A7.5, Table A7.5.6 shows that this is the case, since *unstandardized* and *standardized* coefficients for **ATT**, **SUN** and **PBC** are lower in Model 4 vs. Model 1. Individual effect differences between models are discussed in chapter 8.3 to generate additional insights into this phenomenon.

Meta-studies (Armitage & Conner, 2001; McEachan, Conner, Taylor, & Lawton, 2011) show that in comparison with other TPB studies, the explained variance of **BIS** in this study is slightly below the average of $R^2 = .39$. However, a closer inspection of the Armitage and Conner (2001) study reveals that the prediction of *behavioural intention* is only this good when desires are used as measurement (e.g., "*I want to* ..."), which is slightly different from actual intentions (as used in this study e.g., "*I intend to* ...")³⁶⁹. The average for measures of actual intention alone (represented in this study by the construct **BIS**) is $R^2 = .32$, which is reproduced perfectly in the FTM and is exceeded in the PTM ($R^2 = .35$). Moreover, the values vary significantly between meta-studies and some of them put this study clearly above the average³⁷⁰. Thus, RA results compare quite well with other TPB-based studies.

SEM measures of *model fit* allow the researcher to address above mentioned issues (i) – (iii), with the exception of moderation effects, because they cannot be specified in the applied SEM tool, meaning that they require separate tests (Hair & Anderson, 2010). Table 8.1 shows changes of different measures of *model fit* when contrasting the foundational and the proposed model. In comparison with RA results, it is noteworthy that the explained variance of **BIS** is identical between SEM and RA in the FTM ($R^2 = .32$), whereas SEM produces a lower R^2 in the PTM ($R^2 = .33$ in SEM vs. $R^2 = .35$ in RA). Considering that SEM includes measurement error when calculating

³⁶⁹ Probably because an individual's *intention* considers *control* over the behaviour, whereas an individual's *desire* does not.

³⁷⁰ Ajzen (2012b, p. 21) summarizes meta-analytic reviews of the TPB covering various types of behaviours e.g., Armitage and Conner (2001), Notani (1998), Rivis and Sheeran (2003), and finds that the mean multiple correlations for the prediction of *intentions* ranged from .59 to .66. Meta-analytic syntheses in specific behavioural domains show similar results. In two meta-analyses of research on condom use, mean multiple correlations were found to be .71 (Albarracin, Fishbein, Johnson, & Muellerleile, 2001) and .65 (Sheeran & Taylor, 1999) and in two analyses of research on physical activity, mean multiple correlations were .55 (Downs & Hausenblas, 2005) and .67 (Hagger et al., 2002). In this study, multiple correlations for *intention* amount to R = .59 (based on $R^2 = .35$). For details, cf. Fishbein and Ajzen (2010, pp. 184-201).

 R^2 , this result is more accurate than the RA result. However, CIs in Table 8.1 show that based on the data for this study, it can be said that in 90% of all samples taken from the population (p < .01), R^2 falls between .26 and .38 (FTM) or between .27 and .38 (PTM). This means that an explained variance of **BIS** of up to 38% (which includes the RA result of 35%) is plausible in the SEM analysis.³⁷¹

Other measures of *model fit* found in Table 8.1 are on par with similar studies in this field. RMSEA suggests a poor fit for the FTM (.081) and adequate fit for the PTM (.055). Most notably, RMSEA of the proposed model is better than in other SEM studies investigating *switching* with values of .064 (Bansal, 1997, p. 91) and .058 (C.-T. Liu et al., 2011, p. 75), while the CFI is slightly lower (Bansal, 1997, p. 91; C.-T. Liu et al., 2011, p. 72) than in those studies (.94 and .99, respectively), but still good with .904 for the PTM (.902 for the FTM). When comparing the two models, all three measures suggest better fit for the PTM. While R^2 and CFI display a small advantage of the PTM, the RMSEA value makes a notable jump from a barely acceptable model to a fairly adequate model that exceeds results of similar studies.

In sum, RA and SEM results indicate that the PTM fits well with the data of this study. Not all *fit* measures lead to the same conclusions, but it is noteworthy that some *fit* measures (R^2 , RMSEA) suggest that this study improves existing *behavioural intention* models in the fields of TPB applications and *switching*.

8.3 Assessment of Hypotheses

Hypotheses H2.2, H3.4, H3.5, H3.8, H3.10, H4.4, H4.4a, H4.5, H4.6, H4.7, H4.8, H4.9, H4.9a, H4.10 and H4.10a were not tested, because one or more of the involved constructs did not meet the standards for *measurement* model *validity* (cf. chapter 7.9) applied in this study³⁷². With the PTM's *fit* confirmed, the researcher proceeds with discussing individual effect hypotheses.

³⁷¹ *Bootstrapped* values and CIs for RA not calculated.

³⁷² For example, loadings for reverse-scored UNC items were negative, indicating severe measurement problems. A possible explanation is the complex nature of the questions, causing confusion among respondents and causing them to give answers based on their feeling rather than a thorough understanding of the question.

8.3.1 Hypotheses concerning the Foundational Theoretical Model

Hypotheses **H1.1** – **H1.4a** represent the FTM, whereas **H2.1** and higher are found in the PTM. Thus, the comparison between FTM and PTM is only made for hypotheses that appear in both models, i.e. **H1.1** – **H1.4a**.

H1.1 ATT positively affects BIS.

This hypothesis is taken from the TPB (Ajzen, 1985) and confirmed in both RA and SEM analysis (cf. chapters 7.4.3 + 7.11.3). This is in line with previous findings e.g., the meta-study of Armitage and Conner (2001) offers an average shared variance³⁷³ between *attitude towards the behaviour* and *behavioural intention* of $R^2 = .24^{374}$, which makes it the strongest among the three predictors **ATT**, **SUN** (average $R^2 = .12$) and **PBC** (average $R^2 = .18$). In this study, shared variance (which is the same in FTM and PTM) is above average with $r^2 = .28$, p < .001 in RA (Appendix A7.5, Tables A7.5.3 + A7.5.6) and with $r^2 = .20$, p < .001 in SEM (Appendix A7.3, Table A7.3.10) respectively, but lower than in Bansal (1997, p. 123), where **ATT** and *switching intention* had a shared variance of $r^2 = .67$ (*p-value* not reported).

As for the relative strength of **ATT** when compared to other predictors in the model, RA results show it to be by far the strongest predictor both in the FTM (b = .43, p < .01, Model 1) and in the PTM (b = .41, p < .01, Model 4) (Appendix A7.5, Table A7.5.6). This finding is confirmed in SEM, where parameter estimates are **ATT** \rightarrow **BIS** = .49 (p < .05) in the FTM respectively .47 (p < .05) in the PTM (Appendix A7.4, Table A7.4.3). In both analytical methods and models, the second highest predictor reaches only a standardized coefficient of b = .22 (p < .001) (**SUNsum**, Appendix A7.5, Table A7.5.6), making **ATT** a highly dominant predictor. This is in accordance with other studies investigating RBS *switching* e.g., Bansal (1997), and affirms that

³⁷³ Shared variances are reported because they refer to Armitage and Conner (2001) to illustrate that *attitude* is the variable with the strongest relation to *behavioural intention*. For other variables / hypotheses, shared variances are not stated unless they contribute to the discussion.

³⁷⁴ In this study, R^2 usually denotes squared multiple correlations whereas r^2 indicates a squared single correlation, i.e. the shared variance between two constructs. In Armitage & Conner's study, however, R^2 is also used for shared variances.

attitude is the most distinct and essential concept in the field of SP (Ajzen, 2012b). The slightly lower coefficient in the proposed model indicates that some of the strength of **ATT** as a predictor in the FTM is better explained by other variables in the proposed model, which means that **ATT** is confounded in the FTM and the TPB is indeed an incomplete model for this research context. In sum, the results of previous studies are confirmed by this study.

H1.2 SUN positively affect BIS.

This hypothesis is confirmed in both models using RA, and in the FTM when using SEM (Appendix A7.4, Table A7.4.3), but rejected in the PTM using SEM. The much lower coefficients for this relationship found in the two SEMs compared to the two RA models (e.g., b = .08; p = .146 in the proposed SEM and b = .19; p < .001 in the proposed RA model; Appendices A7.4 + A7.5, Tables A7.4.3 + A7.5.6) indicate that the SEM analysis captures a weakness (e.g., measurement error or the mediating effect of **ATT**) in the explanation of **BIS** by **SUN** that is not identified in RA.

The poor overall performance of **SUN** as a predictor is in line with other TPB studies, with an average shared variance (R^2) with *behavioural intention* of merely 12% (Armitage & Conner, 2001) compared to 17% in the RA and 16% in the SEM of this study (Appendices A7.5 + A7.3, Tables A7.5.3 and A7.3.8). A deteriorating factor for the direct influence of **SUN** on **BIS** is its mediated effect via **ATT**, as indicated in **H1.4** and **H1.4a**, because some of the shared variance between **SUN** and **BIS** is actually explained by **ATT**, reducing the relevance of **SUN** as a direct influence on **BIS**. Bansal (1997), who also included this mediating effect in his models, found a similarly small and insignificant (b = .01, p > .05) direct effect of **SUN** on *switching intention*. Bansal's findings are reproduced in this study.

H1.3 PBC positively affects BIS.

The results revealed in this thesis contradict findings in most other TPB studies (Armitage & Conner, 2001; McEachan et al., 2011), where *perceived behavioural control* correlates positively with *behavioural intention*. The negative effect may be related to the specific nature of the RBS context because Bansal (1997) also found a

negative effect for his PBC related construct *facilitating conditions*³⁷⁵, whereas studies focussing on switching in other service contexts e.g., mobile telecommunications (C.-T. Liu et al., 2011), found a positive effect. The relation to the behavioural context is affirmed by Ajzen (2012b), who states that a negative correlation between *perceived behavioural control* and *actual behaviour* is expected, if individuals are unfavourably inclined to perform the behaviour.

Although this study does not measure *actual behaviour*, Ajzen's explanation still holds relevance since it also applies to *behavioural intentions*: customers do not generally intend to switch, as it consumes time and money. Instead, customers will develop intentions if circumstances force them to switch. Thus, if they have full control, they will not plan to switch, but if something forces them to switch e.g., the closure of a student bank account after graduation, a low PBC will be perceived, forcing individuals into to a state of high BIS.

Ajzen's explanation is supported by Pertl et al. (2010) investigating skin cancer related health behaviours, who show that *controllability* is a significant negative predictor of *behavioural intention* to use sun beds (the contribution of *self-efficacy* was non-significant). They argue that using sun beds appears to be a behaviour that participants perceive unfavourably. Parker et al. (1992) found a strong negative correlation between PBC and *behavioural intention* for the commitment of driving violations³⁷⁶, probably because some participants *unconsciously* underestimate their own control over these behaviours to protect their self- or social esteem. In general, it could be argued that participants are not inclined to commit such violations, probably happening out of spontaneous affections. Therefore, more control will lead to less intentions for violations and vice versa. However, this argument should not be valid because it is implausible that people switch because of affections since switching is a high involvement behaviour (cf. chapter 4.2.6).

³⁷⁵ Availability of resources required to perform a behaviour (Bansal, 1997).

³⁷⁶ Speeding, drunk driving, close following and dangerous overtaking.

Alternatively, the negative relationship between *perceived behavioural control* and *behavioural intention* can be explained by people *consciously* under-reporting the *controllability* of the behaviour to defend their ego, thus leading to response bias (Parker et al. 1992). Similarly, Pertl et al. (2010) interpret this argument within their context and state that people who have high *intentions* to use sun beds probably report low perceived *controllability* scores to express that their behaviour is caused by habit or addiction and is less related to their conscious trade-off between the positive and negative consequences of the behaviour. Again, this argument should not be applicable for switching of retail bank services because it is implausible that people feel addicted to switching or perform it as a habituated behaviour. Moreover, the explanations primarily apply to PBC sub-construct *controllability*³⁷⁷, which in this research was only measured by one item (**PBC-02**) and completely left out by Bansal (1997). This researcher believes that a detailed analysis is required to investigate possible sub-constructs of *perceived behavioural control* to shed more light on this effect.

Sharafirad et al, (2013) found that the intention to consume fast food was negatively predicted by *perceived behavioural control*. For this behaviour type, this researcher argues that individuals may rate the behaviour as adversely affecting the body, similar to sun bathing, but arguably individuals could also rate eating fast food as a desirable behaviour. This case shows that it is required (i) to investigate different underlying reasons for the negative effect of *perceived behavioural control* on *behavioural intention* for different behaviour types that individuals are not favourably inclined to perform, as well as (ii) to establish a clear understanding of the term "not favourably inclined to perform", which is likely to vary across different types of behaviour.

After recognizing that Bansal's (1997) data show a positive effect of *facilitating conditions* on *actual switching* - contrary to the negative effect of *facilitating conditions* on *behavioural intention* - this researcher developed an alternative explanation for the negative effect of *perceived behavioural control* on *switching*

³⁷⁷ Extent to which *performance* is up to the actor.

intention. Bansal's finding is intuitively plausible³⁷⁸ because once the level of PBC increases, switching is more likely to occur. The negative effect on BIS seems to contradict the positive effect on *actual switching*. In an attempt to explain this phenomenon, this researcher hypothesises that people with low PBC levels cannot actually switch, even if they highly intend to do so, whereas people with high PBC levels would switch as soon as they intend to do so. However, their *switching intention* should decrease immediately after the intended behaviour was completed and thus, creating the problem that mostly low *intention* is measured for people with high PBC, even though they may have had a very high *intention* at some point.

Following this logic, the influence of PBC on BIS would be spurious because the actual cause for lower *switching intention* would not be the high PBC, but the fact that BIS is only measureable within a short timeframe before *actual switching* occurs. To investigate this effect, a longitudinal study or an experimental design measuring all three variables (including *actual switching*) would be of interest for future research. This would allow measuring BIS of individuals with high PBC prior to their switch. Further, including *actual behaviour* in the model would create a greater degree of accuracy of the influence of PBC on BIS because it enables gathering more information about the relationship between the point of time at which *switching intention* arises and *actual switching* is executed.

The findings of this study suggest that contemporary knowledge is insufficient for a complete understanding of this effect and future research is required.

H1.4 SUN positively affect ATT.

H1.4a SUN have an indirect positive effect on BIS, mediated by ATT. In light of the direct effect of SUN on BIS in H1.2, this mediation is partial.

A positive influence of **SUN** on **ATT** is confirmed in both RA and SEM analysis. This effect was previously proposed and confirmed by Bansal (1997). Ajzen (2012a)

³⁷⁸ Bansal does not provide an explanation for the negative directionality of the effect of *perceived behavioural control* on *switching intention*.

offers arguments for the existence of mediating effects between TPB constructs. Results for **H1.4** and **H1.4a** provide additional insights regarding the weak performance of the direct **SUN** \rightarrow **BIS** relation in **H1.2**. Appendix A7.5, Table A7.5.10 and the discussion in chapter 7.4.4 show that the direct **SUN** \rightarrow **BIS** effect shrinks substantially from b = .51 to b = .24 (*unstandardized*) when accounting for the mediating role of **ATT**, showing that a large part of the influence of **SUN** on **BIS** is actually indirect, due to **ATT**. To be more precise, the size of the indirect part of this effect is b = .27 (*unstandardized*, b = .51 - .24 = .27) or b = .21 (*standardized*) (p < .001 for all coefficients).

SEM results underline **SUN**'s small direct effect on **BIS**. For the FTM³⁷⁹, the direct effect is only b = .12, while the indirect effect is b = .32 (Appendix A7.4, Tables A7.4.3 + A7.4.4), meaning that out of the total effect of **SUN** (b = .44), merely b = .12 represent a direct influence (p < .005 for all coefficients). For the PTM, the direct effect shrinks further to b = .08 and becomes insignificant (p = .146), while the indirect effect remains strong at b = .29 (p < .005). The direct effect of **SUN** on **ATT**, which lies at the root of this mediation, is the strongest of all in both SEMs (FTM and PTM), with b = .64 for the FTM and .62 for the PTM (p < .005).

These results show a strong effect of **SUN** on **ATT** and reproduce the findings of Bansal (1997), who also found the direct effect of *subjective norms* on *switching intention* to be insignificant. Thus, the researcher suggests that the actual influence may be very small or non-existent, if additional constructs, apart from *attitude*, are considered as confounding factors or mediators. In addition, this effect could be interpreted as confirming studies e.g., Davidson, Jaccard, Triandis, Morales, and Diaz-Guerrero (1976), van Hooft and de Jong (2009) and Kashima, Siegal, Tanaka, and Kashima (1992), which ascribe a major role for *subjective norms* in a *collectivistic* setting whereas **H1.2** results, if isolated, would contradict their findings. The exploration of such mediators may be fruitful for future research.

³⁷⁹ For mediation effects, the distinction between FTM and PTM was specifically made for SEM, because RA allows testing only one mediation at a time, i.e. it does not allow testing indirect effects as part of a larger model. Consequently, the test for any particular path in both models is the same for RA.

8.3.2 Hypotheses concerning Past Switching

Before discussing hypotheses concerning *past switching*, descriptive statistics of this single indicator construct provide a more transparent picture of the sample (Appendix A8, Tables A8.2 to A8.3 and Figure A8.1). The descriptive tables and the histogram for *past frequency to switch* (operationalised with item PAS-03) show that 41.6% of respondents in the sample did not switch before, whereas the remaining 58.4% switched one or more times in the past. The mean value is 2.01, meaning the average respondent switched approximately 1.1 times in the past (this value should be controlled for outliers, as respondents switching more than 6 times were counted as having switched 6 times). These numbers indicate that the majority of the sample has experience with switching of retail banking services.

H2.1 PAF positively affects BIS.

A weak positive effect of b = .09; p < .001 (RA) and b = .08; p < .005 (SEM) is confirmed by the data of this study. As discussed in chapter 2.5.4, Bansal (1997) did not find an influence of *past behaviour* when conceptualising it as *habit*. Hence, the researcher's decision to conceptualise *past behaviour* as *past frequency* can be seen as an improvement over Bansal's model. However, the weak effect in both analyses indicates that the role of **PAF** as a direct predictor is limited. This could be explained by the fact that *past behaviour*, as suggested (Sommer, 2011), is more important for behaviours that are performed often and with ease, so that they can be automated to some extent, which is not the case for RBS *switching*³⁸⁰. Results suggest that while **PAF** may play a limited role as a direct predictor of **BIS** in the context of this study, it still provides an improvement over existing models of *switching intention*. It will be the task of future meta-studies to show whether this effect holds true on a more general level in studies with different behaviours, contexts and samples.

³⁸⁰ This does not exclude the possibility of effects for non-automated behaviours per se, neither does it exclude an effect for this study.

H2.3 PAF positively affects ATT.

H2.3a PAF has an indirect positive effect on BIS, mediated by ATT. In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.

The overall impact of **PAF** is determined by its relation with all three outcomes, namely **BIS**, **ATT** and **PBC**. Regarding **ATT**, findings suggest a weak significant direct influence (b = .14; p < .001 in RA; b = .10; p < .005 in SEM). The size of the resulting indirect effect on **BIS** is b = .09; p < .001 in RA and b = .05; p < .005 in SEM. This confirms the indirect effect that Hagger et al. (2002) found for the context of exercising and provides an additional pointer for the relevance of *past behaviour*, conceptualized as **PAF**, for the TPB in general and the RBS context in particular.

- H2.4 PAF positively affects PBC.
- H2.4a PAF has an indirect positive effect on BIS, mediated by PBC. In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.
- H2.5 PAF positively moderates (strengthens) the relation between PBC and BIS.

H2.4 and **H2.4a** are not confirmed in this study, since both RA and SEM analyses fail to show relevant effect sizes and / or significances (cf. chapters 7.4.4 + 7.11.4). As discussed in chapters 7.4.5 and 7.11.5, the data of this study do not provide conclusive evidence for or against a moderating effect of **PAF** on the relation between **PBC** and **BIS** (**H2.5**). This suggests that an investigation of the effects identified in other studies (Chatzisarantis et al., 2007; Kidwell & Jewell, 2007) would require a bigger dataset or a different study design (e.g., quasi-experimental).

PAF's overall importance as a predictor of **BIS** is expressed in the total effect size. SEM, combining direct and indirect effects, shows to a total effect size of b = .13, in RA the (*unstandardized*) total effect amounts to b = .22 (Appendix A7.5, Table A7.5.11). This result suggests that while **PAF** is present as a predictor, its relevance is limited. Another measure, the squared correlation representing the shared variance between **PAF** and **BIS**, is approximately 4% (adding 1% to R^2 of **BIS** in the FTM; Appendix A7.5, Tables A7.5.3 + A7.5.6) for both RA and SEM. Thus, findings do not reproduce the high importance of *past behaviour* observed in previous studies, especially concerning its impact on *attitudes towards the behaviour* and **PBC**.

Nevertheless, the effects found in this study provide evidence that *past frequency* bears some relevance for *switching intention* of RBS, supporting findings of previous studies for other behaviours (Conner & Armitage, 1998; Hagger et al., 2002), even when accounting for a large number of other possible confounding factors (represented in the PTM). Considering that the role of *past behaviour* for the TPB is still controversial, and even denied by some scholars³⁸¹, results of this study provide promising insights to investigate it further in a variety of contexts, including, but not limited to, RBS *switching*.

8.3.3 Hypotheses concerning P&P Factors

- H3.1 TRU positively affects ATT.
- H3.1a There is an indirect positive effect of TRU on BIS, mediated by ATT. In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.
- H3.2 TRU negatively affects PBC.
- H3.2a There is an indirect negative effect of TRU on BIS, mediated by PBC. In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.

Results regarding *lack of trust* as an indirect predictor of **BIS** are inconclusive. Individual mediation paths in RA (cf. chapter 7.4.4) show that **TRU** significantly predicts both **ATTsum** and **PBCsum** (b = .125, p < .001 for **ATTsum** and b = -.092, p < .01 for **PBCsum**). SEM (cf. chapter 7.11.4), however, produces small and insignificant parameter estimates. Thus, the indirect effects of those variables on *switching intention*, which were presented in other contexts (C.-T. Liu et al., 2011; Pavlou & Chai, 2002), cannot be conclusively confirmed in this study. Considering that SEM is the more advanced method³⁸² it appears more likely that there are no indirect effects of **TRU** on *switching intention*.

³⁸¹ Cf. Sommer (2011).

³⁸² Because it considers other relationships in the model and measurement error.

Differing results in previous studies could be related to the measurement conceptualization of the constructs. While Pavlou and Chai (2002), who found evidence for effects of *trust* on *attitudes towards the behaviour* and *perceived behavioural control*, also investigated service contexts, their conceptualization of behaviour was different from this study in that it asked respondents about engaging in a behaviour which may evoke different *attitudes* than questions about ceasing a behaviour (of transacting with a SEPRO, i.e. *switching*). Regarding *perceived behavioural control*, Pavlou and Chai (2002) investigated online banking, where *trust* may have a bigger impact on an individual's *perceived behavioural control* than in the RBS context because of additional security threats³⁸³.

Results also seem to indicate that when other variables in the PTM (e.g., TRU, SUN, PER and PAF - Figure A7.4.2) are accounted for, an individual's ATT is actually not influenced by *trust* in the SEPRO. Due to contradictory results in previous studies, further investigations of this issue could attempt to reinvestigate this effect for both *switching* and other behaviours, so that the findings of previous research and of this study can be assessed in a broader context. Regarding *perceived behavioural control*, future studies should investigate the influence of *trust* on this construct in different contexts.

H3.3 TRU positively affects BIS.

Chapters 7.4.3 and 7.11.4 provide support for the indirect influence of **TRU** on **BIS**. Both RA (b = .07) and SEM (b = .08) results show a weak, but significant effects (p < .01). This confirms results of previous studies (Danesh et al., 2012; El-Manstrly et al., 2011), although the effect in this study is notably smaller. A context effect seems unlikely because the shared variance between **TRU** and **BIS** is only **4%** for both analytical methods (Appendix A7.3 + A7.5, Tables A7.3.8 + A7.5.3), which is much lower than the **26%** stated e.g., El-Manstrly et al. (2011), who conducted their study in the same context and investigated loyalty, which is similar, if not equivalent, to the opposite of the *switching* definition in this study. The fact that not only the

³⁸³ For example, data theft or lack of a reference person at the bank.

effect strength, but also the shared variance between the constructs is lower, points to unknown confounding variables that are not yet fully explored in contemporary theories and RM (e.g., cultural differences between Singapore vs. UK, where the El-Manstrly study was conducted). Another explanation could be differences in the measurement of *trust*, which was done with only two items in the El-Manstrly study, raising *validity* concerns. However, three or more items were used in other studies that produced high relevance of *trust* in other contexts (Bansal et al., 2004; Bart et al., 2005; Danesh et al., 2012), making this explanation less likely.

Looking at the bigger picture of *trust*-related research, results suggest that the relationship between *trust* and *behavioural intention* is evident, but its nature is not yet fully understood. Future studies in this area should focus on regional differences and on establishing a standardized measurement of *trust*.

H3.6 SEF positively affects BIS.

H3.7 ATT positively moderates (strengthens) the relation between SEF and BIS.

H3.9 PBC positively moderates (strengthens) the relation between SEF and BIS.

H3.6 is confirmed as highly significant (p < .001) in both RA (b = .11) and SEM (b = .12). The strength of the effect is in line with results of previous studies e.g., b = .13 in Anton et al. (2007a).

With reference to de Matos et al. (2009) and Bolton and Bronkhorst (1995), this researcher's work is the first to suggest that the effect of *service failure* on *switching intention* is moderated by TPB constructs. The interpretation of results for **ATT (H3.7)** points towards a more pronounced effect of **SEF** on **BIS** for individuals with higher **ATT**. However, tests in this study are inconclusive because the RA shows a significant interaction (cf. chapter 7.4.5), whereas SEM shows no significant difference between groups of high vs. low **ATT**. In this case, RA can be considered the superior technique because it tests a continuous moderator variable, while the moderator variable is dichotomized in SEM, removing some of its informational value. However, major RA caveats still apply e.g., no consideration for measurement

error (Hair & Anderson, 2010). Hence, future research should apply a method that combines the advantages of both methods, i.e. an SEM-based approach to continuous moderation (which could not be used in this study, cf. chapter 7.11.5).

As for the moderating role of **PBC**, results unanimously confirm hypothesis **H3.9** when using both test methods. SEM tests (cf. chapter 7.11.5) show a highly significant difference between groups of high and low scores on the **PBC** scale, whereas RA (cf. chapter 7.4.5) shows a significant interaction between **PBC** and **SEF** when regressed on **BIS**. More specifically, results show that for individuals with low **PBC**, the effect of **SEF** on **BIS** is weak and non-significant (b = .05 for SEM and RA), while it is moderately strong and highly significant (p < .01) for individuals with high **PBC** (b = .32 for RA and b = .24 for SEM). In conclusion, the researcher's analysis reveals that the influence of **SEF** on **BIS** depends on other variables, specifically *perceived behavioural control*, in the context of RBS *switching*. Future research should reconfirm this finding with new datasets and test it in other service contexts.

H3.11 PBC positively moderates (strengthens) the relation between TRU and BIS.

H3.11 was inserted in the model due to empirical support in the context of *switching* mobile SEPROs (Edward et al., 2010). Again, RA and SEM results are inconclusive, with RA revealing a non-significant and weak positive interaction effect (cf. chapter 7.4.5), whereas SEM shows a significant difference between groups of high and low **PBC**. A closer inspection of the Edward et al. (2010) study reveals that the authors initially obtained insignificant test results and could only show a significant moderation effect after removing some of the cases to increase the contrast between low- and high-scoring groups on the SCO scale (which the researcher interpreted as a proxy to **PBC** in his study). Since this represents an *a posteriori* modification of the data, the *validity* of these results may be jeopardized and this researcher concludes that evidence for this moderating relationship remains elusive.Future studies aimed at investigating this relationship should target bigger sample sizes. Additionally, methodical shortcomings have to be conceded with regards to the dichotomous SEM moderation and the RA-based continuous moderation methods applied in this study. The reference study uses a generalized

linear model (GLM), which carries similar shortcomings to the RA approach (Hair & Anderson, 2010). Therefore, ideally, an SEM-based continuous moderation analysis should be applied in future studies.

8.3.4 Hypotheses concerning Cultural Dimensions

- H4.1 PER positively affects ATT.
- H4.1a There is an indirect positive effect of PER on BIS, mediated by ATT. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.
- H4.2 PER positively affects SUN.
- H4.2a There is an indirect positive effect of PER on BIS, mediated by SUN. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.
- H4.3 PER positively affects PBC.
- H4.3a There is an indirect positive effect of PER on BIS, mediated by PBC. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.

Based on findings of Sideridis and Padeliadu (2001) for the context of studying, the researcher investigated mediated influences of **PER** on *switching intention* via the TPB constructs. Both RA and SEM show very weak and insignificant effects on **ATT** and **SUN (H4.1 + H4.2)**, meaning that no mediated influence of **PER** on **BIS (H4.1a + H4.2a)** can be confirmed via these two paths. While **H4.3** was confirmed in RA and SEM, the connected mediation via **PBC (H4.3a)** was insignificant (p = .082) in SEM. However, it was confirmed in RA, with moderate strength and negative values throughout the confidence interval (b = -.036, CI from -.054 to -.022) (cf. chapters 7.4.4 + 7.11.4). Thus, empirical support for the results of Sideridis and Padeliadu (2001) are applicable to the RBS context following **H4.3a** is inconclusive. Further, the direct effect of **PBC** on **BIS** is negative in this study (cf. chapter 8.3.1). Thus, the indirect effect of **PER** on **BIS** via **PBC** needs to be interpreted carefully because there is no conclusive evidence for the mediation, with RA confirming the mediation (cf. chapter 7.4.4) and SEM showing a non-significant indirect effect (cf. chapter 7.11.4).

Rationales for these mixed results can be identified by contrasting the context of this study vs. Sideridis and Padeliadu (2001). The latter aimed to explain studying, where *performance orientation* may play a bigger role than in a service context, because the behaviour of studying is strongly performance-related, while it is intuitively less relevant for the influence of TPB constructs on an individual's **BIS** of RBS. Hence, future studies could investigate and compare the relevance of **PER** in different contexts and for various types of behaviour.

H4.11 IGC negatively moderates (weakens) the relation between ATT and BIS.

H4.12 IGC positively moderates (strengthens) the relation between SUN and BIS.

H4.13 IGC negatively moderates (weakens) the relation between PBC and BIS.

Chapters 7.4.5 and 7.11.5 demonstrate no significant difference in the effects of TPB constructs on **BIS** between individuals of high and low scores on **IGC** for both RA and SEM. A major reason for the difficulty to reproduce the moderating effect of *in-group collectivism* that was revealed in other studies may be the fact that they focussed on shopping (Davidson et al., 1976; Kashima et al., 1992; D. Y. Lee, 2000; Pavlou & Chai, 2002; F. B. Tan et al., 2006). Shopping could be more dependent on *collectivism* than RBS *switching*, considering that shopping involves the purchase of items that customers use to show that they belong to a particular group, i.e. status symbols (Bourdieu, 2013), making the link to *in-group collectivism* more relevant. Hence, a key issue for future research is to establish differences in cultural moderation effects for different contexts, i.e. moderated moderation, because it is a promising way to assess how different contexts influence the importance of the *in-group collectivism* dimension.

H4.14 IGC negatively affects BIS.

- H4.15 IGC negatively affects SEF.
- H4.15a There is an indirect negative effect of IGC on BIS, mediated by SEF. In light of the direct effect of IGC on BIS in H4.16, this mediation is partial.

The direct effect of **IGC** on *switching intention* found by B. S.-C. Liu et al. (2001) is weak and non-significant in both analyses (cf. chapters 7.4.4 + 7.11.4). Further, **IGC** has a significant (p < .001) negative influence of -.17 (RA) and -.19 (SEM) on **SEF**, thus confirming results of B. S.-C. Liu et al. (2001) expressed in **H4.15**. With the combined indirect effect of **IGC** on **SEF** and **SEF** on **BIS**, however, mediation (**H4.15a**) is not confirmed because the effect size of -.02 is trivial (cf. chapter 7.11.5).

While the above mentioned idea of a context-specific relevance of *in-group collectivism* would also apply for the direct effect of *in-group collectivism* on **BIS**, i.e. the importance of *in-group collectivism* depends on the type of behaviour, the impact of context on *service failure* is less obvious. It could be argued that *service failure* is not tied to the given context of RBS *switching*, as it reflects an individual's tendency to assess *service failure* in general. In order to investigate this idea, the researcher suggests integrating context variation into future research and testing how it influences and moderates different model aspects, i.e. the TPB as well as P&P factors and GLOBE's cultural dimensions.

H4.16 IGC positively moderates (strengthens) the relation between TRU and BIS.

Lastly, the moderating effect of **IGC** on the relationship between **TRU** and **BIS** failed to substantiate, showing no significant result in both analyses of this study (cf. chapters 7.4.4 + 7.11.4). Since the reference study that prompted the researcher to introduce this effect investigated a different context, namely international buyer-supplier relationships (Cannon et al., 2010), the question of context dependency also has to be raised for this effect. It is possible that decisions of professional buyers acting in international markets are governed by different rules than decisions of RBS customers. More specifically, regarding **H4.16**, it could be argued that *collectivism* should have a stronger impact on the relationship between *lack of trust* and *switching intention* (or, as in the case of the reference study, *long-term engagement with a supplier*), because *collectivists* would perceive *trust*-related issues as more important when confronted with the often culturally ambivalent and unfamiliar engagements on international markets as compared to domestic markets

(such as the RBS market), where many culturally defined behaviours are uniform and self-evident, even in a relatively diverse cultural environment e.g., in Singapore.

Therefore, the argument of contextual differences in the relevance of cultural differences, i.e. moderated moderation, also applies here (as it did in **H4.13**). Future research would benefit from further exploring cultural dimensions in different contexts (e.g., business-to-business contexts, insurance markets, luxury goods etc.).

8.4 Post-Hoc Analysis

Hair and Anderson (2010) state that while it is fairly common practice to conduct post-hoc analyses after testing the theory, proposed modifications must (a) make theoretical sense and (b) be cross-validated in an analysis in which the same model is tested with a new sample drawn from the same population. The first requirement can be met by providing a theoretically sound explanation for each modification. However, the second requirement will be the task of future research. With this limitation in mind, this section will present suggestions for model modifications.

The process is the same as the analysis of *modification indices* (MIs; cf. chapter 7.9.2), with the only difference that in the case of post-hoc analysis, the focus is on the paths between constructs rather than between singular items. The process for this analysis is aligned with suggestions and instructions by Hair and Anderson (2010). Table 8.2 shows the AMOS output of MIs for the proposed SEM. The highest MI of 93.4 is observed for the path from **SUN** to **PBC**, meaning that the model χ^2 would improve, i.e. decrease, by 93.4 if this path was added. With b = .352, the strength of the added effect path would be moderate. From a theoretical standpoint, it can be argued that with the current measurement of *switching*, barriers (cf. chapter 6.1) are not necessarily "hard" barriers resulting in the definite inability to perform *switching* e.g., an exceptionally bad credit score preventing someone to *switch* to a new credit card provider. They can also be "soft" social norms that are reflected in *subjective norms* and eventually perceived as barriers by the individual. For example, if there is a social norm to stay loyal to the SEPRO, then

Regression Path		MI	Parameter Change	Theoretically Plausible	
PBC	\leftarrow	SUN	93.393	.352	Yes
PBC	\leftarrow	ATT	92.114	.368	Yes
SEF	\leftarrow	TRU	91.759	.305	Yes
SUN	\leftarrow	PAF	34.898	.136	No
SUN	\leftarrow	TRU	31.468	.163	No
ATT	\leftarrow	PBC	24.013	.118	Yes
SEF	\leftarrow	SUN	19.189	.161	Yes
SEF	\leftarrow	PBC	14.866	130	Yes
PBC	\leftarrow	SEF	13.799	110	Yes
SEF	\leftarrow	ATT	13.546	.142	Yes
SEF	\leftarrow	PAF	13.258	.092	Yes

the individual may feel that he/she has low *perceived behavioural control* over *switching*.

Table 8.2:Modification indices for regression paths between constructs (AMOS
Output)

The second highest MI suggests an effect path from **ATT** to **PBC**. It could be argued that someone with high **ATT** expects positive outcomes of *switching* and therefore, does not perceive barriers which are outbalanced by the benefits when barriers are perceived as $costs^{384}$. Another theoretical explanation for the high MI is that the reverse effect is true (**ATT** \leftarrow **PBC**) due to a *cognitive dissonance* (cf. chapter 2.3.2.4), individuals with low **PBC**, but a positive **ATT** experience a *cognitive dissonance* because the resulting behaviour, i.e. *not switching* contradicts the individuals' *attitude*³⁸⁵. To reduce the dissonance, individuals change one or more of the contradicting *attitudes* / behaviours to restore consistency. Since individuals can only adjust one of the two, which is **ATT** because behaviour cannot be controlled. With these lines of reasoning, the path **PBC** \leftarrow **ATT** makes sense as suggested by the *modification index*, but the reverse path **ATT** \leftarrow **PBC** could also be relevant. This implies that causality may be two-way and can only be examined in experimental or quasi-experimental studies that test causality of each effect separately.

³⁸⁴ Mental cost-benefit analysis.

³⁸⁵ While this explanation makes sense for individuals with low *perceived behavioural control*, i.e. it would imply a *heteroskedastic* relationship, the MI would still turn out suggesting a direct effect.

A moderate positive effect of *lack of trust* on **SEF** is suggested by MI = 91.6. This effect is plausible as long as **SEF** is measured in the form of customer assessments, as is the case in this study, because customers who do not *trust* the SEPRO may be faster to assume that the service is not in his/her best interest. The reverse effect, however, may even be more plausible when repeated *service failures* lead the customer to expect more failures in the future, which constitutes a *loss of trust* in the abilities of the SEPRO to deliver the service. Due to this plausible double-sided causality, it is difficult to test the effect in a SEM or RA model with cross-sectional data, because most methods assume a one-sided causality. It is therefore necessary that investigations of this effect aim at panel or experimental designs with a temporal dimension, so as to allow for empirical separation of both causalities.

An MI of 34.9 puts a positive effect of **PAF** on **SUN** up for debate. This effect lacks plausibility because subjective norms are an individual's reflection of societal norms, which exist independent from an individual's *past switching*. A plausible hypothesis would be the reverse causality, i.e. that subjective norms influence how often individuals *switch* over the course of their lives. This would be identical to the hypothesis that **PAF** affects actual switching. Following this reasoning, the effect of **TRU** on **SUN** is discarded because the *lack of trust* of an individual cannot influence the norms that prevail in a society. The reverse effect seems plausible if there are unknown variables that have causal relationships with both *lack of trust* and **SUN**. Such variables would cause AMOS to generate MIs that suggest an effect of TRU on SUN, since the software does not have any information on the possible unknown variables. An example for such a variable could be a societal norm to distrust banks in general. Another possibility is a positive effect of SUN on SEF, which in turn may result in a *lack of trust*, as discussed above. This effect is supported by an MI of 19.2 and theoretically plausible, since subjective norms favouring switching could represent a cause for a more critical subjective assessment of *service failure*.

PBC is suggested to negatively affect **SEF** (MI = 14.9). This effect is plausible, considering that individuals with low **PBC** do not have the ability to *switch* and therefore, have to stay with a SEPRO of low perceived service quality, whereas

individuals with higher control over their *switching* behaviour will simply *switch* to a provider where they expect less *service failures*.³⁸⁶ Alternatively, a reversed causality as expressed in the next highest MI (13.8) is also plausible, since a high amount of failed service experiences may cause an individual to think about *switching* and become more aware of possible *switching* barriers, resulting in a lower reported score of **PBC**. Due to this possible dual causality, a cross-sectional design will not be suitable to further examine the relationship between these two constructs. Instead, a panel or experimental design will be necessary.

With an MI of 13.6, a weak positive effect of **ATT** on **SEF** could be considered for further investigation. Theoretical *validity* can be provided by arguing that a high level of **ATT** may lead to a more open and critical assessment of service quality, resulting in more reports about *service failures*. Lastly, an effect of **PAF** on **SEF** is plausible when considering that high *past switching* may mean that an individual has become comfortable with the *switching* process and is likely more critical in his/her service assessments due to past experiences with different FSPs, knowing that a *switch* is always a solution when the service does not meet expectations.

8.5 Hypotheses for Future Research

Hypotheses developed in this chapter are summarized in Appendix A8, Table A8.1, along with methodological remarks and the part of this thesis that led to their development. Of the hypotheses derived from the post-hoc analysis, a selection of hypotheses that the researcher considers fit for testing is presented.

³⁸⁶ Implies a temporal instability of the variables that lead to *switching*, identical to the one presented in chapter 8.3.1 regarding H1.3, meaning some relations involving *perceived behavioural control* and other variables cannot be captured with a cross-sectional design.

CHAPTER 9

ACADEMIC AND MANAGERIAL IMPLICATIONS

CHAPTER 9: ACADEMIC AND MANAGERIAL IMPLICATIONS

The structure of this chapter follows the three steps cycle introduced by Swales and Feak (2004), starting with consolidating the findings, followed by listing limitations and concluding with implications. This approach is used because inferences are discussed together with limitations, which provides an advanced assessment of their potential to resolve real-world issues. Following Bansal (1997) and Huang (2009), implications are categorised into different types and presented in a particular order. First, the discussion about *methodological* implications summarizes findings and ideas about improving methodological aspects for future research. Second, *theoretical* implications reveal how the results of this study may affect the academic debate of related theories and disciplines. Lastly, results of this study are converted into *managerial* implications to serve as guidance for retail bank managers to apply those findings in their decision-making processes.

9.1 Consolidation of Findings

The TPB was identified as the preferred choice for a FTM to explain *switching*. Nonetheless, the researcher believed that the FTM should be expanded to become more practically relevant for his specific research context. Previous studies using the TPB to investigate behaviour revealed both the importance and the opportunities of adding new factors into the FTM via parallel or left side integration. However, most studies cover only one or two additional aspects to explain behaviour. Depending on the research purpose, studies either focus e.g., on *past behaviour* (P. Norman & Conner, 2006; P. Norman & Cooper, 2011) or on cultural values (Furrer et al., 2000; B. S.-C. Liu et al., 2001; J. Zhang et al., 2008). Only a few studies combine different aspects e.g., Kovač and Rise (2007), who link culture and *past behaviour*.

Studies that investigate the influence of P&P factors on *switching* (Anton et al., 2007a; Gerrard & Cunningham, 1997; Keaveney, 1995; Saparito et al., 2004) usually do not apply SP theories and therefore, lack a deeper understanding of underlying psychological factors. Bansal (1997), who investigates *switching*, links the TPB with

past behaviour, customer satisfaction and service quality, which are similar to the P&P factors in this study, could be considered an exception to the rule, but does not take culture into consideration. Comparing the current study to the previous research work, no other investigation could be identified to-date that covers as many different facets potentially influencing *switching* within a single framework.

This study expands the FTM by including (i) *past behaviour*³⁸⁷, recognizing effects of previous experience, (ii) P&P factors (*service failure, pricing issues, inconvenience, lack of trust*), enabling the inclusion of the consumers' general attitude towards the SEPRO, and (iii) GLOBE's cultural dimensions (*future orientation, in-group collectivism, performance orientation, power distance, uncertainty avoidance*), taking into account consumers' culture-specific belief sets. Further distinguishing it from the majority of previous academic work, this study combines different RM: firstly, a profound qualitative study precedes the quantitative study. Secondly, the quantitative study applies both RA and SEM for a comprehensive data analysis.

For the qualitative study, 22 semi-structured interviews were completed, resulting in refinements of the *switching* definition and narrowing of the research context to RBS. Further, the analysis contributed to the PTM development through preliminary testing of the TPB constructs, P&P factors and cultural dimensions within the given research context of Singapore. Among others, the analysis revealed that (i) *loosing face* was of minor concern for this research work, (ii) the unit of analysis needed to be individuals and (iii) context specificity had to be addressed in the survey.

The application of two strings of data analysis enabled the interpretation of results from two different perspectives. Thus, it allowed a more detailed analysis, balancing the pros and cons of each method, which increased the ability to draw rigorous conclusions. Applying a conservative approach, this combination resulted in a higher probability for the correct dismissal or confirmation of hypotheses. Hence, the combination of RA and SEM can be viewed as advantageous in terms of leading to a revised explanatory model built on empirical data.

³⁸⁷ Conceptualized as *past frequency*.

One of the main *methodological* goals was to obtain results of high *reliability* and *validity* (cf. chapter 7). Despite application of broad precautions when designing the research instrument, *validity* could not always meet the most conservative COVs. Moreover, several construct relationships within the PTM could not be confirmed as significant although previous literature indicated their existence³⁸⁸. In all *methodological* discussions, the researcher offered maximum transparency by providing as many analytical details as possible.

His results show that both **ATT** and **SUN** successfully explain **BIS**, with the direct effect of **SUN** only being confirmed by RA. Further evidence from this study shows that **SUN** positively affect **ATT** and that there is an indirect effect of **SUN** on **BIS**, mediated by **ATT**. Interestingly, results disclose that **PBC** has a significant negative effect on **BIS**. Further findings advocate that *past behaviour*, operationalised as **PAF**, has a significant, weak positive effect on **ATT** and **BIS**, as well as an indirect positive effect on **BIS**, mediated by **ATT**. **TRU** affects **BIS**, according to SEM moderated by **PBC**, and RA suggest that **TRU** has a positive weak effect on **ATT**. Moreover, this piece of research supports the idea that **SEF** has a positive effect on **BIS**, with **PBC** and **ATT** moderating this effect, whereby the moderation of **ATT** is only confirmed in RA. Insights from this study also indicate that **PER** has a moderately strong effect on **PBC** and that **IGC** negatively affects **SEF**.

The effects of different constructs are summarised in the *Comprehensive Banking Service Switching Model* (CBSSM) in chapter 10, thereby providing an overview of all practically relevant effects for RB managers.³⁸⁹

³⁸⁸ Several relationships could not be confirmed although validity was sufficiently obtained. Besides differences of the research context and design, one reason for such cases could be differences in the operationalisation of the same constructs across different studies, as highlighted by Armitage and Conner (2001), because it may lead to limited comparability or replicability of study results. For example, *switching intention* is operationalized as desires in some studies, but constrained to *intentions* in others (Armitage & Conner, 2001).

³⁸⁹ Both multiple RA and SEM confirm the effects if not explicitly indicated otherwise.

This researcher contrasts models on the basis of three criteria: overall *fit, explained variance* of **BIS** and *significance of paths*³⁹⁰. Both RA and SEM indicate that after eliminating unreliable constructs, the PTM fits well with the collected primary data. While the inclusion of *past behaviour* and P&P factors³⁹¹ provide an enhancement of the TPB, cultural dimensions added comparatively little value to the new model but an in-depth understanding about the influence of single cultural dimensions.

9.2 Discussion of Limitations

Before discussing implications, it is necessary to understand the strength of this study's results and restrictions regarding their practical applicability. Hence, this researcher first assesses this study's limitations, categorized into (i) limitations of the PTM, outlining restrictions concerning explanatory capabilities of the model, (ii) limitations of the RM, presenting restrictions of the results' explanatory power based on methodological decisions, and (iii) specific limitations related to c-c research, discussing potential biases related to examing different cultural groups.

9.2.1 Limitations of the Proposed Theoretical Model

First, concurrent with his epistemological position, the researcher applied strict assessment criteria for the constructs' psychometric properties, which resulted in the dismissal of **6** out of **15** initially identified concepts (cf. chapter 7.9.2). Hence, out of **33** hypothesized relationships (cf. chapter 5) only **25** remained as a basis for statistical testing. Following his conservative approach, this researcher found **10** hypotheses (cf. chapter 7.11.6) confirmed for RA and SEM, **1** hypothesis as clearly rejected and the remaining either inconclusive or insignificant³⁹². Hence, the PTM is based exclusively on the confirmed constructs and relationships.

³⁹⁰ For a more detailed sub-set of criteria e.g., model robustness, cf. chapters 7 and 8.

³⁹¹ Not all *fit* measures lead to the same conclusions. In this study, *fit* measures R^2 and RMSEA suggest that the proposed extensions represent an improvement over existing variations of the TPB for *behavioural intentions* in the field of *switching*.

³⁹² Many inconclusive or insignificant hypotheses were moderation or mediation effects which were automatically rejected if one of the corresponding direct relationships could not be confirmed. Further, many of the inconclusive results were confirmed with one analysis method and inconclusive / rejected with the other, which speaks for the additional scrutiny gained in the multi-method approach of this study.

Second, this researcher decided not to measure effects on actual behaviour for his study, making behavioural intention a proxy for actual behaviour, and instead, aimed to determine only effects on behavioural intention. Reasons for this decision were the natural constraints of this study's scope to conduct the measurement of actual behaviour (Francis et al., 2004), as well as this researcher's belief that the effects on *actual switching* can be estimated by applying proximal values of previous studies because a strong relationship between behavioural intention and actual behaviour is reported in the literature (Ajzen, 2012a). For example, Bansal (1997) investigated the effect of *behavioural intention* on RBS switching³⁹³ and thus, his results (b = .27) could be applied for benchmarking (cf. chapter 2). However, Perugini and Conner (2000) believed that an approach that focussed only on the volitional stage comes with limitations. Further, they claimed that it cannot be assumed that behavioural intention mediates effects of all other variables on actual behaviour to 100%. Thus, leaving out the enquiry of direct effects on actual behaviour may have resulted in incompleteness for depicting the model's explanatory power relations, limiting the strength of implications as far as actual switching is concerned.

9.2.2 Limitations of the Research Methodology

The survey method has limitations despite being the TPB's preferred RI (Ajzen, 2012a). The reliance on surveys to derive the necessary coefficients for the PTM creates an opening for potential researcher bias or error, which could adversely affect results - a possibility made all the more likely by the necessity for customized surveys suited to the particular research context (Ajzen, 2012a). Keeping such limitations in mind, the researcher applied a comprehensive and systematic process when designing the RI³⁹⁴. However, not all biases could be prevented because some of the methods would require changes to the research design or jeopardise the

³⁹³ Restricted to mortgage services.

³⁹⁴ Following Ajzen (2006), Podsakoff et al. (2003), Francis et al. (2004), Ajzen and Fishbein (2008).
research objectives³⁹⁵. Thus, some limitations remain, related to *reliability* and *validity* and, thus to the practical applicability when interpreting implications. For example, bias could exist because of different semantic interpretations of the closed-ended survey question response format (Diekmann, 1995).

The selected sampling strategy also results in particular limitations. Applying a *non-probability* sample creates constraints for drawing conclusions from field studies about the overall population (Zikmund, Griffin, Babin, & Carr, 2010), particularly since not all demographics were included e.g., individuals 55+ years (cf. chapter 6.8). Besides such general constraints of a *quasi-representative* quota sample, a number of other biases can occur due to the specific sampling techniques of this study, further decreasing *representativity*. First of all, selection bias could be caused by not following the population's distributions of certain variables (other than *ethnicity, gender* and *age*), when research assistants selected survey participants according to their convenience (cf. chapter 6.5). For example, research assistants usually first approached their social circle, which likely consists of highly educated individuals, before talking to strangers.³⁹⁶ Higher education is linked to higher levels of *idiocentrism*, i.e. the participant's degree of *individualism* (Triandis et al., 1971).

Based on this assumption, it is risky to perceive the measured degree of this cultural dimension as a representative value for the Singapore population. Further, in case the research assistants were unable to reach the target quota for particular ethnic groups within their social circle, data collection was conducted in public enclaves of high ethnic concentration, which may cause bias due to over-representation of participants from specific areas, another form of selection bias (Diekmann, 1995). Additionally, self-selection bias could occur when specific demographics more frequently agree to participate in the survey, whereas others more frequently

³⁹⁵ Such techniques usually require obtaining data for *IVs* and *DVs* from separate survey rounds with different samples, or a change of the research design to experiments or secondary data collection, following Podsakoff et al. (2003). The researcher did not perceive these techniques as adequate solutions to remain aligned with his research goals and the scope of this study.

³⁹⁶ For example, children of parents with academic background have a three times higher chance to obtain an academic degree than other children (Diekmann, 1995). This researcher believes that in argumentum e contrario, research assistants studying at universities should have a higher probability to have a more educated background.

refuse (Diekmann, 1995). Such form of selection bias could especially occur when interviewing people outside the research assistants' social circles³⁹⁷.

Obtaining a large sample by conducting surveys with the help of research assistants may result in further limitations related to data collection. First, research assistants were required to be personally present, which is a burdensome endeavour that stretches the period of data collection over several months³⁹⁸. Hence, strictly speaking, this study is not truly cross-sectional and a small risk of historic effects may exist³⁹⁹, creating differences between the first and the second round of survey collection, with the second round only focussing on selected under-represented demographic sub-groups, even if immeasurable by the researcher. Besides, some respondents possibly felt unmotivated or made no effort to recall past experiences, especially if research assistants were not paying attention to such issues. Further, participants could provide wrong answers simply as a result of not having any recollection of relevant experiences.

Particularly intensifying some of above concerns in the context of Singapore⁴⁰⁰ could be that this city is often regarded as a fast paced society, where *kiasuism*⁴⁰¹ causes people to highly value time (Nam, Klemz, Boshoff, & Mazibuko, 2009), and thus, could be more reluctant to participate in activities that do not further their interests (e.g., responding to a survey). Despite the researcher's implementation of strict control mechanisms (cf. chapter 6) and his selection of trustworthy research assistants, it will remain unknown if all surveys were filled according to instructions or if a few surveys were possibly forged.⁴⁰² Longing for solutions, this researcher 6),

³⁹⁷ This bias was difficult to identify immediately although research assistants highlighted typical demographics that usually refused to take part in the survey. For example, middle-age, white collar workers, when approached during rush hours, often refused to participate in the survey whereas shop assistants were happy to participate.

³⁹⁸ First round: January-March 2013; second round: May 2013.

³⁹⁹ For example, a RB scandal was strongly presented in the news, which may have changed the beliefs of the overall population during the time of the survey collection.

⁴⁰⁰ This notion was also indicated by the research assistants who conducted the survey.

⁴⁰¹ Individual's anxiety to lose out (J. T. S. Ho, Ang, Loh, & Ng, 1998).

⁴⁰² General and typical problems for conducting surveys (Dillman, 1983).

thereby keeping in mind that risks remain for such cases. Undetected cases could then create bias, leading to limitations of this study's results.

Further, interpretations about the effect of **PBC** on *behavioural intention* and related claims about possible implications are limited due to the cross-sectional research design causing possible sampling *idiosyncrasies*: this researcher believes that individuals without *switching* barriers probably immediately *switch* and subsequently reduce their *switching intention*. Hence, individuals with low barriers and high *switching intention* may not be included in the sample, which may have resulted in a selection bias that was unforeseen and difficult to predict during the study design. Consequently, the true effect of **PBC** on **BIS** remains unknown until a more rigorous investigation is conducted e.g., involving a longitudinal study. Alternatively, the negative effect of **PBC** on **BIS** could be explained with participants who interpret the term *"to intend to"* as *"to want to"*, which is probably independent of *switching* barriers, instead of interpreting *"to intend to"* as *"to plan to"*, which is probably dependent on *switching* barriers and corresponding to what the researcher aimed to measure. Such participants would probably state low values for **PBC**, but high values for **BIS**⁴⁰³.

A constraint related to the nature of field study research is that the PTM does not allow causal conclusions⁴⁰⁴ (Bansal, 1997; Diekmann, 1995). Moreover, there are limitations based on the quantitative analysis related to the survey method. For example, *n*-*n* distributions of some constructs may point towards social desirability. Signs of *heteroscedasticity* led the researcher to be cautious when interpreting relations between **ATT / PER, ATT / PAF, SUN / PER, PBC / PER,** and **PBC / PAF**. Although the sample was large and results are conclusive for some parameters, specific values could still be influenced by the sample's *idiosyncrasies*.

⁴⁰³ Implies that studies, which do not measure actual switching need to measure behavioural intention differently from studies, which measure actual switching because they have to stay closer to the meaning of "to plan to".

⁴⁰⁴ Experimental designs could investigate causalities, when variables can be influenced by the researcher (Diekmann, 1995). Some cases of causality could be examined with panels because they consider control of unknown and unmeasured variables (Andreß, Golsch, & Schmidt, 2013).

9.2.3 Limitations of Cross-Cultural Research

Although several recommendations and theories were taken into consideration, the issue of conducting profound studies about cultural differences presents major challenges and limitations because the field of c-c psychology is relatively new (Triandis, 1999). In this sense, limitations of this research still exist for this study.

First, although the RI applied English language that was affirmed as appropriate in a series of pre-tests and proof readings by local academics with field study experience, research assistants still pointed out that the older generation faced language barriers and took longer to fill in the survey⁴⁰⁵. Due to Singapore's high immigration rates over the last decades (People's Action Party, 2013; Yew, 2013), moderate English language problems may play a role for the older generation who did not necessarily grow up with English as a native language. Occasionally, research assistants had to translate parts of the survey questions from English into e.g., Mandarin, Malay or Tamil, which potentially led to bias when the translation of key terms used in the questions did not match the exact English meaning.

Second, response sets vary across cultures, i.e. individuals with diverse backgrounds perceive scoring scales differently and are inclined to systematically check *unipolar* or *bipolar* scales towards the centre or the outside (Triandis, 1994). For example, the cultural dimension of *confucianism* influences response patterns for survey constructs (Slater & Yani-de-Soriano, 2010). Hence, dissimilar values for variables could be inserted because of different response behaviours instead of real differences in the variables. Likewise, differences that exist could be concealed if respondents answer questions similarly due to their response pattern. Such systematic differences of response behaviour may have resulted in higher chances of type one and type two errors (Salzberger & Sinkovics, 2006).

⁴⁰⁵ Research assistants noted that "members of the older generation" sometimes took more than 30 minutes to fill in the survey, whereas "members of the younger generation" usually completed the survey within 15 minutes.

Third, there are natural limitations for the avoidance of ethno-centric bias caused by the cultural background of the researcher, which he cannot escape, and may have influenced his interpretations (Triandis, 1999). This study at least partly addresses this limitation by consulting academic experts and involving research assistants from all three major cultural backgrounds (Chinese, Indian, Malays).

Lastly, the acculturation strategies of assimilation⁴⁰⁶ and integration⁴⁰⁷ could lead to limitations, when a proportion of individuals are not presenting their true culturally distinctive traits because they are either fully assimilated or cued into common elements of the national culture via *cultural frame switching*⁴⁰⁸ by the data collection setting. For example, Indian and Malay Singaporean participants could be primed towards the common Singapore culture when facing mainly Chinese Singaporean research assistants conducting the survey. This effect could also be reversed when cultural cues trigger unusually high cultural differences within survey situations. For example, Chinese Singaporean participants could be primed towards their original culture when facing mainly Chinese Singaporean research assistants. Such concerns should also exist when cultural dimensions are measured independently of ethnicity because culture would not be measuring consistent values of individuals, thereby affecting the test-retest-*reliability* of results. However, to fully understand this problematic, its severity and effects, it is required to know which cultural frame individuals apply when *switching* RBS⁴⁰⁹.

9.3 Discussion of Implications

9.3.1 Methodological Implications

Applying a multi-method approach generates superior broadness for the research outcomes (Jick, 1979), as confirmed by the varying RA and SEM results in this study. The corresponding methodological implication is to optimize research designs by

⁴⁰⁶ Individuals identifying themselves with a host's mainstream culture (J. W. Berry, 1990).

⁴⁰⁷ Individuals identifying themselves with both the main culture and their own ethnic culture (J. W. Berry, 1990).

 ⁴⁰⁸ Bi-cultural individuals possess two cultural identities. The process of shifting between different cultural belief systems is triggered by situational cues (Benet-Martínez, Leu, Lee, & Morris, 2002).
⁴⁰⁹ Petertial subject for future second.

⁴⁰⁹ Potential subject for future research.

complementing quantitative inquiries with qualitative investigations as well as by applying different analytical tools, thereby fully using the potential of *triangulation*.

Further, this study implies the need of sufficiently pre-testing survey instruments to enhance the *reliability* of constructs before starting to collect data. For example, some opportunities to test construct *reliability* were not seized in the current study⁴¹⁰, because this researcher opted to select mainly pre-approved survey items, which was required to adhere to the strict timeline for the data collection. Therefore, the researcher's experience from conducting this study advocates future research to ensure *reliability* of the constructs with more pre-testing rounds and with larger samples. In addition, applying existing scales, sub-dividing constructs⁴¹¹ and / or integrating a qualitative investigation to deduce survey items⁴¹² can help to account for construct *reliability*. One example of qualitative methods would be *elicitation studies*⁴¹³ as outlined by Francis et al. (2004).

Another important implication is that sample sizes of over **1,400** cases allow for a great spectrum of statistical tests, refinements and measures that would not be applicable otherwise. The rigorous discussion in chapter 7 builds on the current state-of-the-art methodology to conduct a savvy SEM and multiple RA. Among the most important points are the 5-step process for *MV* analysis, the pre-test stages, the *bootstrapping* method and extensive reports of data properties for maximum transparency, which should all serve as COVs for future studies. This rather conservative approach may result in discarding some of the initial constructs, but also produces stronger results. This researcher strongly encourages the application of his approach, if the goal is to obtain high practical applicability, where results

⁴¹⁰ For example, A-B tests for different surveys were not applied, or in the first pre-test of the survey, CA values of the constructs were not calculated.

⁴¹¹ For example, *pricing issues* used new items that may cover too many aspects to be reliable.

⁴¹² Recommended by Ajzen (2012a).

⁴¹³ Open-ended questions, either asked within surveys, interviews or focus group discussions. Responses are analysed by labelling statements according to different themes and ranking them along their frequency. At least two researchers should perform this task to increase validity. Such studies can create context specific item sets and are sometimes applied for TPB-based studies to develop an indirect measurement of TPB constructs (Francis et al., 2004).

require comparatively higher *reliability*, which are the basis for *validity* and consequently lead to trustworthy managerial implications (cf. chapter 9.3.3).

AMOS displayed limitations for advanced analyses that should be considered before making methodological decisions, specifically when dealing with *n*-*n* data and moderation hypotheses. However, in this study such inabilities of AMOS did not have a negative impact on the data analysis (see also chapter 7.2).

Lastly, there are implications for the comparison of variant models to solve the methodological contradiction of having a complex model that is more accurate on the one hand, and on the other hand sufficiently parsimonious to be practically applicable, of high theoretical quality and can be tested with current analysis tools, which are usually limited in their functions for complex models⁴¹⁴.

9.3.2 Theoretical Implications

This chapter outlines implications for the theories involved in the current study. Starting with the foundational framework, the general applicability of the TPB constructs in this research context cannot be denied with all of them contributing to the explanation of **BIS**. The findings of this study are similar to results revealed in the meta-analytical study of Armitage and Conner (2001), who also found that *attitude towards the behaviour* shows the strongest influence, whereas *subjective norms* have the weakest influence on *behavioural intentions*.

This study's negative effect of **PBC** on **BIS** is similar to the findings of Bansal (1997), in which the *perceived behavioural control* sub-constructs *facilitating conditions* had a negative effect and *self-efficacy* had no effect on *switching intention*⁴¹⁵. Hence, for this research context, the effect of *perceived behavioural control* cannot be

⁴¹⁴ Algorithms and test statistics can quickly become error-prone or fall short of benchmarks in overly complex models. Moreover, when using current SEM tools, very complex models can become unmanageable because of the sheer amount of elements to consider when drawing a diagram or entering equations.

⁴¹⁵ Cf. chapter 8.

confirmed in the direction that is suggested by the TPB⁴¹⁶, contributing to the critical debate of the TPB in general and showing that this theory is not universally applicable to every context without adaption. Being an integral part of the global services sector and catering to a vast target population across all aspects of demographics (Xiao, 2008), the RBS sector is effectively a microcosm of the developed world's population. Thus, even if the change of the algebraic sign of *perceived behavioural control* was possibly only relevant for the context of RBS *switching*, the theoretical implications of adjusting the theory cannot be ignored.

Following the study's results, **PAF** as well as **P&P** factors should be incorporated into models employed in future consumer research about *switching* because integrating those facets resulted in a minor improvement of the original TPB⁴¹⁷. The extent of improvement may look moderately weak, but is of high practical relevance because even a **1%** reduction of churn rates should result in major benefits for most service companies⁴¹⁸. Moreover, their integration leads to implications for the TPB because for such a widely accepted model, even minor improvements are considered as meaningful. First, the integration of **PAF** added to the prediction of *behavioural intention*. The evidence from this study provides an additional pointer advocating the integration of *past behaviour* into the TPB⁴¹⁹, particularly in the RBS context and when conceptualized as **PAF**.

Secondly, out of four P&P factors⁴²⁰ adapted from Keaveney (1995) and related follow-up investigations⁴²¹, **TRU** and **SEF** were identified as significantly adding to the explanation of **BIS**. These findings contradict Ajzen (2005a), who generally refutes that *general attitudes* towards the SEPRO can be good predictors for

⁴¹⁶ The effect of SCO, when interpreted as an inverse proxy for *perceived behavioural control* (Bansal, 1997), on *switching intention* cannot be confirmed.

⁴¹⁷ FTM (R^2 = .32); PTM (R^2 = .33 in SEM, R^2 = .35 in RA).

⁴¹⁸ Reichheld and Sasser (1990) show that 5% reduction of *switching* almost doubles profitability.

⁴¹⁹ However, in the current study the influence of *past behaviour* vs. the TPB constructs is far less relevant than indicated in previous studies e.g., Ouellette and Wood (1998).

Pricing issues and inconvenience were dismissed due to low construct reliability, but may have an effect if measured or conceptualized differently (cf. chapter 7.9.2).

⁴²¹ For example, Gerrard and Cunningham (2004) who developed such factors for the Singapore context.

behavioural intention. Bansal (1997) successfully integrated two other general attitudes towards the SEPRO (*customer satisfaction, service quality*). Thus, the role of P&P factors as external variables cannot be denied for this context. Those theoretical amendments are of interest if the research goal is the test of factors that are more relevant for understanding specific aspects of consumer experience.

The intention to integrate five GLOBE dimensions contributes to the academic debate about two competing cultural models (Hofstede vs. GLOBE). Interestingly⁴²², the integration suffered significantly from measurement problems⁴²³, even though the researcher followed to his best ability all guidelines known to him. With only two out of five cultural dimensions obtaining sufficient statistical properties to be tested in the final data analysis (cf. chapter 7.9.2), the implication for the theoretical debate is to put more emphasis on comparing how well the constructs of Hofstede, GLOBE or other similar cultural models perform in terms of measurement validity and reliability, particularly in different contexts. In retrospect, this researcher could have included Hofstede's concept as a substitute or as an amendment to control for the low *reliability*. However, if facing the decision a second time, this researcher would choose GLOBE again over all other cultural models because of previously outlined reasons (cf. chapter 2.5.5).

9.3.3 Managerial Implications

This study presents a macro perspective on different factors that significantly influence *switching* (in here: **BIS**), thereby uncovering their relative importance. Based on this study's results, bank managers can better evaluate strategic actions within the company's strategic planning process⁴²⁴ e.g., to create a valuable and

⁴²² Past studies either did not encounter such issues or fail to mention them.

⁴²³ The final survey applied GLOBE dimensions of which some were already adjusted due to the low reliability of the constructs which were measured with the original GLOBE item sets. For example, *uncertainty avoidance* was measured in a novel approach with a completely new item set of unknown reliability (cf. chapter 6).

⁴²⁴ For example, the strategic planning process of Leidecker and Bruno (1984): environmental analysis, resources analysis and strategy evaluation.

unique customer experience⁴²⁵. The ability to provide a customer interface capable of delivering an excellent service experience is a key success factor for RBs in order to prevent *switching*, which is essential to develop the customer base⁴²⁶ and thus, a paramount driver of long-term profitability (Bharadwaj et al., 1993). Hence, this study's results serve as a basis for the creation of a sustainable competitive advantage. For the sake of simplicity and relevance, only effects of statistical significance and conclusiveness are discussed for their managerial implications in the following sections.

Probably, the most important finding of the qualitative study is that most customers who *switch* RBS rather add a new provider for a new, similar or same financial service or product, thereby not terminating the relationship with the old one. This finding suggests several courses of action for retail bank marketing managers. First, managers need to conduct a cost-benefit analysis of keeping dormant accounts and thus, the opportunity of successfully using the remaining relationship for advertisement to win customers back (Lees, Garland, & Wright, 2007). On the other side, encouraging lost customers to completely terminate the relationship with the bank could reduce the administrative costs of unused services. Second, bank managers are required to respond to high customer churn rates with innovative measures because with the contract not necessarily being terminated, many *switching* incidents remain "unnoticed". This is particularly important for banks implementing success measures (KPIs) related to churn rates or initiating attempts to either gain customer feedback regarding the *switch*⁴²⁷ or to win customers back.

The importance of **ATT** in the model implies that RB managers should be aware of customers' *attitudes towards switching*. Since this construct is difficult to observe in daily customer interactions, proper assessment requires direct measuring e.g., in form of regularly conducted customer surveys that can be obtained online, in paper form within branches or in form of analysing social media content. The direct

⁴²⁵ The customer's experience within the service encounter is regarded as the *moment of truth* where all customer oriented management activities ought to prove their effectiveness (Albrecht, 1988; Stauss & Mang, 1999).

⁴²⁶ Increasing revenues from customer base via cross-selling and up-selling (Musalem & Joshi, 2009).

⁴²⁷ For example, by conducting customer exit interviews (Lees et al., 2007).

effects of **SUN** were revealed as rather weak, similar to the majority of other studies. However, retail bank marketing managers should bear in mind that the influence of other people is important for switching because (i) strong effects of SUN on ATT exist and (ii) the conceptualisation of SUN only captures a few facets of social influence, leaving many other forms of influence (e.g., subconscious forms of social influence) unaccounted for (Armitage & Conner, 2001).

It is difficult to interpret the negative effect of **PBC** on **BIS** (cf. chapter 8). However, following the discussion in chapter 7 and evidence from previous studies e.g., Edward et al. (2010), Chebat, Davidow, and Borges (2011) and Han and Ryu (2012a), establishing SCO should remain an efficient tool to prevent customer *switching*. As empirically tested by Patterson and Smith (2003), *switching* barriers do not vary across cultural dimensions. This researcher believes that for the RBS context, bank managers must carefully assess whether their service polices are truly effective in creating *switching* barriers. For example, imposing *switching* barriers for customers who terminate service relationships⁴²⁸ may be an ineffective practice to prevent *switching* because customers would not necessarily terminate their contracts. Thus, *switching* barriers could be related to the actual usage rather than termination e.g., charging fees when the usage declines below a pre-set limit.

PAF was revealed as having a weak effect on **BIS** and **ATT**. Nevertheless, obtaining data about customers' previous *switching* should provide additional value. Hence, marketing managers should consider *past frequency* as an additional, but not as a major indicator for a customer's propensity to *switch*.

Under the assumption that no indirect relationship exists between **TRU** and **BIS** (cf. chapter 8), results suggest that a direct relationship between these two constructs is evident, but small compared to other studies. Since confounding factors could explain the low influence (cf. chapter 8), RB managers should continue to treat high trust levels as a critical success factor, particularly since this study also indicates an influence of **TRU** on **ATT**.

⁴²⁸ For example, exit fees for customers terminating their contract (Walsh, 2013).

The effect of **SEF** was found to be stronger than the effect of **TRU**. Thus, there is a definite need for bank managers to pay attention to the avoidance of *service failures*. To be able to prioritize and manage their prevention, RB managers require a detailed understanding of how different aspects of *service failure* influence *switching*. For example, Bitner (1990) shows that **40%** of negatively perceived service encounters originate from verbal and non-verbal behaviour of employees.

Another vital implication is that banks can either focus on establishing SCO or on the avoidance of *service failure*, as both options can be viewed as competing alternatives to prevent *switching*, since customers who perceive higher SCO are less likely to *switch* when they encounter *service failures*⁴²⁹. This researcher deems focus on avoiding *service failure* as the better option.

Interpreting with care (cf. chapter 8), **PER** has a positive effect on **PBC**, leading to the implication that customers with high *performance orientation* tend to perceive SCO as weaker barriers than customers with low *performance orientation*. Hence, bank managers should be aware that customer segments with high values of **PER** are more likely to execute a *switch*, probably even if the bank established high switching costs. **IGC** significantly influences the perception of *service failure*, resulting in the consequence that *collectivistic* customer segments are more tolerant for *service failures*, whereas *individualistic* segments are more likely to penalise *service failure* with *switching*. Such knowledge can be used to further segment customer groups via other observable attributes (e.g. demographics), when the effect of these observable variables on the cultural dimension is known. Taken together, these results suggest that cultural dimensions affect consumer *switching* and should be considered when formulating a differentiation strategy. Likewise, a large volume of published studies recognized culture as a determinant of consumer differences (Clark, 1990; Furrer et al., 2000; Tse et al., 1989).

The above findings are summarized in Appendix A9, Tables A9.1 to A9.3.

⁴²⁹ *Perceived behavioural control* moderating the effect of *service failure* on *switching intention*.

CHAPTER 10

CONTRIBUTIONS TO KNOWLEDGE AND FUTURE

RESEARCH

CHAPTER 10: CONTRIBUTIONS TO KNOWLEDGE AND FUTURE RESEARCH

This chapter outlines how this study's main achievements close some of the gaps in the contemporary literature, and future research avenues. The structure of this chapter follows studies of Bansal (1997), Leidecker and Bruno (1984), Hinshaw (2005), Matthews (2009), Phetvaroon (2006), Sommer (2011) and D. Zhang (2009).

10.1 Consolidation of the Research Space

The researcher concluded that understanding *switching* can have a massive impact on profitability, especially for retail banks which are an important part of the global economy. Therefore, the goal was to develop a model capable of closing some of the gaps between real-world needs and the contemporary body of knowledge⁴³⁰ in the area of consumer *switching* in the retail banking services (RBS) sector. This researcher identified the Theory of Planned Behaviour (TPB) as his foundational theoretical model (FTM), serving as the starting point for extensions with additional constructs to propose an enhanced model, which puts different factors into perspective that were not combined until to-date. Furthermore, cultural aspects are becoming increasingly important, especially for countries with culturally diverse populations. Hence, Singapore's diverse cross-cultural (c-c) context was perceived as an ideal location to achieve the goal of integrating culture into the model.

The c-c research was conducted with semi-structured interviews for the qualitative part and with surveying a quasi-representative quota sample in the quantitative part. The qualitative analysis contributed to the contemporary body of knowledge with a refinement of the *switching* definition, directions for the development of hypotheses and new insights regarding methodological adjustments for c-c research. For the quantitative study, the survey method proved to be the most beneficial one because it obtained high external validity and is rated as an efficient research instrument to obtain a large number of cases. Indeed, a large quasirepresentative sample of **1,431** cases offered a good degree of *representativeness*

⁴³⁰ From literature reviews for this study exceeding 1,000 citations.

and allowed the researcher to examine a variety of concepts with both regression (RA) and SEM analysis, resulting in the explanation of *switching intention* from a broader perspective. Despite dismissing six out of fifteen initially envisaged concepts before arriving at the proposed theoretical model (PTM), this study should be regarded as a pioneering attempt to develop and apply a comprehensive model that innovatively combines various theories and concepts from different disciplines to explain RBS *switching* in a c-c context. Both the ample literature review and the primary data from the qualitative and quantitative study offered strong support to sustain the conclusions, particularly because uncertainties are addressed with a conservative approach. Particularly innovative was combining the switching incidents identified in the qualitative study, which were found to be similar to Keaveny (1995), or Gerrard and Cunningham (2004) with the TPB.

Figure 10.1 summarizes the effects of all relevant and significant constructs and relationships (path coefficients according to SEM), successfully integrated in the researcher's new *Comprehensive Banking Service Switching Model* (CBSSM).



Figure 10.1: Comprehensive Banking Service Switching Model (CBSSM)

Although RBS may differ to some extent from country to country (Donthu & Yoo, 1998), the findings in this study can probably be applied outside Singapore because the main characteristics of RBS can easily be compared across countries (Malhotra et al., 2005) in view of prevailing high similarity in product, service and process innovations of key activities⁴³¹ (T. Morris & Westbrook, 1996). The predominantly Asian population of Singapore adds to the potential to extrapolate the findings of this study for other interesting emerging economies, such as PR China, Taiwan, Hong Kong, India, Malaysia, Indonesia or the Philippines, or in developed economies e.g., Japan or South Korea.⁴³²

With such potential for generalisability, theoretical contributions are successfully made to the fields of social- and cross-cultural psychology, consumer behaviour and strategic management. Insights from this study support RBS providers with information about (i) how to reduce churn rates among existing customer bases⁴³³ and (ii) how to gain new customer knowledge, which can be converted into inputs for successful differentiation strategies. Moreover, the findings contribute to the academic debate about the TPB. In this study, the TPB was found to be a strong framework to explain *switching* as previous literature indicates, but not all of the original hypotheses of the TPB are confirmed to explain RBS *switching intention* (**BIS**) in the expected way, indicating a need for theoretical and / or methodological adjustments. For example, *perceived behavioural control* (**PBC**) was expected to have a positive influence on **BIS**, whereas results in this study show a significant negative effect. Further, the successful extension of the FTM with additional constructs, leading to improvements in this research context, contributes to the discussion of whether the TPB is a complete theory.

⁴³¹ For example, money transfers or account information services.

⁴³² Appendix A10.1 shows that some Asian populations are culturally similar.

⁴³³ With TRU and SEF being as important for BIS and PAS being less important than previous literature would suggest.

The researcher believes that this piece of work will be influential for e.g.,

- Scholars investigating c-c consumer behaviour in Asian contexts
- Scholars interested in applying / investigating GLOBE dimensions
- Scholars intending to extend the TPB
- Scholars interested in comparing analytical methods (SEM vs. RA)
- Marketing managers (RBs and beyond) interested in consumer behaviour + branding
- Operational managers (RBs and beyond) interested in service quality + efficiency
- Strategy managers (RBs and beyond) interested in differentiation + change

10.2 Avenues of Future Research

Notwithstanding its limitations, this study suggests that the TPB is able to explain *switching intention* and extensions of this theory are beneficial in specific research contexts. Thus, the researcher believes that this study can serve as a starting point for several future research projects. The first two sub-chapters offer a discussion of future research avenues based on the study's findings and limitations (cf. chapters 8 and 9) with focus on methodological and theoretical concerns. With reference to managerial challenges, the third sub-chapter presents possible new research directions towards the value creation for organisations by both building on this study as well as seizing the potential of relevant industry trends.

10.2.1 Methodological Path

Before theoretical and managerial investigations take place, future research could pay attention to epistemological and methodological concerns. After facing a variety of issues with construct *validity* (cf. chapter 7.9.2), this researcher believes that a more fundamental investigation of research methods (RMs) should be conducted. A "back to basics" approach could be applied to develop a more valid research instrument. For example, the GLOBE constructs *uncertainty avoidance*, *power distance* and *future orientation* could be influential (cf. chapter 5.1), but had to be dismissed early in this study due to low construct *validity*. Moreover, supplementary research could be conducted by using the current data set to indicate differences of construct *validity* among age groups, which offer an intriguing perspective. More information on this aspect could establish a greater degree of accuracy for the survey method.

Missing construct validity is also particularly of concern for c-c research. Triandis (1994) emphasises that it remains unknown whether particular social-psychological constructs are either *emic* or *etic* because these constructs are dependent on the researcher's cultural background. Hence, theoretical models that are invented in the western world (e.g., the TPB) may not be fully applicable beyond the culture of their development and the corresponding data collection methodologies may not be culturally sensitive enough (Triandis, 1994). Therefore, it is of paramount importance for the development of c-c theories that the measurement fits the different cultures under investigation. Triandis (1999) suggests avoiding potential drawbacks of c-c measurement via the application of methods involving multiple rounds of interviews and extensive questioning to distinguish between *emic* and *etic* constructs. However, highly culturally sensitive methods are very resource consuming and thus, often not accepted as efficient or feasible in the academic field. Further, a large number of past studies attempted to demonstrate the TPB's applicability in an Asian context (Ajzen, 2012a) without following the approach suggested by Triandis. Nonetheless, Triandis' approach may provide measurement improvements and could be applied and tested in future research.

More advanced methods, similar to the ones that Triandis suggests, or elicitation studies as proposed by Ajzen (2012), could be established to create sets of survey items that feature beneficial psychometric properties and are therefore more comparable in terms of conceptualization across different studies and cultural contexts. Such advanced survey items should be a prerequisite for any future research which aspires to create value-adding propositions for the academic and commercial realms.

10.2.2 Theoretical Path

A strength of this study lies in its broad approach of combining an unconventional variety of constructs which has raised numerous theoretical questions in need of

further investigation. One stream of future research could focus on the examination of this study's findings by applying complementary RMs. This researcher believes that longitudinal study designs could be beneficial if constructs explaining *switching intention* change after the *switch* happened. There may be effect chains that are not visible in cross-sectional designs or model causality could be circular, which is not strictly in line with the TPB. Moreover, experimental research could be helpful to determine the cause-and-effect relations of identified paths within the PTM⁴³⁴, especially for paths for which theoretical explanations are missing or debatable. One such path is the negative relationship between **PBC** and **BIS**.

Following the discussion about RA and SEM (cf. chapter 8), it is suggested that moderating effects of variables are investigated to provide more conclusive evidence, which in many cases requires experimental research designs and / or bigger datasets. Particularly the effects of (i) **PBC** on the relationship between **SEF** and **BIS** as well as (ii) **PAF** on the relation between **PBC** and **BIS** should be verified to generate more evidence to either confirm or reject such effects. In addition, a method that combines the advantages of RA and SEM⁴³⁵ would be desirable to investigate differences of the effect of **SEF** on **BIS** for individuals with different values of **ATT**. Then, examining the relation between *lack of trust* (**TRU**) and **BIS** in the Singapore context would be worthwhile because current results showing the link for this highly practically relevant effect are not conclusive. Lastly, all potential paths between the current model's constructs identified in the post-hoc analysis (cf. chapter 8.4) could be investigated in future research, using the methodological suggestions provided in Appendix A8, Table A8.1.

Another stream of future trials could test new hypotheses and other constructs for their potential integration in the PTM⁴³⁶. Of great interest should be the subsequent

⁴³⁴ Experimental designs cannot be conducted for all constructs. For example, cultural dimensions as *IVs* cannot be varied to test a causal impact on *behaviour* (Kitayama & Cohen, 2007).

⁴³⁵ For example, an SEM-based approach to continuous moderation (cf. chapter 8).

⁴³⁶ In the best case this is conducted by creating an alternative set of additional variables because creating an even more comprehensive model increases the project scope exponentially. This researcher also experienced that complex modelling, as desirable as it may be, comes with the burden of statistical consequences that are difficult to anticipate and for which current analytical tool occasionally lack solutions.

integration of *actual behaviour*, which constitutes a major part of the original TPB model. Including *actual behaviour* may increase the framework's practical use by testing a model that contains direct paths to this construct, which is not only of ultimate interest for scholars investigating the TPB, but also for the commercial realm, where *actual behaviour* provides a closer link than *behavioural intentions* to the understanding of churn rates. Further, including *actual behaviour* would establish a greater degree of accuracy of the influence of **PBC** on **BIS**⁴³⁷, and probably other effects on **BIS** identified in this study. Moreover, measuring *actual switching* enables gathering more information about the relationship between the point of time in which *switching intention* arises and the point in which *actual switching* is executed. This information may be of utmost importance to explain the negative effect of **PBC** on **BIS** (cf. chapters 7 and 8).

Furthermore, it would be interesting to assess the effects of new constructs that are complementary to the ones used in this study. For example, exploring mediators or confounding factors of **SUN** would be helpful to investigate the actual strength of the direct effect of **SUN** on **BIS**, which was very small in this study but should be high for *collectivist* samples. Moreover, future research should generally investigate the further potential of extending the TPB with new constructs. For example, a recent study of Ajzen and Sheikh (2013) successfully investigated the integration of *anticipated affects*⁴³⁸ into the TPB. *Affections* were identified by Catellier and Yang (2013) as having a predictive role for exercise behaviour.

An alternative area of future research would be to investigate the effect of different *switching* definitions on the theoretical framework e.g., consequences of applying a narrower definition, referring to terminating the relationship with a RBS provider. Lastly, the researcher believes that Bansal's (1997) assumption about *perceived behavioural control* representing SCO should be investigated more rigorously to

⁴³⁷ Although the TPB predicts a positive effect, the effect was measured negative in this study. However, results in this study are not fully conclusive and would benefit from a follow-up investigation which should, similar to the standard TPB, include a direct path from *perceived behavioural control* to *actual behaviour*, which was not measured in this study.

 ⁴³⁸ Anticipated emotional effects of performing a behaviour e.g., feeling regret after drinking alcohol or eating fast food (Ajzen & Sheikh, 2013).

determine to which extent *perceived behavioural control* can act as a proxy or theoretical basis for *switching costs*. Moreover, Ajzen (2012b) points out that the influence of *perceived behavioural control*, in particular the sub-construct *self-efficacy*, can be negative for specific behaviours, depending on whether or not individuals have a general inclination towards the behaviour. Related to this, further examinations of the differentiation of *controllability* and *self-efficacy* may be also of relevance for particular behaviours.

10.2.3 Managerial Path

RBs are forced to constantly strengthen or develop new core competencies to create sustainable competitive advantages that withstand or exceed increasing competition (Mehra, 1996). Further, strategists cannot rely on their differentiation strategies for too long without conducting refinements (Porter, 1985)⁴³⁹. The following section outlines a selection of future research avenues with the greatest potential to serve as a basis for improving *service differentiation*.

First, future research could complement traditional data collection with new methods, facilitated by technological advancements, to create new opportunities for customer-centric banking (Yadav et al., 2013). For example, profound *real-time big data* analysis could extract relevant information from gigantic data pools (Beyer & Laney, 2012) that are often readily available to RBs. This in turn could enhance the practical relevance of the PTM by (i) enabling more accurate measurements of existing constructs through complementary or alternative methods, (ii) creating the opportunity of adding new constructs that the researcher was unable to operationalise when applying conventional methods or (iii) observing real-time effects of management decisions based on the framework (e.g., actions for the reduction of *service failures*). Particularly a granular investigation to indicate which P&P factors are important and relevant for which product, service feature or interface could provide practical insights on how to improve customer experience.

⁴³⁹ Strategic refinement does not refer to major strategic changes with the latter usually harmful for the success of the business (Porter, 1985).

Other data sources e.g., social media profiles or data generated by the usage of mobile devices, may encapsulate new variables relevant for the understanding of consumer behaviour and related to the latest trends for RBS channels e.g., the rise of mobile banking (Yadav et al., 2013). A different illustration for the application of data generated by mobile devices could be to explore the role of geographic locations. Geo-data were already used in previous TPB studies and it seems that future research has great potential for improving the TPB with the inclusion of this data type. Lastly, investigations that leverage on technological advances for data collection may provide valuable inputs for the improvement and development of research tools and analysis software⁴⁴⁰.

Further, future research of highest practical applicability could be conducted based on the current data set. For example, better customer segmentation could provide useful information e.g., by following up on a study of Deloitte (2011) revealing that older customers highly value service experience (a pointer towards the avoidance of *service failure*), whereas younger customers are more likely to be influenced by *pricing*. Besides, the collected data set could be used to contrast the impact of ethnic groups on cultural differences with previous studies e.g., Kwon and Ah Keng (2004)⁴⁴¹, or to explore whether cultural traits changed over time between the current study and previous investigations of Singapore's ethnic groups.

Another interesting realm of future research could be the investigation of the proposed framework's underlying assumption that profitability increases as a continuous function of reduced customer RBS *switching*, possibly adding insights about customer life time values. For example, Thomas et al. (2004) found that for newspaper subscription markets, a 100% customer retention is neither attractive nor beneficial. Instead, customer reacquisition could provide better results. This researcher believes that the investigation of unprofitable customer retention rates could especially play a role for customers who leave RBS accounts dormant because

⁴⁴⁰ Limitation of AMOS (cf. chapter 7).

⁴⁴¹ Besides mascullinty, Kwon and Ah Keng (2004) could not confirm major differences among Singapore's ethnic groups using Hofstede's dimensions.

this segment may be not captured by the usual *switching* definition of service termination yet.

Another promising future research field of high practical applicability for RBS *switching* would be the enquiry of behavioural change interventions with the help of the TPB or its extended versions. The TPB has already successfully provided a basis for creating and assessing the effects of interventions on particular behaviours for many other contexts (Ajzen, 2012b).⁴⁴² For example, targeted advertisement addressing newly developed customer needs and thus, affecting **ATT, SUN** or **PBC** could be sent to one group of customers and then, after some time the *switching* rate between this group and customers who did not receive the mailing (control group) could be compared. Real-time use of *big data* in combination with this study's model may offer instant feedback for such interventions.

The need for future research in different Asian RBS markets is expressed in a study by Ernst & Young (2010a, pp. 14-15), revealing that although **75%** of Asia's RBS customers rate personalized attention as highly important, only **52%** rate individual needs as properly addressed, with Singaporeans reporting the least (**33%**).

A different opportunity would be the adaptation and application of the PTM to investigate behaviour in other service industries e.g., *healthcare, public services, insurance services,* or *the retail sector,* particularly for *luxury and fast moving consumer goods.* These sectors could benefit from developing a comprehensive framework that takes into account a variety of factors from different areas to explain *switching* or other behaviour types (e.g., boycotting, negative or positive word-of-mouth). Further, similar models can be developed to investigate employee behaviour for (i) implementing organizational learning to foster innovation, (ii) reducing employees' resistance to change or (iii) to explore different leadership styles and to develop strategic perspectives for human capital management.

⁴⁴² In a meta-analysis of forty-seven intervention cases were found to significantly affect intentions (mean d = 0.66) and actual behaviour (mean d = 0.36) (Webb & Sheeran, 2006, p. 249).

The researcher believes that the returns on investment for such pieces of work could be even higher if they were combined with a better understanding of cultural differences, particularly between Western and Chinese culture⁴⁴³, facilitated by advanced c-c research methods. Following this route, an interesting scenario could be to verify the moderating effects of cultural dimensions⁴⁴⁴ for different research contexts. For example, effects of cultural dimensions are highly context dependent and vary with the product or service purchased⁴⁴⁵ (cf. chapter 9). Understanding different cultures within particular industry contexts is particularly important to address a wide range of customer segments (Herche, 1994). Another example are new investigations of culture as a moderator for different leadership styles, building on the study of House et al. (2004).

By following the future research avenues above, managers can establish a better understanding of both *consumer* and *employee behaviour* in the retail sector and beyond, therefore, seize new opportunities for product and service differentiation by implementing an improved customer-centric orientation (Porter & Millar, 1985). If businesses can use valuable and unique differences to serve their customers better e.g., by offering continuous innovations (Cadwallader et al., 2010; T. Morris & Westbrook, 1996; K.-Y. Wang & Liu, 2010) through organizational learning (Fiol & Lyles, 1985), enabled by the optimal customer relationship management (Payne & Frow, 2005) and human capital management (Clulow, Gerstman, & Barry, 2003), the differentiation strategy remains successful and will persistently result in aboveaverage returns (Porter, 1985).

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⁴⁴³ PR China and countries with high numbers of ethnic Chinese (forming a global diaspora) e.g., in Indonesia, Malaysia, Singapore and Thailand (The Economist, 2011), are probably the most interesting emerging markets with the highest potential for companies who seek to expand internationally (Wee, Daniel, & Lee, 2014; Xuetong, 2013). In PR China, a fast growing middle class will tremendously contribute to the country's future purchasing power (Wan & Zhu, 2012), which opens opportunities for different industries e.g., luxury goods (Hurun, 2014).

 ⁴⁴⁴ For example, the effects of *performance orientation* on TPB constructs or of *in-group collectivism* on *switching intention* mediated by *service failure* would be of interest.

⁴⁴⁵ For example, *collectivism* could play a more important role for consumer goods than for RBS because individuals can obtain group identification with such purchases (cf. chapter 9).

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APPENDICES

Chapters 2 - 10

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A2 Appendices Chapter 2

A2.1 Balance Theory



Figure A2.1: Heider's *POX* model. '*P*' represents the perceiver, '*O*' the other person and '*X*' an object (Situngkir & Khanafiah, 2004)

Figure 1 illustrates the base model of the *balance theory* according to Heider (1958). The attitude of the perceiver ('P'), or the individual subject of examination, towards the object 'X', which may be a relevant person or concept, or a behavioural pattern itself, is theorized to affect and/or be affected by 'P's' attitude towards the other person ('O') – possibly a prominent individual, or a social group. This is represented in the model by simple positive (+) and negative relationships (-), and these relationships are meant to be consistent with each other. If they are not, they form an unstable state, and therefore, the theory states, must gravitate towards a stable state. For example, if 'P' holds a negative attitude towards 'X' and a positive attitude towards 'O', any establishment of a positive relationship between 'X' and 'O' would be internally inconsistent, and thus 'unstable', and should cause an adjustment of 'P's' attitude towards either 'X' (towards the positive) or 'O' (towards the negative), both of which are stable. Thus, an individual's actions in response to new information that is inconsistent with his current attitudes, is expected through this model (Heider, 1958).

A2.2 Congruity Theory



Figure A2.2: Congruity theory (Osgood & Tannenbaum, 1955)

Compared to *balance theory, congruity theory* aims to add to the model to sharpen its predictive capability by adding a numerical scale to the initial '+/ –' relationships which the original model relied on. Values on the numerical scale are necessarily obtained through more rigorous surveys, so as to be able to derive the required numerical measures, than those used by the *balance theory* (or similar empirical methods) (Osgood et al., 1957).





Figure A2.3: Factors affecting cognitive dissonance (Whatley, 2009)

Dissonance Theory states that where events and/or an individual's own actions lead to a disconnect (or dissonance) between an individual's perceived reality (or selfimage) and these aforementioned events or actions, the individual's attitude will develop in a way to justify and hence, eliminate the dissonance. Therefore their behaviour will follow these new attitudes in one of three ways: (1) modifying the self's behaviour, (2) modifying existing beliefs, or (3) creating a new set of concurrent beliefs for the sake of justification (Festinger, 1957). The underlying assumption of *Dissonance Theory* is that an individual naturally tends to justify his or her own actions, and change attitudes and behaviours to do accordingly, or even adjust his or her own self-image in extreme cases (Whatley, 2009). *Cognitive* and *emotional dissonances* are both subsets of this theory, applied to the cognitive and emotional processes of individuals (Whatley, 2009).

A2.4 Theory of Reasoned Action



Figure A2.4: Theory of reasoned action (Ajzen & Fishbein, 1973)

The above illustrated relationship was initially described as a simple additive function, where an individual's *behavioural intention* was the sum of personal *attitude* towards the behaviour, multiplied by a modifier representing the importance of this attitude to the individual, and the *subjective norm*, again multiplied by a modifier representing the relative importance of this *subjective norm* to the individual. The modifiers or weights would vary from individual to individual, and from situation to situation, and are supposed to be empirically derived in differing situations (Ajzen & Fishbein, 1973).

A2.5 SERVQUAL Dimensions

SERVQUAL's five dimensions suggest the following labels and concise definitions:

Tangibles:	Physical facilities, equipment, and appearance of personnel		
Reliability:	Ability to perform promised service dependably and accurately		
Responsiveness:	Willingness to help customers and provide prompt service		
Assurance:	Knowledge and courtesy of employees and their ability to inspire		
	trust and confidence.		
Empathy:	Caring, individualized attention the firm provides its customers		

Figure A2.5: SERVQUAL dimensions (Parasuraman et al., 1988)

A2.6 Alternative Definitions of Trust

Trust can also be described as *one party having confidence in the other party's reliability and integrity* (Adamson et al., 2003) or as *one party believing in, and willing to depend on the other party* (McKnight et al., 1998). Others define *trust* as the willingness of *one party to be vulnerable to the actions of another party based on the expectation that the other party will engage in a certain action important to the trusting party* (and thereby not exploiting the vulnerability), irrespectively of the trusting party's ability to monitor or control that other party (Mayer et al., 1995). Ratnasingham (1998) explains that *trust* merely exists when the trusting party is sure about the others' willingness and ability to deliver on their obligations. From a social scientific perspective, trust allows people to choose in which situations, on who and what to rely on to make optimal decisions (Kramer & Tyler, 1996).

A2.7 Alternative Theories about Cultural Dimensions

Kluckhohn and Strodtbeck (1961) compare cultures using five dimensions: *perception of human nature* (good, bad, mixture), *perception of relationship between mankind and nature* (domination vs. harmony), *social relations* (individualistic, hierarchical, equal), *time orientation* (backward looking, forward looking, living for the moment) and *motivation for behaviour* (express oneself,

grow, achieve). Hall (1977) differentiates between three cultural dimensions: *high* vs. *low context* (explicit vs. implicit transfer of information), *monochronic* vs. *polychronic* (focus vs. multi-tasking) and *attitude towards physical contact* (attitude towards interpersonal distance). Schwartz (1992) introduces three cultural dimensions: *conservatism* vs. *autonomy* (degree of the individual's integration into groups), *hierarchy* vs. *egalitarianism* (degree of which equality among people is valued and expected) and *mastery* vs. *harmony* (degree of the desire to change the natural and social world according to individual or group interests). Trompenaars (1996) applies seven cultural dimensions: *universalism* vs. *particularism* (focus on rules vs. exceptions), *individualism* vs. *communitarism* (importance of the group vs. the individual), *neutral* vs. *affective* (to what extent emotions are shown), *specific* vs. *diffuse* (clarity of responsibility), *achieved* vs. *ascribed status* (status determined by birth or by success), *time orientation* (backward looking, forward looking, living for the moment), *sequential* vs. *synchronic* behaviour (focus vs. multi-tasking) and *internal* vs. *external control* (control of individual vs. control of the environment).

Period	1967 – 1973	1994 - 1997
Respondents	Non-Managers + Managers	Approx. 17,000 Middle Managers
Organizations Surveyed	1 (IBM) 951	
Type of organizations	IBM and subsidiaries Non-multinationals	
Industries	Information Technology Food, Finance, Telecom	
No. of Societies surveyed	72 62	
Analysis	Single effort Team effort	
Cultural Dimensions	5 9	

A2.8 Model Comparison: Hofstede vs. GLOBE

Figure A2.8.1: Contrasting Hofstede vs. GLOBE (Shi & Wang, 2011a)

Area of Contention	Hofstede	GLOBE
Assumptions of the Model	Based on two assumptions: •Calculating the respondents' individual values is a sufficient measure of the collective's culture (ecological values assumption) •Linkage between values and specific behaviors of actors can be generalized to the relationship between values and general behaviors of all members of the culture.	 <u>Challenged the two assumptions:</u> Broader definition of culture of more than just a set of values, but consisting of both values and actual ways in which members of a culture go about dealing with their collective challenges Followed Schein's (1992) view of culture: "culture evolves as a collective adaption to on-going challenges surviving in the face of external threats and opportunities and managing relations among its members" Cultural Practices ("What is") and Cultural Values ("What should be")
Action research based	5 dimensions are action research based	Hofstede's work is not action research based because action research involves a spiral of steps including fact finding, planning, action steps, evaluation, amended plans, and further action until planned change is achieved. Hofstede's work lacked most of these steps
Research decentered versus US centered	Decentering step in coming up with the 5th dimension of Long-Term Orientation	Incremental approach of adding the fifth dimension is due to the limitations of his original design and questions the possibility of the existence of other dimensions that IBM was not interested in for the initial survey carried out
Empirical relationship between cultural values and practices	Pointed to respondents' inability in the GLOBE study to describe 'practices' in any way other than applying their values	 Negative correlations between practices and values in GLOBE study contradict the onion assumption which should give rise to positive correlations Proposed a deprivation hypothesis: More intensity in the desire for something compared to another party who already has some measure of something

Figure A2.8.2: Contrasting Hofstede vs. GLOBE (Hofstede, 2006, 2010; Javidan, House, Dorfman, Hanges, & Luque, 2006)

Area of Contention	Hofstede	GLOBE
Measures too abstract	 Distinguishes between values as desired and desirable Values that are desired are more closely linked to behaviors than values as desirable 	Measures are meant to reflect the definition of culture as "broad" and "non-specific" (quoting Hofstede)
National wealth antecedent of culture? Or its consequence ? Or both?	Differences in values that can be accounted for by economic factors don't need to be explained by cultural factors only if economic factors drive cultural factors	 Cultural factors drive economic factors, hence controlling for economic factors in Hofstede will not account for measures of cultural influences as well. GLOBE analysis showed that 12 or 18 values and practices are correlated with national wealth
Eco-logic versus Psycho-logic	Eco-logic proven in Hofstede's model by operationalizing the dimensions Power Distance and Uncertainty Avoidance	 State-of-the-art methodologies to ensure reliability, divergent and convergent validity and aggregability Hofstede may have committed a possible eco-logical fallacy as there is no test for aggregability and he calculated averages of individual responses in each nation
Measuring organizational culture and national culture	 National cultures measured only through a set of values and organizational cultures measured through a set of practices Organizational practices explain twice as much variance at the organizational level as do values GLOBE lacks empathy for the essence of organizational cultures 	Faulty interpretation of the F-ratios for Hofstede studies

Figure A2.8.3: Contrasting Hofstede vs. GLOBE (Hofstede, 2006, 2010; Javidan et al., 2006)

		·i
Area of Contention	Hofstede	GLOBE
Assumptions of the Model	Most researchers study values in terms of the individual respondent's own preferred end states, but GLOBE operationalized values in terms of preferences about the behavior of others in one's society	 Respondents who rated their society may lead to the 'frog pond' effect, because suitable comparators against which are used to make judgments are going to be either less well known or less relevant Most items involved an implicit comparison with other nations
Application of the Model	Hofstede may prove more useful in predicting behavioral frequencies	May prove more useful in studying aspects of intergroup and international relations
Number of Dimensions	Three of the dimensions are ignored and individualism and power distance are focused on most of the time	Substantial risk of multi-collinearity between multiple dimensions
Levels of Analysis	Broader range of items were not factored together, inadequate to summarize the variations between samples	Broader range of items were not factored together, inadequate to summarize the variations between samples
National Wealth	Difficult to understand culture by simply partialling out wealth	Difficult to find an appropriate portrayal of the manner in which a nation's wealth is interwoven with a multitude of other factors that contribute both to cultural stability and change
Consolidation		Some consolidation of dimensions remain desirable

Figure A2.8.4: Contrasting Hofstede vs. GLOBE (Hofstede, 2006, 2010; Javidan et al., 2006)

A4 Appendices Chapter 4

A4.1 Segmentation of Participants

	Chir	nese	Malay		
	Male	Female	Male	Female	
Young	Interview 3	Interview 6	Interview 17	Interview 4	
professionals					
Mid-career	Interview 7	Interview 12	Interview 18	Interview 16	
professionals					
Well-established	Interview 2	Interview 1	Interview 14	Interview 10	
professionals					

	Indians		Permanent Resident		
	Male	Male Female		Female	
Young	Interview 15	Interview 11	-	-	
professionals					
Mid-career	Interview 9	Interview 8	Interview 13	Interview 20	
professionals					
Well-established	Interview 5	Interview 22	Interview 19	Interview 21	
professionals					

Legend:

Young professionals	Early in their career, unlikely to be married	
Mid-career	Probably married with teenage children	
Well-established professionals	Several promotions, beyond 35 years old	
Foreigners (Caucasians)	Must have lived in Singapore for at least 3 years	
Chinese, Malay and Indian	Must have lived in Singapore for at least 3 years	

Figure A4.1: Segmentation of participants (interviewees)

A4.2 Interview Guide

I) Introduction (5 min.)

- 1. Introduction and "Thank you"!
- 2. Right of confidentiality and anonymity "Nothing said by the participant would be attributed to her or him without first seeking and obtaining permission"
- 3. Participants right not to answer any question and to stop the interview at any time
- 4. Information for the participant: Anonymity will be maintained concerning all data gathered during the interview
- 5. The data will be used to find out about human behaviour when interacting with financial service providers, to understand decision making processes in selecting and/or switching a financial institution
- 6. The doctoral thesis shall help managers to formulate consumer friendly strategies and improve services
- 7. Ask for permission again to record the interview
- 8. Explain that only one person can speak at once! (switch the device on)
- 9. Ask for permission to conduct the interview
- 10. Short summary of the topics:
 - Demographic differences in decision making process
 - Decision making process in selecting financial service providers
 - Decision making process in switching financial service providers
 - Definition of a financial service provider? Context: Singapore

II) Interview Questions (30-40 min.)

Section A: Background and personal views:

- 1. Tell us a bit about yourself (occupation, family, age, etc.)
- 2. How long have you been in Singapore?
- 3. Are you the financial decision-maker in your household?
- 4. Do you help other people make decisions regarding financial services? E.g., Friends, family.
- 5. Do you have any professional experience/academic education in financial services?

- 6. Why do you think people use financial services?
 - a) Functions E.g., open an account,
 - b) Fulfil a certain need financial security, etc.
- 7. What does financial security mean to you?
- 8. When you think of the term financial security, describe the vision that this term brings to your mind in 10 years.
- 9. Why do you think financial security is important?
- 10. Are you currently interacting with one or numerous service providers?
- 11. May we ask what financial service provider(s) you are using right, now?
- 12. What are the 3 main reasons you would contact a FI?
- 13. Do you discuss decisions about financial service providers with others? (in selecting one)
 - a) If yes, could you describe the situation of the discussion(s)?
- b) How large is the influence of other people on your decision, in your opinion?
- 14. Who else that you know, is using the same financial service provider as you? (We only need your relationship to them, not their names. e.g., friend, brother, mother in law etc.)
 - a) Did you both choose a certain FSP together?

Vertical and Horizontal cultures

- 15. Do you have a specific contact person within the organisation/s of your FSP(s)
- 16. Do you have personal contacts with employees of your FSP? Do you know them personally?
 - 1. How would you describe your relationship with the contact person?
 - 2. How well are these relations maintained by your FSP, in your opinion?
 - 3. Do you view the person you are liaising with as a subordinate or an acquaintance, or a higher authority, advisor?
- 17. Can you recall any advertisements or promotions relating to your FSP? Why do you think you recall this particular ad while not remembering others?
- 18. Can you recall any advertisements or promotions relating to alternative FSP? Why do you think you recall this particular ad while not remembering others?
- 19. Do you see a difference in your interaction between FSP in your home country and Singapore?

Section B: Decision making process in selecting financial service providers

- 20. Why did you choose your current financial service provider? (Function)
- 21. What factors do you take into consideration when choosing your FSP?
 - 1. Are there more factors, which played a role for the decision?
 - 2. Rate the importance of these factors. (pricing, approachability, convenience, competence,)
 - 3. Why are these factors important or not so important to you?
 - 4. When did those factors become important to you?
 - 5. Why did these factors become important to you?
- 22. What do you like about your current financial service provider?
- 23. What do you dislike about your current financial service provider?

- 24. What adjectives come to mind when you think of your FSP?
- 25. Do you remember when you made the decision to choose your major financial service provider? (Situation (financial crisis) VS age)
- 26. Do you find it easy or difficult to choose a FSP?
 - 1. Why?
- 27. Do you find it easy or difficult to start service with FSP?
 - 1. Why?

Section C: Decision making process in switching financial service providers

- 28. Have you ever changed your financial service provider? What if they have added on?
 - **1.** Why did you add this FSP?

<u>If NO</u>

- 29. What would convince you to change your financial service provider?
 - 1. Name some factors
 - 2. Rate the importance of these factors
- 30. How open are you to switching providers?
- 31. How easy is it for you to switch a provider?
- 32. What do you think are the consequences of switching?
- 33. Imagine you have switched your main provider, how does that make you feel?
- 34. Imagine that 3 of your friends have switched providers, how likely are you to switch?

<u>If YES</u>

- 35. How many times have you changed your financial service provider?
- 36. Did you switch alone, or did anyone else you know switch together with you?
 - 1. To what extent were both of you influenced by each other?
- 37. How easy was it for you to switch?
- 38. How open were you to the switch?
- 39. Why have you changed your financial service provider?
 - 1. (second why level) May we ask for what reasons?
 - 2. Are there more factors, which played a role for the decision?
 - 3. How important are these factors for you?
 - 4. Why are these factors important or not so important to you?
 - 5. When did those factors become important to you?
 - Why did these factors become important to you? (may be relation to parents or other socialising events)
- 40. Tell us about the consequences of your switch
- 41. What did you feel when you changed your service provider?
- 42. Could you describe a situation when you made this decision (to switch)?
 - 1. Do you remember when you made the decision to change the provider?
- 43. Have you ever encountered any problems/service failure in your interaction with your FSP?
 - 1. What was the nature of the failure?
 - 2. How did you feel about it?

General Notes:

- Use specifying questions of interest: e.g., what did you do then?
- Look at body language, gestures and emotional state.
- Meta level analysis: Where is the interviewee focusing
- Structure the interview with: I would like to move on
- If not clear. "What do you mean by that?"
- Make use of table 10.2 in Saunders 2007, Research methods, p. 333
- Thanks for the interview!

Section D: Frequently asked follow-up Questions (added after 10 interviews were completed):

- a) How far do you take "what other people think you should do and what other people do "into account when deciding about whether to switch or not?
- b) Is this important to you in your decision making process?
- c) How far do you feel you have the control over this behaviour?
- d) Is this feeling / perception important in your decision making process?
- e) Can you describe your attitude about switching behaviour?
- f) Has your attitude strong influence on the decision whether to switch or not?
- g) Do you take switches in the past into account, when deciding whether to switch?

Figure A4.2: Interview guide (transcripts available on request)

P&P Factors	Number of interviewees stating the factor	Sub-categorisation	No. of interviewees stating the sub-factor (Multiple accounts possible)
		Service quality failure (also containing lack of expertise and efficiency)	14
Service Failure	20	Inability to provide the right product	5
		Unreliability	8
		Unavailability	12
Inconvenience	16	Long transaction times	3
		Not detailed answers	4
	13	Parents use the same provider	4
Other People		Recommendation of family and friends	5
		Person of trust works in the FSP	4
Dricing Issues	9	Received Interest rates	5
Pricing issues		Deducted costs	4
Lack of Trust	8	Lack of Trust related to ethics and morals	4
		Lack of Trust in capability	4
Involuntary	4		4
Promotion	3	Not applied in this study	3
Miscellaneous	6		6

A4.3	P&P Factors with allocated Sub-categories
AT .J	I GI TACIOIS WITH ANOCATED SUB-CATEgories

Figure A4.3: P&P factors with allocated sub-categories

A4.4 Analytical Approach (Overview)

What do I need to know?	Why do I need to know this?	Type of collected data?	How to analyse the data?	Time- line
Is Switching the right definition? (inductive)	Check for relevance of framework in context	Statements, number of relevant respondents, responses to follow-up questions	Theoretical coding. Counting, comparing and evaluating the numbers of occurrence	Step 1
Are P&P factors relevant for the research context? (inductive and deductive)	Identification of complementary constructs and enhancement potential for the TPB model	Numbers of occurrence of Factors and occurrence of sub constructs	Theoretical coding, Counting, comparing and evaluating the numbers of occurrence	Step 2
Survey Method (deductive)	degree to which quantitative research methods need fine- tuning deductive, literature describes risks	Strength of Statements, numbers of occurrence of hints	Theoretical coding, Counting and evaluating the numbers of occurrence	Step 3

Figure A4.4: Overview analytical approach; adapted from Maxwell (2009)

A5 Appendices Chapter 5



A5.1 Hypotheses about the Foundational Theoretical Model





A5.2 Hypotheses about the Integration of Sub-constructs of Past Switching




A5.3 Hypotheses about the Integration of P&P Factors



A5.4 Hypotheses about the Integration of GLOBE dimensions (1)







A5.5 Hypotheses about the Integration of GLOBE dimensions (2)

Figure A5.5: Hypotheses about the integration of GLOBE dimensions (2)

A6 Appendices Chapter 6

A6.1 Final Survey Design

GMT / Group: G Team: T Research Assistant: Date:/ 2013
MANCHESTER 1824 The University of Manchester Manchester Business School
Consumer Switching of Retail Banking Services
Dear Respondent,
I am conducting a research study to investigate Singapore Residents' Retail Banking Services behaviours. This study forms an important part of my doctoral dissertation at Manchester Business School (UK) and is supported by Singapore Management University and SIM University.
Your participation is voluntary. If you are willing to participate, please read and sign the <u>Informed</u> <u>Consent Form</u> which will be given to you as a separate document.
The entire survey will take about <u>15-20 minutes</u> to complete. Please read the instructions at the beginning of each section before answering any questions.
There are no right or wrong answers. I am interested in your personal opinions about retail banking services and how you use them. The questions in the survey may appear repetitive at times. However, it is important that you complete the survey in its entirety and answer all questions as honestly as possible. Please <u>answer ALL questions</u> – please do not skip any. If you are unsure about your response to any particular item, try to answer it to your best of your knowledge.
If you have any questions about this study, please contact me by phone: +65 9786 6705 or Email: Frank.Siegfried@postgrad.manchester.ac.uk.
Thank you in advance very much for your agreement to take part in this survey and your contribution to my study.
Frank ligfrich
Frank Siegfried
Doctoral Candidate, Manchester Business School, UK

 Switching is defined as maintaining, reducing or terminating the use of a specific service at one bank, and at the same time, starting the use of an equivalent service at a bank of a different brand.

 Screener (Please tick only one box!)

 F01. Residency Status (Respondents must hold a Pink or Blue NRIC card)

 Singapore Citizen
 Permanent Resident

 Not Applicable

F02.	How long have you been a	Singa	pore Citizen or Permanent	Resi	ident?
	Since birth		More than 3 years		Not Applicable
F03.	Do you have one or more p	erso	nal bank accounts?		
	Yes		No		
F04.	Are you 18 years of age or	abov	e?		
	Yes		No		

If any of the above questions is answered "Not Applicable" or "No", you cannot join this study.

SECTION 1:

I would like to know about your banking services. There are no wrong or right answers. I am interested in a number that best represents your views about the banking services that you are receiving. If you engage with more than one bank, select the bank that is the most important to you.

Please state responses in the space left of the statement, using the following 7-point rating scale:

Strongly Disagree	Disagree	Moderately Disagree	Neither Agree	Moderately Agree	Agree	Strongly Agree
1	2	3	4	5	0	/
V01.	The differ high.	ences betweer	n my bank's adver	tised / promised	and delivered	services are
V02.	My bank I	has a sufficient	number of ATMs	(write "0" if you	don't use ATN	As).
V03.	The servic experience	e personnel of with your ba	my bank has a bank 's service person	ad attitude (write nnel).	"0" if you dor	n't have any
	-					
V04.	The servic don't have	e personnel of any experient	my bank shows u with your bank	unprofessional m 's service personi	anners (write nel).	"0" if you
	-					
V05.	My bank o	offers limited t	ransaction metho	ds (e.g. bill paym	ent).	
V06.	My bank I	has problems d	lelivering the serv	ice(s) that I need	L	
V07.	My bank l don't go t	has a sufficient to branches for	number of branc your banking nee	hes for my banki ds).	ng needs <i>(wri</i> t	te "0" if you
V08.	My bank I	has long transa	ction processing t	times for its servi	ces.	
	-					
V09.	In my opin	nion, the servic	es of my bank are	e reliable.		
V10.	Product a	nd service offe	rs of my bank are	adequate for me	2.	

V11.	Fees and conditions for my banking services change unexpectedly.
V12.	Overdrafts or short-term loans do not cause excessively high interest rates.
V13.	I feel that I can trust my bank completely.
V14.	My bank has short opening hours of branches (write "0" if you don't go to branches for your banking needs).
V15.	My bank is truly sincere in its promises.
V16.	I am adequately informed about the fees for my banking services.
V17.	The fees I pay for my banking services are fair.
V18.	My bank is honest and truthful with me.
V19.	My bank treats me fairly and justly.
V20.	My bank's facilities (ATMs, branches) are conveniently located for me.
V21.	I encounter excessive delays in the banking services that I need.

SECTION 2:

I would like to know how you feel about *switching* your banking services. There are no wrong or right answers. I am interested in a number that best represents your personal view about different aspects of switching. Please remember that *switching* can refer to maintaining, reducing or terminating the use of a specific service at one bank, and at the same time, starting the use of an equivalent service at a bank of a different brand.

Please write responses in the space left to the statement, using the following 7-point rating scale:

Very Pleasan	nt		Neutral		Very Unpleasar		
1	2	3	4	5	6	7	
V22.	For me, swi	itching banking	g services would b	e			

Very Harmful			Neutral		1	Very Beneficial
1	2	3	4	5	6	7
V23.	For me, sw	itching banking	services would b)é		

Very Difficult			Neutral			Very Easy
1	2	3	4	5	6	7
V24.	For me swi	tching banking	services would b	e		

Very Undesir	rable		Neutral			ery Desirable			
1	2	3	4	5	6	7			
V25. For me switching banking services would be									
Extremely W	orthless		Neutral		Extrer	nely Valuable			
1	2	3	4	5	6	7			
V26 For male switching backing convices would be									

V26. For me, switching banking services would be _____

Absolutely	no Control		Neutral		Com	plete Control
1	2	3	4	5	6	7
V27.	How much c	ontrol do you l	have over switch	ing your bankin	g services?	

Should Not			Neutral			Should
1	2	3	4	5	6	7
V28.	Most people services.	e who are impo	rtant to me think	that I	switch my ba	nking

Would Disa	oprove		Neutral		W	ould Approve
1	2	3	4	5	6	7
V29.	Most people services.	who are impo	rtant to me	my decision t	o switch my ba	nking

Strongly Dis	agree		Neither Agree		1	Strongly Agree
			nor Disagree			
1	2	3	4	5	6	7
V30.	If I switche	d banking servic	es, I would face	barriers.		
V31.	I believe th	at I have the res	sources and capa	abilities to switch	n my banking	services.
V32.	I like the id	ea of switching	banking services			
V33.	Most peop if I had the	e who influence opportunity to	e my behaviour v do so.	would want me t	o switch ban	king services,
V34.	All things come.	onsidered, swite	ching my banking	g services is not a	a difficult pro	position for

Definitely	False		Neutral			Definitely True
1	2	3	4	5	6	7
V35.	Most peopl	e, who are acq	uainted with me,	have switched	l banking serv	ices.
V36.	I am confid	ent that I could	switch my banki	ng services if I	wanted to.	
V37.	It is expected	ed of me that I	switch banking se	rvices, if I dee	m it necessary	1.

SECTION 3:

Please tell me about your intention to actually switch your main banking services. There are no right or wrong answers. Please choose a number that best describes your intention to switch your banking services. Please remember that the definition of switching can refer to maintaining, reducing or terminating the use of a specific service.

Please write responses in the space left to the statement, using the following 7-point rating scale:

Strongly Dis	agree		Neither Agree nor Disagree			Strongly Agree
1	2	3	4	5	6	7
V38.	l intend to	switch banking	g services if give	n the opportu	inity to do so.	



Very Unlikely		Neither Likely Very L						
			nor Unlikely					
1	2	3	4	5	6	7		
V40. V41.	If you requ current bar I plan to sw	ired similar sen hking services. /itch retail bank	vices again, rat	e the probabil I need similar :	ity that you wo	ould switch your		

Will Not			Neutral			Will
1	2	3	4	5	6	7
	_					
V42.	I definitely	make	an effort to swi	itch my curren	t retail bankin	g services.

SECTION 4:

Academic research suggests that peoples' opinions are influenced by a set of personal values and practices. Therefore, in this section, I am interested in your opinion about personal norms, values, and practices. There are no right or wrong answers, and responses do not indicate goodness or badness of the society.

Strongly Disagree			Neither Agree nor Disagree			Strongly Agree
1	2	3	4	5	6	7
V43.	I think tha	t parents should	l take pride in th	ne accomplish	ments of their	children.
V44.	In organis employee	ations, job requi s know what the	irements and in ay are expected	structions sho to do.	ould be spelled	out in detail, so

V45.	I believe that people should set challenging goals for themselves.
V46.	I believe that (teen-aged) students should be encouraged to strive for continuously improved performance.
V47.	When in disagreement with adults, young people should obey elders.
V48.	In organisations, group managers should take pride in the individual accomplishments of their group members.
V49.	In organisations, group members should take pride in the individual accomplishments within their group.
V50.	I believe that orderliness and consistency should be stressed, even at the expense of experimentation.
V51.	Children should take pride in the accomplishments of their parents.
V52.	I believe that in general, leaders should encourage group loyalty even if individual goals need to be sacrificed.
V53.	I strive to continuously improve my performance.
V54.	In organisations, members should be encouraged to strive for continuously improved performance.

Substantially	/		Somewhat			Not
Rewarded			Rewarded			Rewarded
1	2	3	4	5	6	7
V55.	I believe that	at being innov	ative to improve	e performance	should be	

Question to when in Di	heir Leaders sagreement		Neutral		OL V	ey their Leaders without Question
1	2	3	4	5	6	7
V56.	I believe tha	t followers sh	ould			

Group Cohesia	on	G	and		Individualism			
is Better than			Individualism are			is Better than		
Individualism Equally Valuable					Group Cohesion			
1	2	3	4	5	6	7		
V57.	I believe that	t						
Has a Lot to be			Neutral			Is Missing a Lot		

Thankfu	For		Neutral			of Excitement
1	2	3	4	5	6	7
V58.	I believe tha schedules) t	t a person wh hat has few ur	o leads a struct nexpected ever	tured life (rout nts	ine activities al	long recurring

use of an equivalent	service at a bank o	f a different	brand.			
Solving Current	Problems 2	3	Neutral 4	5	Planning 6	g for the Future 7
V59. F	eople should	place en	nphasis on			
Strongly Disagre	ee		Neither Agree			Strongly Agree
1	2	3	4	5	6	7
V60. F	eople should	focus on	long-term results	_		
Regulado Dobello						leve Decele the
Plans Concernir	ne		Neutral		Freedom to I	Determine how
how to Achieve	Goals				Best to	Achieve Goals
1	2	3	4	5	6	7
V61.	believe that I	eaders ir	this society should			
Very Few Situat	ions	-	Some Situations	_	Almo	st All Situations
1	2	3	4	5	6	7
V62. I	believe that s	society sh	nould have rules or la	ws to cove	er	
Live for the Pres	sent		Neutral		Live	e for the Future
1	2	3	4	5	6	7
V63.	believe that p	people sh	ould			
Plan for the Fut	ure		Neutral	F	Accept	the Status Quo
	2	3	•			,
V64.	believe that t	ne accep	ited norm in this soci	ety should	1 De to	
Only		Perf	ormance Effectivene	ss and		Other Factors
Performance		Oth	her Factors (e.g. Senio	ority,	(Exce)	ot Performance
Effectiveness			Political Connections	s) _		Effectiveness)
V65	Z believe that r	a maior rev	4 vards should be base	s don	0	,
One's Ability an	d		Neutral		Т	he Authority of
Contribution to	Society	2	4	F	6	one's Position
V66.	2 believe that a	a person'	s influence in this so	iety shou	o Id be based prima	rily on
Take Life Events	5		Neutral			Plan Ahead
as they Occur 1	2	3	4	5	6	7
V67	haliova that	annle w	ho are successful sho	uld		

Question			Neutral			Obey
1	2	3	4	5	6	7
V68.	In organisatio disagreemen	ons, subordin t.	ates are expecte	ed to thei	r superior when	in

Strongly Dis	agree		Neither Agree nor Disagree			Strongly Agree
1	2	3	4	5	6	7
V69.	In organisati privileges.	ions, high ran	k and position ir	the hierarch	y should have sp	pecial
V70.	Uncertainty	is a normal fe	ature of life and	d each day is a	ccepted as it co	mes.

Increase So Distance fro Powerful In	ocial om Less ndividuals		Neutral			Decrease Social Distance from Less Powerful Individuals
1	2	3	4	5	6	7
V71.	I believe th	at people in p	ositions of powe	er should try to		

SECTION 5:

Please tell me about your *past experiences* of switching your banking services. There are no right or wrong answers. I am interested in a number that best represents your past experiences when switching your banking services. Please remember that switching can refer to maintaining, reducing and terminating the use of a specific service.

Very Good		Neutral Very B					
1	2	3	4	5	6	7	
V72.	I have	experiences w	ith switching m	y banking servi	ces.		

An Improve	ement		Neutral	A Change for the Wo		
1	2	3	4	5	6	7
V73.	Switching n	ny banking se	rvices turned ou	t to be	for me in the past	

Never		3 Times 6 Time					
1	2	3	4	5	6	7	
V74.	Over the la	st 5 years, ho	w many times ha	we you switch	ed banking ser	vices?	

Strongly Di	sagree		Neither Agree nor Disagree			Strongly Agree
1	2	3 4 5 6				7
V75. I have few experiences with switching my banking services.						

Switching is defined as maintaining, reducing or terminating the use of a specific service at one bank, and at the same time, starting the use of an equivalent service at a bank of a different brand.							
SECTION 6:							
Finally, some questions about y respondents. They are NOT used	you. Ple to ident	ase fill in this section f ify any individual. Please	for u tick	us to study the profile of our only <u>one box</u> !			
V76. Gender							
Male	D F	emale					
V77. Ethnic Background							
Chinese	ΠN	falay		Indian			
Chinese & Malay	🗆 c	hinese & Indian		Malay & Indian			
Chinese & Western	🔲 Ir	ndian & Western		Malay & Western			
Other (please specify):							
V78. Historic Background							
 First-generation Adult; 	🗆 s	econd-generation		Third-generation (and			
born outside Singapore	A	dult in Singapore		over) Adult in Singapore			
V79. Religious Orientation							
Buddhism	Пн	linduism		Christianity or Catholicism or Protestantism			
Islam	П	aoism		No Religion			
Other (please specify):							
V80. Highest Educational Degr	ee Achie	eved (current studies do r	not c	ount)			
Post-Secondary	Δ Α	-Level / Diploma		Professional			
Bachelor		fasters / MBA		Doctorate (PhD or DBA)			
V81. Annual Personal Income							
below \$\$ 40,000	🗆 s	\$ 40,000 - 79,999		S\$ 80,000 - 111,999			
□ \$\$ 120,000 - 159,999	🗆 s	\$ 160,000 - 199,999		\$\$ 200,000 and above			
V82. Age Group							
19 years or below	2	0 – 24 years		25 - 29 years			
30 – 34 years	3	5 – 39 years		40 - 44 years			
45 – 49 years	5	0 – 54 years		55 years or above			
V83. What is your country of bi	rth?						
V84. Which country do you ide	ntify the	e most with?					
V85. Length of stay in the coun	try you i	identify the most with?		years			
V86. Number of years since you	ustarteo	d working (part- or full-tin	ne)?	years			
V87. How long have you been a	actively	using banking services on	у у о ц	ir own? years			
THANK YOU FOR YOUR PARTICIPATION							

Figure A6.1: Final survey design

A6.2 Survey Constructs – Items – Indicators – References

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Behavioural Intention to Switch	V38/BIS-01	I intend to switch Retail Banking Services if given the opportunity to do so.	1 to 7		Francis, 2004, p.11	Added: "Given the opportunity" Modified to switching
5 Items 3 References (1-2-2)	V41/BIS-04	I plan to switch RBS if I need similar services again: very likely – very unlikely	1 to 7		Ajzen, 2012, website (TPB-Questionnaire)	Modified to switching Added: if I need similar services again Changed: "Extremely" into "very"
	V40/BIS-03	If you required similar services again, rate the probability that you would switch your current Banking Services": Very unlikely – very likely	1 to 7		Bansal & Taylor, 2002; Bansal, 1997 both adopted from Oliver & Swan, 1989	Deleted: at renewal date Added: If you required similar services again
	V39/BIS-02	If you required equivalent services, rate the probability that you would switch your current banking services No Chance – Very Certain	1 to 7		Bansal & Taylor, 2002; Bansal, 1997 both adopted from Oliver & Swan, 1989	Added: If you required a similar service Added: current banking services Deleted: at renewal date. Deleted: my Bank" Former Answer Category: no chance – certain
	V42/BIS-05	I definitelymake an effort to switch my current retail banking services will - will not	1 to 7		Ajzen, 2012, website (TPB-Questionnaire)	Modified to switching

Figure A6.2: Survey constructs – items – indicators – references (pt. 1)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Attitude towards Switching 5 Items	V32/ATT-05	I like the idea of switching banking services.	1 to 7		Bansal & Taylor, 2002; Bansal, 1997 both adopted from Ajzen, Driver, 1992	Slight change of order in sentence
2 References (4-1)	V22/ATT-01	For me, switching banking Services would be: Very unpleasant- very pleasant	1 to 7	REV	Francis, 2004, p.13 Bansal & Taylor, 2002; Bansal, 1997 both adopted from Ajzen, Driver, 1992 Ajzen, 2012, website (TPB-Guide)	Affective Component (Bansal is using "would be" instead of "is") Ajzen uses "extremely" as enhancer to describe bipolar scale
	V23/ATT-02	For me, switching banking services would be: Very harmful- very beneficial	1 to 7		Francis, 2004, p.13 Bansal & Taylor, 2002; Bansal, 1997 both adopted from Ajzen, Driver, 1992	Instrumental Component (Bansal is using "would be" instead of "is") Added: very
	V25/ATT-03	For me, switching of Retail Banking Services would be: very undesirable – very desirable	1 to 7		Bansal & Taylor, 2002; Bansal, 1997 both adopted from Ajzen, Driver, 1992	Affective Component Added: very
	V26/ATT-04	For me, switching of Retail Banking Services is: useful-worthless	1 to 7		Francis, 2004, p.13 Bansal & Taylor, 2002; Bansal, 1997 both adopted from Ajzen, Driver, 1992 Ajzen, 2012, website (TPB-Questionnaire)	Modified to switching instrumental component (Bansal is using "would be" instead of "is" and "useless" instead of "worthless") For me, switching of Retail Banking Services is: extremely valuable – extremely worthless

Figure A6.2: Survey constructs – items – indicators – references (pt. 2)

Construct	ltem	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Subjective Norms	V29/SUN-02	Most people who are important to my life would "disapprove –approve"	1 to 7		Bansal & Taylor, 2002; Bansal, 1997 both	Injunctive Norm
5 Items		my decision to switch my banking services.			adopted from Taylor & Todd, 1992	(Bansal is using "important to my life" instead of "important to me")
3 References		Changed to 'important to me'				
(2-2-1)	V28/SUN-01	Most people who are important to me think that I switch my	1 to 7		Ajzen, 2012, website (TPB-Questionnaire)	Injunctive Norm
		Danking services.				Ajzen uses different wording for scales responses: "should – should not"
	V37/SUN-05	It is expected of me that I switch banking services if I deem it necessary Definitely true – definitely false	1 to 7		Francis, 2004, p.17 Ajzen, 2012, website (TPB-Questionnaire)	Modified to switching Injunctive Added: if I deem it necessary
	V33/SUN-03	Most people who influence my behaviour would want me to switch banking services if I had the opportunity to do so.	1 to 7		Francis, 2004, p.17 Bansal & Taylor, 2002; Bansal, 1997 both adopted from Taylor & Todd 1992	Injunctive Norm Modified to switching Originally: who are important to me Changed to: increase variation Added: If I had the opportunity to do so.
	V35/SUN-04	Most people, who are acquainted with me, have switched banking services: definitely true – definitely false	1 to 7		Ajzen, 2012, website (TPB-Questionnaire)	Descriptive Norm Modified to switching

Figure A6.2: Survey constructs – items – indicators – references (pt. 3)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Perceived	V30/PBC-03	If I switched banking services, I	1 to 7	REV	Bansal & Taylor, 2002;	Self-Efficacy
Behavioural		would face barriers			Bansal, 1997 both	
Control		Strongly disagree- Strongly agree			adopted from Weiss &	Changed to positive ending
					Anderson, 1992	Changed order of sentence parts
6 Items	V34/PBC-05	All things considered, switching my	1 to 7		Bansal, 1997 adopted	Self-Efficacy
		banking services is not a difficult			from Weiss &	
2 References		proposition for me.			Anderson, 1992	Interestingly only used once by
(5-1)						Bansal 1997
	V31/PBC-04	I believe that I have the resources	1 to 7		Bansal & Taylor, 2002;	Self-Efficacy
		and the capabilities to switch my			Bansal, 1997 both	Changed capability into plural form
		banking services.			adopted from Taylor &	
		Strongly disagree- Strongly agree			Todd, 1995	
	V27/PBC-02	How much control do you have over	1 to 7		Bansal & Taylor, 2002;	Controllability
		switching your banking service			Bansal, 1997 both	
		Absolutely no control-complete			adopted from Madden,	
		control.			Ellen, Ajzen, 1992	
					Ajzen, 2006, p.13	
	V24/PBC-01	For me switching banking services	1 to 7		Bansal, 1997 adopted	Self-Efficacy
		would be			from Madden, Ellen,	
		very difficult – very easy			Ajzen, 1992	Slightly adjusted wording
					Francis, 2004, p.21	
					(modified to switching)	
					Ajzen, 2012, website	
					(TPB-Questionnaire)	
					Ajzen uses extremely	
	V36/PBC-06	I am confident that I could switch my	1 to 7		Ajzen, 2012, website	Self-Efficacy
		banking services if I wanted to.			(TPB-Questionnaire)	
		definitely true – definitely false			Francis, 2004, p.21	Modified to switching
						Slightly adjusted wording

Figure A6.2: Survey constructs – items – indicators – references (pt. 4)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Past Switching	V74/PAF-03	Over the last 5 years, how many	1 to 7		Ajzen, 2012, website	Modified to switching
		times have you switched banking			(TPB-Questionnaire)	
4 Items		services ? Never – 3 times – 6 times			Bansal 1997,	Changed during into "over"
3 References		and more			Phetvaroon, 2006	Time period of 5 years added
(1-1-2)						
(/	V75/PAF-04	I have few experiences with	1 to 7	REV	Own idea	
		switching my banking services.				
		(strongly agree – strongly disagree)				
	V72/PAE-01	I have Very Good / Neutral / Very	1 to 7		Own creation based on	
		Bad experiences with switching my			concept from literature	
		banking services.			of Sommer, 2011	
	V73/PAE-02	Switching my banking services	1 to 7		Own creation based on	
		turned out to be An Improvement /			concept from literature	
		Neutral / A Change for the Worse for			of Sommer, 2011	
		me in the past.				

Figure A6.2: Survey constructs – items – indicators – references (pt. 5)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Inconvenience	V02/INC-01	My bank has sufficient number of	1 to 7	REV	Liang, D. et al., 2012	Factor Loading (FL): 0,79
		ATMs (write 0 if you do not use	(originally 1			
6 Items		ATMs)	to 5)			
2 References	V07/INC-03	My bank has a sufficient number of	1 to 7	REV	Qualitative Study	
(4-2)		branches for my banking needs			Project and Mishra, A.	
		(write "0" if you don't go to branches			A., 2010	
		for your banking needs)				
	V05/INC-02	My bank has limited transaction	1 to 7		Liang, D. et al., 2012	FL: 0,76
		methods (e.g., bill payment)	(originally 1			Deleted: dimension of location
			to 5)			Original: Limited methods /
						locations for bill payment
	V14/INC-05		1 to 7		Liang, D. et al., 2012	FL: 0,74
		My bank has short opening hours of	(originally 1			Original construct: Short hours of
		branches (write "0" if you don't go to	to 5)			operations at branches
		branches for your banking needs)				
	V08/INC-04	My bank has long transaction	1 to 7		Liang, D. et al., 2012	FL: 0,5
		processing times for its services	(originally 1			Modified to switching RBS
			to 5)			Added: my bank has
						Deleted: at retailers
	V20/INC-06	My bank's facilities (ATM,s branches)	1 to 7	REV	Qualitative Study	
		are conveniently located to me			Project and Clemes et	
					al., 2010	

Figure A6.2: Survey constructs – items – indicators – references (pt. 6)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Pricing	V11/PRC-01	Fees and conditions for my banking	1 -7		Matzler, K. et al., 2006	Price Reliability
		services change unexpectedly	(in original			
4 Items			study 1-5)			Orginal: Prices and conditions do
1 Defense a hut						not change unexpectedly
1 Reference but						
subconstructsconst	V16/PRC-03	I am adequately informed about the	1 -7	REV	Matzler, K. et al., 2006	Price Transparency
ruct of pricing		fees for my banking services.	(in original			
within this			study 1-5)			Original: I am properly informed
reference						about the prices of the services
	V17/PRC-04	The fees I pay for my banking	1-7	REV	Matzler, K. et al., 2006	Price-Quality Ratio
	,	services are fair.	(in original		,,	Original: The prices I pay are fair
			study 1-5)			
			5000 2 57			
	V12/PRC-02	Overdrafts or short-term loans do	1 -7		Matzler K et al. 2006	Price Fairness
	V12/1 NC 02	not cause excessively high interest	(in original			
		rates	study 1-5)			Original: Overdrafts do not cause
			study 1-3)			abnormally high interest rates

Figure A6.2:	Survey constructs – items – indicators – references (pt. 3	7)
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Construct	Item	Indicator	Response Items requiring F		Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Service Failure	V09/SEF-05	In my opinion, the services of my bank are reliable.	1 to 7	REV	Qualitative Study Project	Formulation of question similar to other questions of P&P factors
7 Items	V10/SEF-06	Product and service offers of my bank are adequate for me.	1 to 7	REV	Qualitative Study Project	Formulation of question similar to other questions of Prepre Factors
3 References (2-2-3)						Changed: portfolio into offers because portfolio is a specialized term
	V03/SEF-02	The service personnel of my bank has a bad attitude (write "0" if you don't have any experience with your bank's service personnel).	1 to 7 (originally 1 to 5)		Liang, D. et al., 2012	0,76 Bad attitudes from service personnel
	V04/SEF-03	The service personnel of my bank shows unprofessional manners (write "0" if you don't have any experience with your bank's service personnel).	1 to 7 (originally 1 to 5)		Liang, D. et al., 2012	0,72 Service personnel's unprofessional manners
	V01/SEF-01	The differences between my bank's advertised/ promised and delivered services are high.	1 to 7		Keaveney, 1995 - exploratory study	Changed: Differences between promised (bought) services and delivered services are high
	V06/SEF-04	My bank has problems delivering the service(s) that I need.	1 to 7		Keaveney, 1995 - exploratory study	Changed: Problems in fulfilling the service
	V21/SEF-07	I encounter excessive delays in the banking services that I need.	1 to 7		Keaveney, 1995	 exploratory study Changed: Excessive delay in delivering the service

Figure A6.2: Survey constructs – items – indicators – references (pt. 8)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment	
		(Survey Question)	Format	reverse scoring			
Trust	V13/TRU 01	I feel that I can trust my bank	1 to 7		Bansal, 2004	Modified to Retail Banks	
		completely (agree-disagree)					
4 Items							
1. Defense	V13/TRU 01	I feel that I can trust my bank	1 to 7		Bansal, 2004	Modified to Retail Banks	
1 Reference		completely (agree-disagree)					
	V15/TRU-02	My bank is truly sincere in its	1 to 7	REV	Bansal, 2004	Modified to Retail Banks	
		promises (agree-disagree)					
	V18/TRU-03	My bank is honest and truthful with	1 to 7	REV	Bansal, 2004	Modified to Retail Banks	
		me (agree-disagree)					
	V19/TRU-04	My bank treats me fairly and justly	1 to 7	REV	Bansal, 2004	Modified to Retail Banks	
		(agree-disagree)					

Figure A6.2: Survey constructs – items – indicators – references (pt. 9)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment	
		(Survey Question)	Format	reverse scoring			
Power Distance 6 items	V56/POD-02	I believe that followers should	1 to 7		House et al., 2004, Globe Research Survey, 2006	Question their leaders when in disagreement – Obey their leaders without question	
2 References (4-2)	V68/POD-04	In organisations, subordinates are expected to_ their superior when in disagreement	1 to 7		House et al., 2004	Question – obey Original: In this organization, subordinates should	
	V69/POD-05	In organisations, high rank and position in the hierarchy should have special privileges:	1 to 7		House et al., 2004	Strongly agree – neither agree nor disagree – strongly disagree Formerly: In this organization,	
	V66/POD-03	I believe that a person's influence in this society should be based primarily on:	1 to 7		Globe Research Survey, 2006	primarily on: one's ability and contribution to the society - the authority of one's position	
	V71/POD-06	I believe that people in positions of power should try to:	1 to 7	REV	Globe Research Survey, 2006	increase their social distance from less powerful individuals - decrease their social distance from less powerful people	
	V47/POD-01	When in disagreement with adults, young people should obey elders	1 to 7		Globe Research Survey, 2006	Strongly agree – Neither agree nor disagree - strongly disagree Changed: Defer replaced by obey	

Figure A6.2: Survey constructs – items – indicators – references (pt. 10)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Uncertainty Avoidance	V50/UNC-02	I believe that orderliness and consistency should be stressed, even at the expense of experimentation.	1 to 7		House et al., 2004, Globe Research Survey, 2006	Strongly agree – neither agree nor disagree – strongly disagree
6 Items	V44-UNC-01	In organisations job requirements and instructions should be spelled	1 to 7		House et al., 2004	Strongly agree – neither agree nor disagree – strongly disagree
3 References (4-1-1)		out in detail so employees know what they are expected to do.				Formerly: In this organisation,
	V70/UNC-06	Uncertainty is a normal feature of life and each day is accepted as it comes. (Reverse)	1 to 7	REV	Based on Hofstede: Furrer, Liu, Sudharshan, 2000	Strongly agree – strongly disagree Problematic is that UA of Hofstede is according to Venaik and Brewer 2008 a totally different construct
	V58/UNC-03	I believe that a person who leads a structured life that has few unexpected events:	1 to 7	REV	Globe Research Survey, 2006	has a lot to be thankful for - is missing a lot of excitement Added: "routine activities along recurring schedules" as example for structured life
	V62/UNC-05	I believe that society should have rules or laws to cover	1 to 7		Globe Research Survey, 2006	almost all situations - some situations - very few situations
	V61/UNC-04	I believe that leaders in this society should:	1 to 7	REV	Globe Research Survey, 2006	provide detailed plans concerning how to achieve goals - allow the people freedom to Determine how best to Achieve Goals

Figure A6.2: Survey constructs – items – indicators – references (pt. 11)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
In-Group Collectivism 6 Items	V51/IGC-04	Children should take pride in the individual accomplishments of their parents	1 to 7		House et al., 2004, Globe Research Survey, 2006	Strongly agree – Neither agree nor disagree - strongly disagree Deleted: In this society, Deleted: individual (accomplishments)
2 References (4-2)	V43/IGC-01	In this society, I think that parents should take pride in the individual accomplishments of their children	1 to 7		House et al., 2004, Globe Research Survey, 2006	Strongly agree – Neither agree nor disagree - strongly disagree Added: I think Deleted: In this society, Deleted: individual (accomplishments)
	V49/IGC-03	In organisations group members should take pride in the individual accomplishments within their group	1 to 7		House et al., 2004	Strongly agree –strongly disagree Added: should Deleted: In this organisation, Changed: of into within
	V48/IGC-02	In organisations group managers take pride in the individual accomplishments of their group members	1 to 7		House et al., 2004	Strongly agree –strongly disagree Deleted: In this organisation
	V52/IGC-05	I believe that in general, leaders should encourage group loyalty even if individual goals need to be sacrificed.	1 to 7		Globe Research Survey, 2006	Strongly agree – Neither agree nor disagree - strongly disagree Added: need to be sacrificed Deleted: suffer
	V57/IGC-06	I believe that:	1 to 7	REV	Globe Research Survey, 2006	Group cohesion is better than individualism - group cohesion and individualism are equally valuable - individualism is better than group cohesion

Figure A6.2: Survey constructs – items – indicators – references (pt. 12)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Future Orientation	V67/FUT-05	I believe that people who are	1 to 7		House et al., 2004,	Take life events as they occur –
5 Items		successful should			Globe Research Survey, 2006	plan ahead
3 References (3-1-1)	V59/FUT-01	People should place more emphasis on	1 to 7		House et al., 2004	Solving current problems – planning for the future Added: should Deleted: In this society
	V60/FUT-02	People should focus on long term results	1 to 7		Based on Hofstede: Furrer, Liu, Sudharshan, 2000	Strongly agree – strongly disagree Added: focus on Deleted: be perseverant to
	V64/FUT-04	I believe that the accepted norm in this society should be to:	1 to 7	REV	Globe Research Survey, 2006	Plan for the future - accept the status quo
	V63/FUT-03	I believe that people should:	1 to 7		Globe Research Survey, 2006	Live for the present - live for the future

Figure A6.2: Survey constructs – items – indicators – references (pt. 13)

Construct	Item	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Performance Orientation	V46/PER-02	I believe that (teen-aged) students should be encouraged to strive for continuously improved performance.	1 to 7		House et al., 2004, Globe Research Survey, 2006	Strongly agree – Neither agree nor disagree - strongly disagree
6 Items	V54/PER-04	In organisations, members should be encouraged to strive for	1 to 7		House et al., 2004	Agree – disagree Deleted: In this organization
3 References (4-1-1)		continuously improved performance				employees Added: members
	V53/PER-03	I strive to continuously improve my performance.	1 to 7		Diehl et al, 2008	individual performance orientation practices original: I strive to continually improve my performance.
	V65/PER-06	I believe that major rewards should be based on:	1 to 7	REV	Globe Research Survey, 2006	Only performance effectiveness – performance effectiveness and other factors (for example, seniority or political connections) – Other factors (Except Performance Effectiveness) original answers category: only factors other than performance effectiveness (for example, seniority or political connections)
	V55/PER-05	I believe that being innovative to improve performance should be	1 to 7	REV	Globe Research Survey, 2006	Substantially rewarded - somewhat Rewarded - not rewarded
	V45/PER-01	I believe that people should set challenging goals for themselves.	1 to 7		Globe Research Survey, 2006	Strongly agree – Neither agree nor disagree - strongly disagree

Figure A6.2: Survey constructs – items – indicators – references (pt. 14)

Construct	ltem	Indicator	Response	Items requiring	Reference(s)	Comment
		(Survey Question)	Format	reverse scoring		
Demographic and	V76/DEM-01	Gender			Bansal, 1997; others	Answer Categories
Screening	V77/DEM-02	Ethnic Background			Bansal, 1997; others	Answer Categories
Questions	V78/DEM-03	Historic Background			Bansal, 1997; others	Answer Categories
	V79/DEM-04	Religious Orientation			Bansal, 1997; others	Answer Categories
	V80/DEM-05	Highest Educational Degree Achieved			Bansal, 1997; others	Answer Categories
	V81/DEM-06	Annual Personal Income			Bansal, 1997; others	Answer Categories
	V82/DEM-07	Age Group			Bansal, 1997; others	Answer Categories
	V83/DEM-08	What is your country of birth?			Bansal, 1997; others	Open Question
	V84/DEM-09	Which country do you identify the			Bansal, 1997; others	Open Question
		most with?				
	V85/DEM-10	Length of stay in the country you			Bansal, 1997; others	Open Question
		identify the most with?				
	V86/DEM-11	Number of years since you started			Bansal, 1997; others	Open Question
		working (part- or full-time)?				
	V87/DEM-12	How long have you been actively			Bansal, 1997; others	Open Question
		using banking services on your own?				
	F01/SCR-01	Residency Status			Bansal, 1997; others	Answer Categories
		How long have you been a Singapore			Bansal, 1997; others	Answer Categories
	F02/SCR-02	Citizen or Permanent Resident?				
		Do you have one or more personal			Bansal, 1997; others	Answer Categories
	F03/SCR-03	bank accounts?				
	F04/SCR-04	Are you 18 years of age or above?			Bansal, 1997; others	Answer Categories

Figure A6.2: Survey constructs – items – indicators – references (pt. 15)

A6.3 Instructions for Completing the Survey

MANCHESTER 1824 The University of Manchester Manchester Business School COMPLETING THE SURVEY								
There a questio corresp	There are two different types of questions in this questionnaire. An example of the first type of question is shown below. Questions always consist of answer choices from 1 to 7 and the corresponding question statement below. Parts belonging together are included in one box.							
<u>Type 1</u> the we unplea	<u>Type 1.</u> This type of questions asks you to rate something. Here as an example, on how pleasant the weather is in your country on a scale from 1 to 7. Let's assume your choice is "very unpleasant".							
Ver	ry esant			Neutral			Very	
1		2	3	4	5	6	7	
As this Do NO 1 <u>Type2.</u> Let's as	is your c T circle t This typ ssume yo	hoice, write he number e weather of e of questio ou select " <i>N</i>	e the correspo itself. f my country is . on asks how m <i>loderately</i> Agre	nding numl nuch you ag e" this time.	ber 1 into the b	lank box bel with a parti	ow as here. cular statement.	
Strou	nalu		Moderately		Moderately		Strongly	
Disag	gree	Disagree	Disagree	Neutral	Agree	Agree	Agree	
1		2	3	4	5	6	7	
Again Do N	Again if this is your choice, write the corresponding number 5 into the blank box below. Do NOT circle the number itself. 5 I like the weather of my country.							
 IMPORTANT: Do not miss nor leave out any questions. If you have two or more banking service providers, the provider which you use the most is referred to with the term "My Retail Backing Service Provider" in all questions. 								
•	Please a	lways choo	se only one of	ption and w	rite one numb	er in the field	d.	
•	Sections	; 1, 2 and 3	have question	s with two o	different forma	ts.		
•	Remem	ber the spe	cial definition	of switchi	ng in this surve	y: "Maintain	ning, reducing or	
	termina	ting the us	e of a specifi	ic Service a	t one Retail B	ank, and at	the same time,	
	starting	the use of t	the same servi	ce at a Reta	il Bank of a diff	erent brand.	" B	
•	Be alert	for reverse	scored items	and negativ	e formulations			

Figure A6.3: Completing the survey

A6.4 Definition of Key Terms



DEFINITIONS OF KEY TERMS

Retail Bank:

A company or business unit in the banking industry, serving individual customers rather than businesses or other banks. Examples in Singapore are DBS, POSB, OCBC, UOB, HSBC, Citibank, Maybank, CIMB, Standard Chartered or State Bank of India. Subsequently referred to as "bank".

Retail Banking Services:

Services provided by retail banks to customers. In exchange for money, time, and effort, customers expect to receive value from access to products, skills, facilities, networks and systems. Examples are savings and current accounts, ATM transactions, investments, deposits and loans or debit and credit cards. Subsequently referred to as "banking services".

Switching:

Maintaining, reducing or terminating the use of a specific service at one bank, and at the same time, starting the use of an equivalent service at a bank of a different brand.

Scenario 1: Maintaining service at Bank A and starting equivalent service at Bank B.



Scenario 2: <u>Reducing</u> service at Bank A and starting equivalent service at Bank B.





A6.5 Informed Consent Form

MANCHESTER
The University of Manchester Manchester Business School INFORMED CONSENT FORM
This research is conducted by a Doctoral Candidate at Manchester Business School (UK). The objective of
this research is to investigate Singapore Residents' retail banking behaviors.
For the purpose of this study, you are requested to complete a survey. The survey is solely for research
purposes. There is no or minimal risk to health, safety or welfare associated with your participation in
this study. Your participation is voluntary and you may withdraw at any time without any penalty.
Your responses in this study will be kept strictly confidential at all times. You will not be asked to provide
any identifying information such as your name, IC number, etc. As such, your identity can never be
determined by anyone who has access to the data.
The entire survey will take approximately 15-20 minutes to complete.
If you have any other questions about the research, please contact the researcher, Frank Siegfried by
Mobile phone +65 9786 6705 or Email: Frank.Siegfried@postgrad.manchester.ac.uk.
Thank you very much for your participation !
I understand the procedures described above, and I do not have any additional questions on the
procedures. I am 18 years of age or older. I acknowledge that I am participating in this survey of my own
free will. I understand that I may refuse to participate or stop my participation at any time without any
penalty. I will be given a copy of this consent form.
Name of Participant:
Signature of Participant:
Date:

Figure A6.5: Informed consent form

A6.6 Pre-testing for Survey Refinement

Survey testing and objective: Test for cultural sensitivities and ambiguous terms (1 – 19 October 2012)

Ethnic Group	Indian									
No.	Name	Gender	Age	Job	Date	Time	Venue			
1	****	М	55-60	Lecturer	04.10.12	10 am	UniSIM, his office			
2	****	F	20-25	Student	04.10.12	12:00 pm	Written feedback			
3	****	М	35-40	Lecturer	10.10.12	2:15 pm	UniSIM			
4	****	М	45-50	Lecturer	10.10.12	3:30 pm	UniSIM			

Ethnic Group	Malay									
No.	Name	Name Gender Age Job Date Time Venue								
5	****	Μ	30-35	Executive	02.10.12	3:30 pm	UniSIM, Lounge			
6	****	F	25-30	Executive	11.10.12	12 pm	UniSIM, Lunch			
7	****	F	35-40	Manager	11.10.12	4:30 pm	UniSIM, SASS			

Ethnic Group		Chinese									
No.	Name	Name Gender Age Job Date Time Venue									
8	****	Μ	35-40	Lecturer	08.10.12	4 pm	UniSIM, his office				
9	****	F	20-25	Student	09.10.12	5:30 pm	Restaurant				
10	****	F	35-40	Manager	11.10.12	3:30 pm	UniSIM, HDSS				
11	****	М	50-55	Assist. Prof.	16.10.12	4:30 pm	UniSIM, HDSS				

Survey Design Reviews: 18 – 23 October 2012

Review		Chinese									
No.	Name	Name Gender Age Job Date Time Venue									
Α	****	М	45-50	Assist. Prof.	22.10.12	4:00 pm	UniSIM, SBIZ				
В	****	***** M 45-50 Assist. Prof. 15.10.12 4:30 pm UniSIM, SASS									

Survey testing and objective: Test for reliability of scales (18 – 25 October 2012)

Reference	SMU / TWC / G22	SMU / GMT / G1	SMU / TWC / G23	Total
Date	Wed, 17.10.12,	Thu, 18.10.12,	Sat, 20.10.12,	
	5:00 pm	7:00 pm	9:00 am	
Actual no. of respondents	44	33	41	118
Actual no. of Informed	44	30	41	115 ¹
Consent Forms				
Research Assistants	****	****	****	
conducting the survey				

¹ Three surveys were randomly selected and discarded to align no. of surveys with no. of Informed consent forms

Reference	SMU / GMT / G3	SMU / TWC / G12	SMU / GMT / G1	SMU / GMT / G2	Total
Date	Wed, 23.01.13	Thu, 24.01.13	Thu, 24.01.13	Thu, 24.01.13	
	7:00 pm	11:15 am	18:00 pm	19:00 pm	
Actual no. of	36	37	32	32	137
respondents					
Actual no. of	36	37	32	32	137
Informed					
Consent Forms					
Research	****	****	****	****	
Assistants					
conducting the					
survey					

Survey testing and objective: Test for reliability of scales (23 – 24 January 2013)

Figure A6.6: Pre-testing for survey refinement

A6.7 Cronbach's Alpha and Factor Loadings (Survey Beta Version)

Theories and Models	Constructs	ltem Number	Short	Reverse Coding	Factor Loadings	Problematic Factor Loadings	Cronbach Alpha Reliability (N=137) including CA Values in Original GLOBE Study	Reliability Testing in Original Study
		V33.	BIS-01			none		
	Switching	V35.	BIS-02		dependent			
	Intention (BIS)	V36.	BIS-03		variable		0.89	alpha
		V37.	BIS-04		runabie			
		V34.	BIS-05					
	Attitudo	V28.	ATT-01		0.72	none		
	towards Switching (ATT)	V18.	ATT-02	yes	0.74			
		V19.	ATT-03		0.68		0.84	alpha
Theory of		V21.	ATT-04		0.79			
Planned		V22.	ATT-05		0.74			
Behaviour		V25.	SUN-01		0.70	IGC-02: 0,459		
(TPB)	Subjective	V29.	SUN-02		0.51	POD-03: 0,334		
	Norms	V24.	SUN-03		0.58		0.69	alpha
	(SUN)	V30.	SUN-04		< 0,3			
		V32.	SUN-05		0.32			
	Demostrand	V23.	PBC-01		0.51	none		
	Perceived	V26.	PBC-02	yes	0.65			
	General	V27.	PBC-03		0.50		0.72	alpha
	Control	V20.	PBC-04		0.46			
	(PBC)	V31.	PBC-05		0.61			
Deat	Deat	V60.	PAS-01	yes	< 0,3	POD-02: 0,525		
Past	PdSt	V63.	PAS-02	yes	0.69		0.40	
benaviour	Switching	V61.	PAS-03		0.70		0.46	n.a.
(PAS)	(PAS)	V62.	PAS-04		< 0,3			

Theories and Models	Constructs	ltem Number	Short	Reverse Coding	Factor Loadings	Problematic Factor Loadings	Cronbach Alpha Reliability (N=137) including CA Values in Original GLOBE Study	Reliability Testing in Original Study
	Samica	V11.	SEF-01	yes	no factor	strong loadings		
	Service	V12.	SEF-02	yes		of 01 and 02 on	0.59	factor
		V13.	SEF-03			TRU factor	0.56	Tactor
	(367)	V14.	SEF-04					
		V1.	INC-01	yes	< 0,3	SEF-03: 0,590		
	Inconvonionco	V2.	INC-02		0.63	strong loadings		
Predisposing	(INC)	V3.	INC-03		0.67	of 04 and 05 on	0.35	factor
and	(INC)	V7.	INC-04	yes	< 0,3	PRC factor		
Precipitating		V8.	INC-05	yes	< 0,3			
Factors	Duising	V4.	PRC-02		0.31	INC-05R: 0,737		
	Pricing	V5.	PRC-03	yes	0.51	INC-04R: 0,665	0.64	fastan
	Issues (DDC)	V6.	PRC-04	yes	0.44	PAS-01R: 0,404	0.64	Tactor
	(PRC)	V17.	PRC-01	yes	< 0,3			
		V9.	TRU-01	yes	0.79	SEF-01R: 0,754		
	Lack of Trust (TRU)	V10.	TRU-02	ves	0.80	SEF-02R: 0,445		
		V15.	TRU-03	yes	0.64		0.81	alpha
		V16.	TRU-04	yes	0.60			
		V44.	IGC-01		0.53	PER-01: 0,765		
	In-Group	V45.	IGC-02		< 0,3	PER-02: 0,716	0.44	n.a.
	Collectivism	V38.	IGC-03		0.51			
	(IGC)	V51.	IGC-04	yes	< 0,3		Original GLOBE Survey: 0.66	
		V47.	POD-01		0.69	FUT-02R: -0,451		
	Power	V57.	POD-02		< 0,3	, ,		
	Distance	V54.	POD-03		0.33		0.33	n.a.
	(POD)	V59.	POD-04	yes	< 0,3			
		V41.	POD-05		< 0,3		Original GLOBE Survey: 0.74	
		V42.	UNC-01		0.84	POD-05: 0,483		
GLOBE	Uncertainty	V43.	UNC-02		0.51	POD-04R: 0,325	0.05	
Dimension	Avoidance	V48.	UNC-03	yes	< 0,3	SEF-04: 0,360	0.36	n.a.
	(UNC)	V50.	UNC-04		< 0,3			
		V49.	UNC-05	yes	< 0,3		Original GLOBE Survey: 0.85	
	_	V40.	PER-01		0.77	IGC-01: 0,534		
	Performance	V39.	PER-02		0.72	IGC-03: 0,508	0.43	n.a.
	Urientation	V53.	PER-03	yes	< 0,3	1		
	(POD)	V46.	PER-04	yes	< 0,3	1	Original GLOBE Survey: 0.9	
		V56.	FUT-01		0.78	POD-02: 0,331		
	Future	V55.	FUT-02	yes	0.42	1 '	0.42	n.a.
	Orientation	V52.	FUT-03	,	0.62	1		
	(FUT)	V58.	FUT-04	yes	< 0,3	1	Original GLOBE Survey: 0.76	

Figure A6.7: CA and factor loadings (survey beta version)

Theories and Models	Constructs	ltem Number	Short	References	CA calculation of benchmark in past studies*	CA calculation for all items in DBA Survey
		V38	BIS-01	Francis et al.,2004	-	
	Switching	V39	BIS-02"	Bansal & Taylor, 2002	0.90	
	Intention	V40	BIS-03	Bansal & Taylor, 2002	0.50	0.88
	(BIS)	V41	BIS-04	Ajzen, website 2012	-	
		V42	BIS-05	Ajzen, website 2012	-	
	Attitudo	V22	ATT-01	Bansal & Taylor, 2002		
	towards	V23	ATT-02	Bansal & Taylor, 2002		
	LUWarus	V25	ATT-03	Bansal & Taylor, 2002	0.93	0.79
Theory of	Switching (ATT)	V32	ATT-05"	Bansal & Taylor, 2002		
Dispand	(ATT)	V26	ATT-04"	Bansal & Taylor, 2003		
Planned		V28	SUN-01	Ajzen, website 2012	-	
Benaviour (TOP)	Subjective	V29	SUN-02"	Bansal & Taylor, 2002	0.85	
(168)	Norms	V33	SUN-03"	Bansal & Taylor, 2002	0.85	0.65
	(SUN)	V35	SUN-04	Ajzen, website 2012		
		V37	SUN-05	Ajzen, website 2012	_	
		V27	PBC-02	Bansal, 1997	-	
		V24	PBC-01	Bansal, 1997		
	Perceivea	V30	PBC-03	Bansal, 1997	0.00	
	Behaviourai	V31	PBC-04	Bansal, 1997	0.82	0.7
	Control (PBC)	V34	PBC-05	Bansal, 1997		
		V36	PBC-06	Ajzen, website 2012	-	
B 1	Past	V72	PAS-01	Based on Han et al., 2012	-	
Past	Experience	V73	PAS-02	Based on Han et al., 2012	-	
Switching	Past	V74	PAS-03	Aizen, website 2012	-	
(PAS)	Frequency	V75	PAS-04	Hsieh, JK., et al. 2012	-	
		V09	SEF-05	Qualitative Project	-	
		V10	SEF-06	Qualitative Project	_	
	Service	V03	SEF-02	Liang et al., 2012	0.76 factor loading	
	Failure	V04	SEF-03	Liang et al., 2012	0.72 factor loading	
	(SEF)	V01	SEF-01	Based on Keaveney, 1995	-	
	` '	V06	SEF-04	Based on Keaveney, 1995	-	
		V21	SEF-07	Based on Keaveney, 1995	-	
		V02	INC-01	Liang et al., 2012	0.79 factor loading	
Predisposing		V05	INC-02	Liang et al., 2012	0.76 factor loading	
and	Incon-	V08	INC-04	Liang et al., 2012	0.50 factor loading	
Precipitating	venience	V14	INC-05	Liang et al 2012	0.74 factor loading	
Factors	(INC)	V07	INC-03	Oualitative Proiect	-	
(P & P)		V20	INC-06	Oualitative Proiect	_	
(,		V11	PRC-01	Matzler et al., 2006	-	
	Pricing Issues	V12	PRC-02	Matzler et al., 2006	-	
	(PRC)	V16	PRC-03	Matzler et al 2006	-	
	(,	V17	PRC-04	Matzler et al 2006	-	
		V13	TRU-01	Bansal et al., 2004		
	Lack of Trust	V15	TRU-02	Bansal et al., 2004	-	
	(TRU)	V18	TRU-03	Bansal et al., 2004	0.94	0.84
	(110)	V19	TRU-04	Bansal et al., 2004		

A6.8 Cronbach's Alpha Comparison with Reference Studies (Final Survey)

Theories and Models	Constructs	ltem Number	Short	References	CA calculation of benchmark in past studies*	CA calculation for all items in DBA Survey
		V49	IGC-03"	House et al., 2004	-	
	In Group	V48	IGC-02	House et al., 2004	-	
	Collectivism	V43	IGC-01"	Globe Research Survey, 2006		0.72
	(ICC)	V51	IGC-04"	Globe Research Survey, 2006	0.66	0.72
	(160)	V52	IGC-05"	Globe Research Survey, 2006	0.00	
		V56	IGC-06	Globe Research Survey, 2006		
		V47	POD-01	Globe Research Survey, 2006		
	Dowor	V56	POD-02	Globe Research Survey, 2006	0.74	
	Distance	V66	POD-03	Globe Research Survey, 2006	0.74	0.55
	Distance (POD)	V71	POD-06	Globe Research Survey, 2006		0.55
		V68	POD-04	House et al., 2004		
		V69	POD-05	House et al., 2004		
Dimensions		V44	UNC-01	House et al., 2004	-	0.45
adapted from		V42	UNC-02	Globe Research Survey, 2006		
the GLOBE	Avoidance	V58	UNC-03"	Globe Research Survey, 2006	0.95	
study	AVOIDATICE	V61	UNC-04	Globe Research Survey, 2006	0.85	
(GLOBE)	(UNC)	V62	UNC-05	Globe Research Survey, 2006		
		V70	UNC-06	Furrer, Liu, Sudharshan, 2000	-	
		V45	PER-01	Globe Research Survey, 2006		
	Dorformonco	V46	PER-02	Globe Research Survey, 2006	0.90	
	Orientation	V55	PER-05	Globe Research Survey, 2006	0.50	0.71
		V65	PER-06	Globe Research Survey, 2006		0.71
	(PER)	V53	PER-03	Diehl et al.,2008	-	
-		V54	PER-04"	House et al., 2004	-	
		V59	FUT-01"	House et al., 2004	-	
	Future	V60	FUT-02	Furrer, Liu, Suddharshan, 2000	-	0.58
	Orientation	V63	FUT-03	Globe Research Survey, 2006		
	(FUT)	V64	FUT-04	Globe Research Survey, 2006	0.76	
		V67	FUT-05	Globe Research Survey, 2006		

Legend:

Minor change in wording

CA calculation in original study may include items that will not be used in this study

Figure A6.8: CA comparisons with reference studies (final survey); Grey areas represent the highest number of items per construct when using the same source (reference or research study)

A6.9 Discussion of Data Cleaning Routines

Editing Approach

The importance of data cleaning and editing is widely unrecognized in the field of survey methodology. Most standard works on RM and survey design dismiss the topic with a few general remarks about the need for cleaning and editing rules (Akremi, Baur, & Fromm, 2011; Schnell, Hill, & Esser, 2005; Singleton & Straits, 2005; Wolf & Best, 2010) or omit the topic altogether (Field, 2005), leaving the specifics up to the researcher. In practice, most editing decisions are based on experience, informal

exchange with fellow researchers, or simply "gut feeling" (Martinson, Anderson, & de Vries, 2005). Leahey, Entwisle, and Einaudi (2003), who illustrate in their study with tenured faculty members of 88 US universities in three disciplines (sociology, anthropology and psychology) that the perceived standards and scientific protocols to be followed for data editing are not commonly agreed upon. The study goes on to show that the high range of different opinions holds true even if the sample is reduced to elite researchers within the sample (Leahey et al., 2003). Therefore, this research will restrict itself to dealing with inconsistencies and messy data, i.e.

- a) Contradictive answer patterns
- b) Coding errors (e.g., hardcopies missing or strongly deviating from the dataset)
- c) Impossible values.

Even with this restriction, the question of how to conduct the task of data cleaning in particular is not clearly answered in common literature. While the most accepted practice is to pass this responsibility on to data analysts (Sana & Weinreb, 2008), i.e. the highest ranking academics, this is not necessarily best practice. As indicated by Sana and Weinreb (2008), fieldworkers with undergraduate education, but hands-on experience in the survey sites can make significantly more accurate data editing decisions than high-profile academics who usually take care of this task. Fieldworkers often remember the original interview situation, or at least similar situations, and can assess the integrity of the data more accurately than a data editor on his/her own. Another strong point for a guideline-driven process of field editing is the fact that it is likely to take place either way - with or without specific instructions, because most fieldworkers have strong incentives to deliver high quality data, i.e. data with as few inconsistencies and missing information as possible to enable immediate analysis. On the other hand, the use of systematic editing rules is a long standing standard in survey research, unrivaled by any human form of error detection when it comes to reliably discovering inconsistencies (Manzari, 2004). In short, the strength of field editors is to judge the validity of edits, whereas the strength of computerized and statistically proficient editing procedures is *reliability* (Sana & Weinreb, 2008).

In this study, the researcher combines the benefits of both methods through an alternating editing process. The interface between the two ends of his editing process

is the *soft editing rules*, which use computerized methods to obtain indicators of possible bad quality data. The results of these tests are then discussed with the surveyors (research assistants) and, if necessary, removed from the dataset. Both intra-individual (rules for consistencies between individuals) and inter-individual (rules for consistencies between individuals) and inter-individual (rules for consistencies between individuals) and inter-individual (rules for consistency for a single individual) rules are applied in both ends. The most common recommendation for questionable data is using "callbacks", i.e. to go back to the respondents and re-interview them about the original question (Sana & Weinreb, 2008, p. 521). Due to the potentially sensitive topic of this study, respondents' answers were given under the condition of anonymity, making this primary route of editing unavailable. Based on real-life examples on field editing as well as standard literature on survey methodology, a number of editing steps were implemented. The following section outlines those steps and the editing rules connected with them.

Data cleaning during survey: Field editing

Based on a real-world example from an internationally recognized survey (Macro International, 2007), the following field editing instructions were amended and then applied according to the survey situation:

- 1. Research assistants were given the *soft* editing rules to *assess* cases during survey collection:
 - a) Mark surveys from dishonest respondents and record them in your logbook. This decision is based on the surveyor's field experience (e.g., too short answer time, strong reluctance to participate and other key indicators).
 - b) Mark survey from respondents with severe language problems and record them in your logbook.
 - c) Advise your supervisors about questionnaires of low integrity and discuss your notes with them. If deemed invalid, the questionnaires will be excluded from the dataset.
- 2. Research assistants were given the following *hard* editing rules to *modify* cases during survey collection:
 - a) All answers must be readable. If necessary, ask the respondent on the spot to correct the entry.
 - b) All answers must be within the valid range of their respective variables. If necessary, ask the respondent on the spot to correct the entry.
 - c) All answers in the demographic section must be consistent. Check for inconsistencies in the age-related variables and check if all open questions that apply for the respondent have been answered. If necessary, ask the respondent on the spot to correct the entry.
Coding and data verification after survey collection

When it comes to data editing, Groves et al. (2004) is one of the most popularly cited standard works of methodology, as it provides a profound summary that includes actual examples and guidelines for editing rules that should be implemented. A related issue that the authors consistently address before the discussion of editing is coding, i.e. transferring the data to the software program. To ensure a reliable coding procedure, they argue, there is much evidence that the rate of entry error is quite low as long as re-keying and verification of entries is done Groves et al. (2004). This researcher, however, believes that the coding process is not a standalone issue, but also an inherent part of the data *editing* process and cannot be viewed entirely separate from it. Furthermore, the verification of data entries will necessarily confront the coder with editing decisions. This is not only the case due to formal errors that were produced during the initial coding, but also due to inconsistencies that were not dealt with during the field stage and that require some kind of action – such as excessive amounts of missing data, contradictive answers or related issues.

In this study, these problems were addressed with verification rules. Every data entry was verified against the corresponding hardcopy. This was done first by another coder, then again by a supervisor. Errors were dealt with according to the following rules:

- a) If coding errors are found, edits are made in the dataset
- b) If inconsistent or illogical answers are found, the data is left intact according to the hardcopy and a note is made. Inconsistencies will be dealt with in the final editing stage
- c) If hardcopies could not be found, were corrupted or deviated very strongly from the dataset, cases were eliminated from the dataset. Eliminations are recorded in a logbook
- d) All changes and exclusions and their respective reasons are stored and can be revoked through the use of spreadsheets and a version history of the dataset

Final Data Cleaning

The final data cleaning is implemented in two steps, both of which are based on the field editing guidelines of Macro International (2007), Sana and Weinreb (2008), Groves et al. (2004) and Lück (2011).

Soft Editing

The first step involves a final discussion with the interviewers and is based on a set of *soft* editing rules that are tested with spreadsheet software and used as pointers for data of low quality. All questionable cases are discussed with the research assistants in person in order to decide on exclusion:

1. Tests for no duplicate cases

- a) Exact duplicate: tests if any two or more cases have the same answers for V01 V75
- Fuzzy duplicate: tests if any two or more cases have at least 65 identical answers for V01 – V75
- c) All duplicate cases are taken up for discussion with the research assistants who conducted the surveys. If the source of the duplicate lacks credibility, the case will be eliminated

2. Tests for biased response patterns:

- a) Tendency bias: tests if any answer occurs more than 25 times within a single case and gives out the concerning answer and its precise count in a separate column
- b) Continuity bias: tests if any answer is given more than 7 times *in a row* within a single case and gives out the precise count of continuous occurrences in a separate column
- c) Standard deviation within case: If the standard deviation of answers across questions V01-V75 is lower than 1, then there is a high likelihood of a tendency bias
- 3. All three indicators are stored in separate variables. If all three indicators are active or one of them has an exceptionally high value (e.g., 90% of the responses have the same answer), the cases in question are taken up for discussion with the interviewers. If their logbook records indicate that the respondent had an inclination to give dishonest responses or had severe difficulties understanding the questions, the cases are taken out of the dataset.
- 4. The following questions *should*, but do not need to have similar answers:
 - a) V22 and V25
 - b) V24 and V27 and V34
 - c) V28 and V29
 - d) V39 and V40
 - e) V52 and V57
 - f) V56 and V68
 - g) V59 and V60
 - h) Contradictory answer combinations are stored in a dummy variable that counts "1" for a contradiction and "0" for no contradiction (Lück, 2011)
 - The number of contradictory answers is counted in a separate variable. A high number (> 3) hints at a random answer pattern. The cases in question are taken up for discussion with the research assistants. If their logbook records indicate that the

respondent had an inclination to give dishonest responses or had severe difficulties understanding the questions, the cases are taken out of the dataset.

5. Only a certain range of answers is likely for continuous variables (such as the number of active banking years). A boxplot with a confidence interval of 95% is used to identify outliers. The outliers values are then checked for plausibility and their exclusion decided individually – if possible, after confirmation with the respondent or the interviewer (Lück, 2011)

Hard Editing: Test for mistakes, outliers and contradictions

The second step is an application of computer-assisted *hard* rules that define exactly when a case needs to be eliminated (Groves et al., 2004; Lück, 2011; Pötschke, 2010). Many of these edits are similar or identical to the edits made in the field, but due to the inability to access the original respondents the remaining errors are interpreted as missing values or as disqualifying the respondent.

1. Respondents with disqualifying responses to screener questions are removed

a. Respondents that are not eligible for the survey should have been filtered out by the surveyors, but a few erroneous interviews may remain. The respondents with disqualifying or missing answers to the screener questions are removed from the dataset

2. Range of possibility

- a. Only a certain range of values is valid for each question. The *frequencies* analysis in SPSS with *max*. and *min*. options enabled allows to spot invalid values such as
 - i. Values above "7" or below "1" for the Likert-scaled items
 - ii. "99", "9" or "0" values, which reveal mistakes in the definition of missing values
 - iii. Undefined values for demographic questions, such as "3" for gender
- b. All impossible or invalid values will be reentered as missing values (Lück, 2011)

3. No empty fields are allowed in the dataset. Empty fields are recoded as missing values.

4. Test for contradictory answer patterns (Pötschke, 2010)

- a. The following age-related questions should have arithmetically matching answers:
 - i. V85 and V82
 - ii. V86 and V82
 - iii. V87 and V82
- b. If the error can't be corrected (by double-checking the hardcopy and consulting the interviewer), the relevant answers will be re-entered as missing values (Lück, 2011).

A6.10 Sample Adjustments

Age		Chin	ese	Ma	llay	Indi	an	Oth	iers	То	tal
		Μ	F	М	F	Μ	F	Μ	F	Μ	F
20-24		95 (4.6%)	94 (4.5%)	25 (1.2%)	23 (1.1%)	11 (0.5%)	11 (0.5%)	3 (0.1%)	5 (0.2%)	133 (6.4%)	133 (6.4%)
25-29		89 (4.3%)	94 (4.5%)	20 (1.0%)	20 (1.0%)	12 (0.6%)	14 (0.7%)	3 (0.1%)	5 (0.2%)	123 (5.9%)	132 (6.4%)
30-34		101 (4.9%)	112 (5.4%)	16 (0.8%)	17 (0.8%)	18 (0.8%)	18 (0.9%)	6 (0.3%)	8 (0.4%)	141 (6.8%)	155 (7.5%)
35-39		109 (5.3%)	121 (5.8%)	15 (0.7%)	16 (0.8%)	20 (1.0%)	16 (0.8%)	8 (0.4%)	9 (0.4%)	152 (7.4%)	162 (7.8%)
40-44		109 (5.3%)	119 (5.8%)	17 (0.8%)	18 (0.8%)	18 (0.9%)	13 (0.6%)	8 (0.4%)	8 (0.4%)	151 (7.3%)	158 (7.6%)
45-50		118 (5.7%)	120 (5.8%)	22 (1.0%)	22 (1.1%)	16 (0.8%)	13 (0.6%)	6 (0.3%)	6 (0.3%)	161 (7.8%)	160 (7.7%)
50-54		119 (5.7%)	118 (5.7%)	21 (1.0%)	21 (1.0%)	13 (0.6%)	11 (0.5%)	4 (0.2%)	4 (0.2%)	157 (7.6%)	154 (7.4%)
	Totals	740 (35.8%)	778 (37.6%)	134 (6.5%)	136 (6.6%)	107 (5.2%)	95 (4.6%)	37 (1.8%)	43 (2.1%)	1018 (49.2%)	1052 (50.8%)
			1519 (73.4%)		270 (13.0%)		202 (9.8%)		80 (3.8%)		2070 (100.0%)

Singstat population distribution, absolute numbers in 1,000 and percentages (relevant age groups)

Table A6.10.1: Demographic structure of the Singapore resident population (2012)

Age		Chir	nese	Ma	lay	Ind	ian	Oth	ners	To	tal
		Μ	F	Μ	F	Μ	F	Μ	F	Μ	F
20-24		80 (5.3%)	134 (8.9%)	10 (0.7%)	17 (1.1%)	4 (0.3%)	14 (0.9%)	10 (0.7%)	13 (0.9%)	104 (6.9%)	178 (11.8%)
25-29		196 (13.0%)	127 (8.4%)	15 (1.0%)	7 (0.5%)	17 (1.1%)	15 (1.0%)	11 (0.7%)	14 (0.9%)	239 (15.8%)	163 (10.8%)
30-34		48 (3.2%)	64 (4.2%)	7 (0.5%)	5 (0.3%)	7 (0.5%)	9 (0.6%)	6 (0.4%)	10 (0.7%)	68 (4.5%)	88 (5.8%)
35-39		39 (2.6%)	49 (3.2%)	7 (0.5%)	5 (0.3%)	4 (0.3%)	10 (0.7%)	3 (0.2%)	3 (0.2%)	53 (3.5%)	67 (4.4%)
40-44		26 (1.7%)	39 (2.6%)	2 (0.1%)	3 (0.2%)	8 (0.5%)	7 (0.5%)	3 (0.2%)	4 (0.3%)	39 (2.6%)	53 (3.5%)
45-50		27 (1.8%)	59 (3.9%)	3 (0.2%)	5 (0.3%)	7 (0.5%)	7 (0.5%)	3 (0.2%)	1 (0.1%)	40 (2.7%)	72 (4.8%)
50-54		52 (3.4%)	77 (5.1%)	4 (0.3%)	6 (0.4%)	7 (0.5%)	5 (0.3%)	4 (0.3%)	7 (0.5%)	67 (4.4%)	95 (6.3%)
> 55		79 (5.2%)	83 (5.5%)	1 (0.1%)	1 (0.1%)	10 (0.7%)	6 (0.4%)	1 (0.1%)	1 (0.1%)	91 (6.0%)	91 (6.0%)
	Totals	547 (36.3%)	632 (41.9%)	49 (3.2%)	49 (3.2%)	64 (4.2%)	73 (4.8%)	41 (2.7%)	53 (3.5%)	701 (46.5%)	807 (53.5%)
			1179 (78.2%)		98 (6.5%)		137 (9.1%)		94 (6.2%)	1	508 (100.0%)

Sample demographics after one round of data collection (all age groups)

Table A6.10.2: Initial demographic structure of the sample after the first round of data collection (all age groups, N = 1,508)

Age		Chir	iese	Ma	lay	Ind	ian	Oth	ners	Т	otal
		М	F	Μ	F	Μ	F	М	F	Μ	F
20-24		80 (6.0%)	134 (10.1%)	10 (0.8%)	17 (1.3%)	4 (0.3%)	14 (1.1%)	10 (0.8%)	13 (1.0%)	104 (7.8%)	178 (13.4%)
25-29		196 (14.8%)	127 (9.6%)	15 (1.1%)	7 (0.5%)	17 (1.3%)	15 (1.1%)	11 (0.8%)	14 (1.1%)	239 (18.0%)	163 (12.3%)
30-34		48 (3.6%)	64 (4.8%)	7 (0.5%)	5 (0.4%)	7 (0.5%)	9 (0.7%)	6 (0.5%)	10 (0.8%)	68 (5.1%)	88 (6.6%)
35-39		39 (2.9%)	49 (3.7%)	7 (0.5%)	5 (0.4%)	4 (0.3%)	10 (0.8%)	3 (0.2%)	3 (0.2%)	53 (4.0%)	67 (5.1%)
40-44		26 (2.0%)	39 (2.9%)	2 (0.2%)	3 (0.2%)	8 (0.6%)	7 (0.5%)	3 (0.2%)	4 (0.3%)	39 (2.9%)	53 (4.0%)
45-50		27 (2.0%)	59 (4.4%)	3 (0.2%)	5 (0.4%)	7 (0.5%)	7 (0.5%)	3 (0.2%)	1 (0.1%)	40 (3.0%)	72 (5.4%)
50-54		52 (3.9%)	77 (5.8%)	4 (0.3%)	6 (0.5%)	7 (0.5%)	5 (0.4%)	4 (0.3%)	7 (0.5%)	67 (5.1%)	95 (7.2%)
	Totals	468 (35.3%)	549 (41.4%)	48 (3.6%)	48 (3.6%)	54 (4.1%)	67 (5.1%)	40 (3.0%)	52 (3.9%)	610 (46.0%)	716 (54.0%)
			1017 (76.7%)		96 (7.2%)		121 (9.1%)		92 (6.9%)		1326 (100.0%)

Sample demographics after one round of data collection (all age groups)

Table A6.10.3: Demographic structure of the sample after the first round of data collection (N = 1,326)

Age		Chir	iese	Ma	lay	Ind	ian	Oth	ers	To	tal
		М	F	Μ	F	Μ	F	Μ	F	Μ	F
20-24		82 (4.6%)	136 (7.7%)	17 (1.0%)	21 (1.2%)	5 (0.3%)	14 (0.8%)	11 (0.6%)	13 (0.7%)	115 (6.5%)	184 (10.4%)
25-29		216 (12.2%)	136 (7.7%)	22 (1.2%)	17 (1.0%)	23 (1.3%)	20 (1.1%)	14 (0.8%)	19 (1.1%)	275 (15.6%)	192 (10.9%)
30-34		67 (3.8%)	84 (4.8%)	11 (0.6%)	14 (0.8%)	13 (0.7%)	12 (0.7%)	6 (0.3%)	10 (0.6%)	97 (5.5%)	120 (6.8%)
35-39		67 (3.8%)	72 (4.1%)	8 (0.5%)	10 (0.6%)	10 (0.6%)	10 (0.6%)	5 (0.3%)	4 (0.2%)	90 (5.1%)	96 (5.4%)
40-44		66 (3.7%)	72 (4.1%)	8 (0.5%)	11 (0.6%)	13 (0.7%)	9 (0.5%)	3 (0.2%)	4 (0.2%)	90 (5.1%)	96 (5.4%)
45-50		70 (4.0%)	78 (4.4%)	8 (0.5%)	14 (0.8%)	9 (0.5%)	9 (0.5%)	4 (0.2%)	1 (0.1%)	91 (5.2%)	102 (5.8%)
50-54		74 (4.2%)	89 (5.0%)	11 (0.6%)	15 (0.9%)	8 (0.5%)	5 (0.3%)	5 (0.3%)	9 (0.5%)	98 (5.6%)	118 (6.7%)
	Totals	642 (36.4%)	667 (37.8%)	85 (4.8%)	102 (5.8%)	81 (4.6%)	79 (4.5%)	48 (2.7%)	60 (3.4%)	856 (48.5%)	908 (51.5%)
			1309 (74.2%)		187 (10.6%)		160 (9.1%)		108 (6.1%)	1	764 (100.0%)

Sample demographics after two rounds of data collection (relevant age groups)

Table A6.10.4: Demographic structure of the sample after the second round of data collection (N = 1,764)

Age		Chinese		Ma	Malay		ian	Oth	ners
		Μ	F	Μ	F	Μ	F	М	F
20-24		2.1%	5.7%	0.2%	0.3%	0.1%	0.5%	0.6%	0.7%
25-29		10.0%	5.2%	0.3%	0.2%	0.7%	0.5%	0.6%	0.8%
30-34		0.2%	0.5%	0.1%	0.2%	0.1%	0.0%	0.2%	0.4%
35-39		1.1%	0.8%	0.0%	0.2%	0.4%	0.1%	0.1%	0.1%
40-44		2.0%	1.5%	0.4%	0.4%	0.1%	0.0%	0.1%	0.0%
45-50		2.2%	0.1%	0.5%	0.4%	0.1%	0.0%	0.0%	0.1%
50-54		0.6%	1.1%	0.4%	0.3%	0.0%	0.1%	0.1%	0.3%
> 55		6.8%	7.2%	1.3%	1.5%	0.2%	0.5%	0.2%	0.1%
	Maximum	10.0%	7.2%	1.3%	1.5%	0.7%	0.5%	0.6%	0.8%

Sample and	population	distribution	differences	(N=1.508)
•••••••••••••••••••••••••••••••••••••••			0	

Table A6.10.5: Differences in sample and population distribution after the first round of data collection (N = 1,508)

Age	Age		Chinese		Malay		Indian		ners
		М	F	Μ	F	Μ	F	Μ	F
20-24		0.1%	3.2%	0.2%	0.1%	0.2%	0.2%	0.5%	0.5%
25-29		8.0%	3.2%	0.3%	0.0%	0.7%	0.5%	0.7%	0.9%
30-34		1.1%	0.6%	0.1%	0.0%	0.1%	0.2%	0.1%	0.2%
35-39		1.5%	1.8%	0.3%	0.2%	0.4%	0.2%	0.1%	0.2%
40-44		1.5%	1.7%	0.3%	0.2%	0.1%	0.1%	0.2%	0.2%
45-50		1.7%	1.4%	0.6%	0.3%	0.2%	0.1%	0.1%	0.2%
50-54		1.5%	0.7%	0.4%	0.1%	0.2%	0.3%	0.1%	0.3%
	Maximum	8.0%	3.2%	0.6%	0.3%	0.7%	0.5%	0.7%	0.9%

Sample and population distribution differences (N=1,764)

Table A6.10.6: Differences in sample and population distribution after two rounds of data collection (N = 1,764)

Age		Chines	e	Malay		Indian		Others	1	Total	
		М	F	М	F	Μ	F	М	F	Μ	F
20-24		4.6%	4.5%	1.2%	1.1%	0.5%	0.5%	0.1%	0.2%	6.4%	6.4%
25-29		4.3%	4.5%	1.0%	1.0%	0.6%	0.7%	0.1%	0.2%	5.9%	6.4%
30-34		4.9%	5.4%	0.8%	0.8%	0.8%	0.9%	0.3%	0.4%	6.8%	7.5%
35-39		5.3%	5.8%	0.7%	0.8%	1.0%	0.8%	0.4%	0.4%	7.4%	7.8%
40-44		5.3%	5.8%	0.8%	0.8%	0.9%	0.6%	0.4%	0.4%	7.3%	7.6%
45-50		5.7%	5.8%	1.0%	1.1%	0.8%	0.6%	0.3%	0.3%	7.8%	7.7%
50-54		5.7%	5.7%	1.0%	1.0%	0.6%	0.5%	0.2%	0.2%	7.6%	7.4%
	Total	35.8%	37.6%	6.5%	6.6%	5.2%	4.6%	1.8%	2.1%	49.2%	50.8%
		73.4%		13.0%		9.8%		3.8%		100.0%	

A6.11 Demographic Distribution of the Singapore Resident Population

Table A6.11: Demographic distribution of the Singapore resident population(Singstat, 2012, p. 29)

A7 Appendices Chapter 7

A7.1 Missing Data Handling

<u> </u>	<i><i><i>c</i>, <i>n</i>, <i>n</i>, <i>n</i>, <i>n</i>, <i>n</i>, <i>n</i>, <i>n</i>, <i>n</i></i></i>	
Sample demographics after two round	of data collection and listwice	alotion trolovant and around
Sumple demographics after two round		

Age	Chine	se	Mal	ау	India	an	Othe	ers	Tot	al
_	Μ	F	Μ	F	М	F	М	F	М	F
20.24	64	100	17	17	3	14	8	11	92	142
20-24	(4.5%)	(7.0%)	(1.2%)	(1.2%)	(0.2%)	(1.0%)	(0.6%)	(0.8%)	(6.4%)	(9.9%)
25.20	180	110	18	12	18	15	12	15	228	152
25-29	(12.6%)	(7.7%)	(1.3%)	(0.8%)	(1.3%)	(1.0%)	(0.8%)	(1.0%)	(15.9%)	(10.6%)
20.24	61	70	9	11	9	9	2	9	81	99
50-54	(4.3%)	(4.9%)	(0.6%)	(0.8%)	(0.6%)	(0.6%)	(0.1%)	(0.6%)	(5.7%)	(6.9%)
25.20	57	60	7	8	8	7	3	3	75	78
32-39	(4.0%)	(4.2%)	(0.5%)	(0.6%)	(0.6%)	(0.5%)	(0.2%)	(0.2%)	(5.2%)	(5.5%)
10 11	56	57	7	7	10	8	3	3	76	75
40-44	(3.9%)	(4.0%)	(0.5%)	(0.5%)	(0.7%)	(0.6%)	(0.2%)	(0.2%)	(5.3%)	(5.2%)
	54	64	6	8	9	8	3	1	72	81
45-50	(3.8%)	(4.5%)	(0.4%)	(0.6%)	(0.6%)	(0.6%)	(0.2%)	(0.1%)	(5.0%)	(5.7%)
	61	75	7	12	7	5	5	8	80	100
50-54	(4.3%)	(5.2%)	(0.5%)	(0.8%)	(0.5%)	(0.3%)	(0.3%)	(0.6%)	(5.6%)	(7.0%)
Totals	533	536	71	75	64	66	36	50	704	727
	(37.2%)	(37.5%)	(5.0%)	(5.2%)	(4.5%)	(4.6%)	(2.5%)	(3.5%)	(49.2%)	(50.8%)
		1069		146		130		86		1431
		(74.7%)		(10.2%)		(9.1%)		(6.0%)		(100.0%)

Table A7.1.1:Demographic structure after missing value case elimination
(N = 1,431)



Figure A7.1.1: Missing values with 87 items (full items set; 75 construct and 12 demographic variables) based on 1,764 cases



Figure A7.1.2: Missing values with 40 items (reduced items set; 37 construct variables and 3 demographic variables) based on 1,764 cases



Figure A7.1.3: Missing values with 37 items (reduced items set; 34 construct variables and 3 demographic variables) based on 1,764 cases



Figure A7.1.4: Missing values with 37 items (reduced items set; 34 construct variables and 3 demographic variables) and after deletion of "not applicable" cases (total = 1,453 cases)



A7.2 Data Screening (reporting sequence according to RI)



372





374













Figure A7.2.1: Histograms for univariate normality (full item set; 75 variables including missing values)

Construct Name		Construct Name	Estimate
ATT	\leftrightarrow	BIS	.544
ATT	\leftrightarrow	FUT	.058
ATT	\leftrightarrow	IGC	038
ATT	\leftrightarrow	INC	.119
ATT	\leftrightarrow	PAF	.334
ATT	\leftrightarrow	PBC	.422
ATT	\leftrightarrow	PER	027
ATT	\leftrightarrow	POD	029
ATT	\leftrightarrow	PRC	.125
ATT	\leftrightarrow	SEF	.125
ATT	\leftrightarrow	SUN	.669
ATT	\leftrightarrow	TRU	.141
ATT	\leftrightarrow	UNC	026
BIS	\leftrightarrow	FUT	.062
BIS	\leftrightarrow	IGC	052
BIS	\leftrightarrow	INC	.307
BIS	\leftrightarrow	PAF	.391
BIS	\leftrightarrow	PER	040
BIS	\leftrightarrow	POD	.092

Construct Name		Construct Name	Estimate
BIS	\leftrightarrow	PRC	.201
BIS	\leftrightarrow	SEF	.258
BIS	\leftrightarrow	TRU	.201
BIS	\leftrightarrow	UNC	.060
FUT	\leftrightarrow	PAF	064
IGC	\leftrightarrow	FUT	.281
IGC	\leftrightarrow	PAF	210
IGC	\leftrightarrow	PER	.779
IGC	\leftrightarrow	POD	116
IGC	\leftrightarrow	UNC	.836
INC	\leftrightarrow	FUT	157
INC	\leftrightarrow	IGC	241
INC	\leftrightarrow	PAF	.316
INC	\leftrightarrow	PER	211
INC	\leftrightarrow	POD	.145
INC	\leftrightarrow	PRC	.547
INC	\leftrightarrow	SEF	.642
INC	\leftrightarrow	TRU	.530
INC	\leftrightarrow	UNC	164
PAE	\leftrightarrow	ATT	.279
PAE	\leftrightarrow	BIS	.057
PAE	\leftrightarrow	FUT	.135
PAE	\leftrightarrow	IGC	.083
PAE	\leftrightarrow	INC	110
PAE	\leftrightarrow	PAF	.243
PAE	\leftrightarrow	PBC	.369
PAE	\leftrightarrow	PER	.081
PAE	\leftrightarrow	POD	132
PAE	\leftrightarrow	PRC	096
PAE	\leftrightarrow	SEF	199
PAE	\leftrightarrow	SUN	.163
PAE	\leftrightarrow	TRU	114
PAE	\leftrightarrow	UNC	.025
PBC	\leftrightarrow	BIS	.070
PBC	\leftrightarrow	FUT	.249
PBC	\leftrightarrow	IGC	.231
PBC	\leftrightarrow	INC	193
PBC	\leftrightarrow	PAF	008
PBC	\leftrightarrow	PER	.297
PBC	\leftrightarrow	POD	272
PBC	\leftrightarrow	PRC	075
PBC	\leftrightarrow	SEF	205
PBC	\leftrightarrow	TRU	073
PBC	\leftrightarrow	UNC	.174
PER	\leftrightarrow	FUT	.370

Construct Name		Construct Name	Estimate
PER	\leftrightarrow	PAF	207
PER	\leftrightarrow	POD	216
PER	\leftrightarrow	UNC	.815
POD	\leftrightarrow	FUT	038
POD	\leftrightarrow	PAF	.205
POD	\leftrightarrow	UNC	.078
PRC	\leftrightarrow	FUT	080
PRC	\leftrightarrow	IGC	085
PRC	\leftrightarrow	PAF	.210
PRC	\leftrightarrow	PER	108
PRC	\leftrightarrow	POD	060
PRC	\leftrightarrow	SEF	.385
PRC	\leftrightarrow	TRU	.830
PRC	\leftrightarrow	UNC	172
SEF	\leftrightarrow	FUT	056
SEF	\leftrightarrow	IGC	193
SEF	\leftrightarrow	PAF	.246
SEF	\leftrightarrow	PER	194
SEF	\leftrightarrow	POD	.219
SEF	\leftrightarrow	UNC	113
SUN	\leftrightarrow	BIS	.441
SUN	\leftrightarrow	FUT	.064
SUN	\leftrightarrow	IGC	.074
SUN	\leftrightarrow	INC	.194
SUN	\leftrightarrow	PAF	.267
SUN	\leftrightarrow	PBC	.416
SUN	\leftrightarrow	PER	.074
SUN	\leftrightarrow	POD	031
SUN	\leftrightarrow	PRC	.211
SUN	\leftrightarrow	SEF	.141
SUN	\leftrightarrow	TRU	.169
SUN	\leftrightarrow	UNC	.046
TRU	\leftrightarrow	FUT	113
TRU	\leftrightarrow	IGC	161
TRU	\leftrightarrow	PAF	.188
TRU	\leftrightarrow	PER	161
TRU	\leftrightarrow	POD	062
TRU	\leftrightarrow	SEF	.413
TRU	\leftrightarrow	UNC	270
UNC	\leftrightarrow	FUT	.399
UNC	\leftrightarrow	PAF	211

 Table A7.2.1:
 Construct correlations of all constructs (full item set; 75 variables)

Construc	t	Construct	Estimate	Lower	Upper	р
ATT	\leftrightarrow	BIS	.543	.489	.594	.002
ATT	\leftrightarrow	IGC	038	094	.021	.301
ATT	\leftrightarrow	PBC	.294	.223	.360	.002
ATT	\leftrightarrow	PER	026	077	.026	.415
ATT	\leftrightarrow	SEF	.105	.051	.156	.003
ATT	\leftrightarrow	SUN	.663	.607	.710	.003
ATT	\leftrightarrow	TRU	.139	.073	.193	.004
BIS	\leftrightarrow	IGC	057	113	012	.052
BIS	\leftrightarrow	PER	035	083	.009	.206
BIS	\leftrightarrow	SEF	.213	.160	.260	.003
BIS	\leftrightarrow	TRU	.200	.146	.256	.002
IGC	\leftrightarrow	PER	.762	.713	.815	.001
PAF	\leftrightarrow	ATT	.181	.124	.229	.004
PAF	\leftrightarrow	BIS	.198	.149	.237	.004
PAF	\leftrightarrow	IGC	124	177	068	.004
PAF	\leftrightarrow	PBC	039	096	.015	.256
PAF	\leftrightarrow	PER	129	185	072	.002
PAF	\leftrightarrow	SEF	.127	.077	.173	.002
PAF	\leftrightarrow	SUN	.179	.123	.230	.002
PAF	\leftrightarrow	TRU	.131	.084	.182	.002
PBC	\leftrightarrow	BIS	.015	044	.080	.654
PBC	\leftrightarrow	IGC	.264	.201	.325	.002
PBC	\leftrightarrow	PER	.313	.249	.378	.001
PBC	\leftrightarrow	SEF	172	227	119	.002
PBC	\leftrightarrow	TRU	070	126	015	.044
SEF	\leftrightarrow	IGC	174	226	122	.002
SEF	\leftrightarrow	PER	163	217	114	.001
SUN	\leftrightarrow	BIS	.436	.372	.497	.002
SUN	\leftrightarrow	IGC	.059	005	.117	.126
SUN	\leftrightarrow	PBC	.315	.240	.374	.002
SUN	\leftrightarrow	PER	.005	005	.111	.130
SUN	\leftrightarrow	SEF	.133	.075	.190	.002
SUN	\leftrightarrow	TRU	.176	.113	.244	.002
TRU	\leftrightarrow	IGC	150	207	091	.002
TRU	\leftrightarrow	PER	160	212	104	.002
TRU	\leftrightarrow	SEF	.320	.264	.368	.003

Table A7.2.2: Construct correlations after CFA; bootstrapped results with CI = 90%
(reduced items set; 9 constructs and 34 variables)

Construct	Estimate
ATT	.748
BIS	.710
FUT	.512
IGC	.955
INC	.808
PAE	.467
PAF	.689
PBC	.601
PER	.946
POD	.763
PRC	.881
SEF	.650
SUN	.708
TRU	.904
UNC	.985

 Table A7.2.3:
 Squared multiple correlations with 75 variables and 15 constructs

Construct	Estimate
ATT	.682
BIS	.440
IGC	.713
PAF	.084
PBC	.364
PER	.723
SEF	.207
SUN	.634
TRU	.180

Table A7.2.4:	Squared multiple	correlations	with 3	84 variables	and 9	constructs
	after CFA					

Bivariate Scatterplots Dependent variable: ATT Independent variables: PER, TRU, SUN, PAF







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Regression Standardized Predicted Value





Regression Standardized Predicted Value

Bivariate Scatterplots Dependent variable: BIS Independent variables: ATT, SUN, PBC, TRU, SEF, PAF







Figure A7.2.2: Bivariate scatterplots for heteroscedasticity

Variable combination	Heteroscedasticity concerns
ATT / PER	YES
ATT / PAF	YES
ATT / SUN	NO
ATT / TRU	NO
SUN / PER	YES
PBC / TRU	NO
PBC / PER	YES
PBC / PAF	YES
SEF / IGC	YES
BIS / ATT	NO
BIS / SUN	NO
BIS / PBC	NO
BIS / TRU	NO
BIS / SEF	NO
BIS / PAF	NO

Table A7.2.5: Heteroscedasticity test overview

Group Statistics

	PER	Ν	Mean	Std. Deviation	Std. Error Mean
ATT	>= .00	861	0197	.82457	.02810
	< .00	570	.0297	.73046	.03060

Independent Samples Test

			Levene's Test for Equa	ality of Variances
			F	Sig.
ATT	Equal assume Equal assume	variances d variances not d	13.399	.000

Group Statistics

	PAF	Ν	Mean	Std. Deviation	Std. Error Mean
ATT	>= .00	331	.2150	.75221	.04135
	< .00	1100	0647	.78807	.02376

Independent Samples Test

			Levene's Test for Equa	ality of Variances
			F	Sig.
ATT	Equal assumed Equal N assumed	variances I variances not I	4.482	.034

Group Statistics

	PER	Ν	Mean	Std. Deviation	Std. Error Mean
SUN	>= .00	861	.0192	.84716	.02887
	< .00	570	0289	.76368	.03199

Independent Samples Test

			Levene's Test for Equality of Variances		
			F	Sig.	
SUN	Equal assumed Equal N assumed	variances I variances not I	4.368	.037	

Group Statistics

	PER	Ν	Mean	Std. Deviation	Std. Error Mean
PBC	>= .00	861	.1985	.80577	.02746
	< .00	570	2998	.89542	.03750

Independent Samples Test

			Levene's Test for Equality of Variances				
			F	Sig.			
PBC	Equal assumed Equal va assumed	variances ariances not	6.445	.011			

Group Statistics

	PAF	Ν	Mean	Std. Deviation	Std. Error Mean
PBC	>= .00	331	1245	.95239	.05235
	< .00	1100	.0375	.84983	.02562

Independent Samples Test

			Levene's Test for Equality of Variances				
			F	Sig.			
PBC	Equal assumed Equal v assumed	variances I variances not I	9.514	.002			

Group Statistics

	IGC	Ν	Mean	Std. Deviation	Std. Error Mean
SEF	>= .00	858	1446	.98487	.03362
	< .00	573	.2165	1.00962	.04218

Independent Samples Test

			Levene's Test for Equality of Variances				
			F	Sig.			
SEF	Equal assumed Equal v assumed	variances I ariances not I	3.379	.066			

 Table A7.2.6:
 Levene's test for equality of variance

A7.3 Confirmatory Factor Analysis
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	Factor loadings pre list-wise deletion					Factor loadings post list-wise deletion				Δ			
				(N	= 1,453)			(N	= 1,431	.)		pre/post,
14		F	Ct.d	I I a stal	с г	C D		Ch -l		6.5	C D		standar-
V22r	4	Factor	510.	025	5.E.	21 196	р ***	510.	00-sta. 036	5.E.	L.K.	<u>р</u> ***	
V221	~		.575	.925	.044	21.100	***	.382	.930	.048	19.373	***	.009
V25	` ~	ATT	.055	1 143	.037	25.857	***	.070	1 1 2 3	.041	22.221	***	.013
V26	È	ATT	.692	1.000	.012	20.505		.698	1.000	.010	21.333		.006
V32	, +	ATT	.648	1.080	.046	23.644	***	.661	1.087	.049	21.966	***	.013
V38	÷	BIS	.634	.695	.023	29.885	***	.637	.698	.026	27.350	***	.003
V39	÷	BIS	.806	.930	.022	43.066	***	.798	.917	.024	38.858	***	.008
V40	\leftarrow	BIS	.896	1.000				.904	1.000				.008
V41	\leftarrow	BIS	.849	.940	.020	47.024	***	.858	.948	.021	44.273	***	.009
V42	\leftarrow	BIS	.673	.731	.022	32.502	***	.680	.739	.025	30.084	***	.007
V59	\leftarrow	FUT	.469	1.000				.490	1.000				.021
V60	\leftarrow	FUT	.530	.925	.075	12.296	***	.509	.863	.076	11.342	***	.021
V63	\leftarrow	FUT	.465	1.085	.094	11.590	***	.478	1.063	.097	10.993	***	.013
V64r	\leftarrow	FUT	.315	.653	.072	9.074	***	.342	.687	.077	8.897	***	.027
V67	÷	FUT	.582	1.204	.095	12.663	***	.597	1.195	.099	12.018	***	.015
V43	<i>←</i>	IGC	.622	1.000			de de de	.652	1.000			de de de	.030
V48	<i>←</i>	IGC	.791	1.210	.047	25.739	***	.781	1.168	.049	24.085	***	.010
V49	÷	IGC	.801	1.215	.047	25.934	***	.782	1.148	.048	24.098	***	.019
V51	÷	IGC	.682	1.119	.048	23.230	***	.6//	1.076	.050	21.600	***	.005
V52	÷	IGC	.3/3	.709	.051	13.929	***	.363	.674	.054	12.397	***	.010
V5/r	÷		.102	.1/2	.043	3.967	***	.097	.158	.047	3.406	***	.005
	► ∠		.402	1 000	.062	13.134		.460	.811	.069	11.779		.002
V05 V07r	$\overline{\underline{\ }}$.405	1.000	071	10 262	***	.494	1.000	070	0 301	***	.009
	~		.550	.751	.071	12.066	***	208	.750	.079	9.304 10 707	***	.001
V08 V14	` ~	INC	.405	.885	.073	9 506	***	.558	.877 749	.082	8 676	***	.007
V20r	È	INC	596	1 018	067	15 080	***	599	1 004	074	13 607	***	.003
V72r	, ~	PAF	.670	.933	.078	11.897	***	.723	1.116	.102	10.892	***	.053
V73r	÷	PAE	.721	1.000	1070	11007		.655	1.000		10.001		.066
V74	÷	PAF	.558	.996	.130	7.675		.569	.981	.137	7.141	***	.011
V75r	\leftarrow	PAF	.363	1.000				.384	1.000				.021
V24	\leftarrow	PBC	.408	.663	.046	14.329	***	.423	.697	.052	13.420	***	.015
V27	\leftarrow	PBC	.525	.816	.046	17.802	***	.529	.813	.050	16.298	***	.004
V30r	\leftarrow	PBC	.349	.565	.045	12.443	***	.382	.625	.051	12.258	***	.033
V31	\leftarrow	PBC	.654	1.000				.656	1.000				.002
V34	\leftarrow	PBC	.659	1.091	.052	21.142	***	.661	1.102	.057	19.329	***	.002
V36	\leftarrow	PBC	.670	.923	.043	21.383	***	.663	.907	.047	19.365	***	.007
V45	\leftarrow	PER	.768	1.000				.771	1.000				.003
V46	÷	PER	.825	1.048	.029	35.660	***	.825	1.061	.033	32.225	***	.000
V53	÷	PER	.811	.985	.028	34.990	***	.807	.995	.032	31.448	***	.004
V54	÷	PER	.797	.986	.029	34.317	***	.789	.992	.032	30.664	***	.008
V55r	÷	PER	.249	.463	.046	9.989	***	.268	.491	.051	9.684	***	.019
V65r	÷	PER	.133	.215	.041	5.294	444	.149	.238	.045	5.333	4.4.4.	.016
V47	÷		.331	1.000	204	10 445	***	.347	1.000	212	0 972	***	.016
V 50	► ∠		000. 011	2.134	.204	10.445	***	.701	2.092	.212	9.873	***	.013
V00 V69	$\sum_{}$.440	1.552	.142	9.550	***	.447	1.200	.144	0.952	***	.001
V69	~		340	1.670	.105	10.134 8 //75	***	.310	1.705	.102	7 8 2 9	***	.030
V05 V71r	` ~	POD	200	689	115	5 983	***	218	725	174	5 868	***	.005
V11	È	PRC	371	580	043	13 567	***	380	601	048	12 444	***	.010
V12r	È	PRC	.261	.380	.040	9.618	***	.241	.356	.045	7.999	***	.020
V16r	÷	PRC	.682	1.000		2.010		.680	1.000				.002
V17r	÷	PRC	.758	1.047	.042	24.633	***	.744	1.045	.048	21.793	***	.014
V01	\leftarrow	SEF	.259	.387	.040	9.710	***	.283	.395	.040	9.942	***	.024
V03	\leftarrow	SEF	.739	1.000	-	-		.799	1.000				.060
V04	\leftarrow	SEF	.767	.988	.038	25.941	***	.820	.975	.033	29.565	***	.053
V06	\leftarrow	SEF	.626	.820	.036	22.586	***	.593	.720	.033	21.585	***	.033
V09r	\leftarrow	SEF	.455	.481	.029	16.809	***	.385	.387	.028	13.682	***	.070

			Factor loadings pre list-wise deletion						Factor loadings post list-wise deletion				Δ
				(N	= 1,453)		(N = 1,431)					pre/post,
													standar-
Item		Factor	Std.	Unstd.	S.E.	C.R.	р	Std.	Un-std.	S.E.	C.R.	р	dised
V10r	\leftarrow	SEF	.455	.500	.030	16.794	***	.385	.394	.029	13.678	***	.070
V21	\leftarrow	SEF	.491	.698	.039	18.064	***	.471	.618	.037	16.887	***	.020
V28	\leftarrow	SUN	.725	1.000				.750	1.000				.025
V29	\leftarrow	SUN	.699	1.045	.044	23.521	***	.715	1.043	.046	22.597	***	.016
V33	\leftarrow	SUN	.538	.821	.043	19.109	***	.538	.778	.044	17.782	***	.000
V35	\leftarrow	SUN	.465	.791	.047	16.739	***	.489	.793	.049	16.226	***	.024
V37	\leftarrow	SUN	.269	.445	.045	9.894	***	.269	.428	.047	9.063	***	.000
V13r	\leftarrow	TRU	.634	.838	.029	28.550	***	.630	.848	.034	25.073	***	.004
V15r	\leftarrow	TRU	.694	.774	.024	32.132	***	.690	.786	.028	28.133	***	.004
V18r	\leftarrow	TRU	.869	1.000				.857	1.000				.012
V19r	\leftarrow	TRU	.827	.911	.022	40.781	***	.817	.911	.026	35.003	***	.010
V44	\leftarrow	UNC	.562	1.000				.545	1.000				.017
V50	\leftarrow	UNC	.480	.945	.061	15.556	***	.463	.928	.068	13.565	***	.017

Table A7.3.1a:	CFA results	(75	variables,	15	constructs)	before /	′ after	list-wise
	deletion							

Variable		Construct	Std. Loading
V22r	\leftarrow	ATT	.578
V23	\leftarrow	ATT	.669
V25	\leftarrow	ATT	.758
V26	\leftarrow	ATT	.701
V32	\leftarrow	ATT	.661
V38	\leftarrow	BIS	.635
V39	\leftarrow	BIS	.797
V40	\leftarrow	BIS	.905
V41	\leftarrow	BIS	.859
V42	\leftarrow	BIS	.679
V43	\leftarrow	IGC	.636
V48	\leftarrow	IGC	.808
V49	\leftarrow	IGC	.804
V51	\leftarrow	IGC	.659
V74	\leftarrow	PAF	1.000
V27	\leftarrow	PBC	.558
V31	\leftarrow	PBC	.710
V34	\leftarrow	PBC	.597
V36	\leftarrow	PBC	.711
V45	\leftarrow	PER	.771
V46	\leftarrow	PER	.827
V53	÷	PER	.806
V54	\leftarrow	PER	.795
V03	<i>←</i>	SEF	.829
V04	÷	SEF	.860
V06	÷	SEF	.551
V09r	÷	SEF	.351
V10r	÷	SEF	.342
V21	÷	SEF	.42/
V28	\leftarrow	SUN	.//1
V29	\leftarrow	SUN	.709
V 3 3	 ← ← 	SUN	.545
V 30 V 10 r	$\overline{\nabla}$.482
V 131			.020
V 10r	$\overline{\leftarrow}$.0/2
V LOI	$\overline{\nabla}$		505. דרס
v 191	7	IKU	.827

Table A7.3.1b: CFA results (37 items, 9 constructs, N = 1,429; bad items marked)

Item		Factor	Loading	Lower bound	Upper bound	Bootstrapped p
V22r	\leftarrow	ATT	.578	.528	.626	.002
V23	\leftarrow	ATT	.669	.624	.708	.003
V25	\leftarrow	ATT	.758	.723	.792	.002
V26	\leftarrow	ATT	.701	.664	.737	.002
V32	\leftarrow	ATT	.659	.621	.703	.001
V38	\leftarrow	BIS	.635	.595	.677	.002
V39	\leftarrow	BIS	.796	.767	.822	.002
V40	\leftarrow	BIS	.905	.883	.923	.003
V41	\leftarrow	BIS	.859	.829	.882	.002
V42	\leftarrow	BIS	.680	.641	.712	.003
V43	\leftarrow	IGC	.637	.571	.688	.002
V48	\leftarrow	IGC	.801	.763	.837	.002
V49	\leftarrow	IGC	.802	.759	.838	.003
V51	\leftarrow	IGC	.660	.610	.707	.001
V74	\leftarrow	PAF	1	1	1	
V27	\leftarrow	PBC	.558	.506	.602	.003
V31	\leftarrow	PBC	.710	.666	.754	.002
V34	\leftarrow	PBC	.599	.549	.646	.002
V36	\leftarrow	PBC	.709	.672	.746	.002
V45	\leftarrow	PER	.771	.730	.801	.003
V46	\leftarrow	PER	.827	.790	.858	.002
V53	\leftarrow	PER	.805	.751	.838	.005
V54	\leftarrow	PER	.789	.740	.832	.003
V03	\leftarrow	SEF	.838	.807	.869	.002
V04	\leftarrow	SEF	.897	.863	.925	.003
V06	\leftarrow	SEF	.510	.460	.558	.002
V28	\leftarrow	SUN	.770	.726	.806	.004
V29	\leftarrow	SUN	.709	.665	.751	.003
V33	\leftarrow	SUN	.545	.489	.591	.003
V35	\leftarrow	SUN	.481	.427	.524	.002
V13r	\leftarrow	TRU	.618	.579	.662	.002
V15r	\leftarrow	TRU	.672	.631	.712	.002
V18r	\leftarrow	TRU	.866	.834	.889	.003
V19r	\leftarrow	TRU	.826	.792	.854	.004

Table A7.3.2:Factor loadings (34 items, 9 constructs, N = 1,431, bootstrapped
with 1,000 samples) and standardised values

Item		Factor	Loading	Lower bound	Upper bound	Bootstrapped p
V03	\leftarrow	SEF	.839	.807	.870	.002
V04	\leftarrow	SEF	.897	.863	.925	.003
V06	\leftarrow	SEF	.511	.460	.558	.002
V13r	\leftarrow	TRU	.618	.579	.661	.002
V15r	\leftarrow	TRU	.672	.631	.711	.002
V18r	\leftarrow	TRU	.866	.834	.888	.003
V19r	\leftarrow	TRU	.826	.792	.854	.004
V22r	\leftarrow	ATT	.577	.527	.625	.002
V23	\leftarrow	ATT	.668	.622	.706	.003
V25	\leftarrow	ATT	.763	.727	.795	.002
V26	\leftarrow	ATT	.703	.665	.738	.002
V27	\leftarrow	PBC	.604	.551	.648	.002

V28	\leftarrow	SUN	.798	.758	.834	.003
V29	\leftarrow	SUN	.718	.672	.757	.004
V31	\leftarrow	PBC	.689	.641	.738	.002
V32	\leftarrow	ATT	.653	.616	.697	.001
V33	\leftarrow	SUN	.533	.479	.584	.003
V36	\leftarrow	PBC	.713	.672	.757	.002
V38	\leftarrow	BIS	.634	.594	.675	.002
V39	\leftarrow	BIS	.796	.767	.822	.002
V40	\leftarrow	BIS	.906	.884	.923	.003
V41	\leftarrow	BIS	.860	.829	.882	.003
V42	\leftarrow	BIS	.679	.640	.711	.003
V43	\leftarrow	IGC	.637	.571	.689	.002
V45	\leftarrow	PER	.771	.731	.801	.003
V46	\leftarrow	PER	.827	.790	.858	.002
V48	\leftarrow	IGC	.801	.763	.837	.002
V49	\leftarrow	IGC	.802	.760	.838	.002
V51	\leftarrow	IGC	.660	.611	.707	.001
V53	\leftarrow	PER	.805	.752	.838	.005
V54	\leftarrow	PER	.789	.740	.832	.003
V74	\leftarrow	PAF	1	1	1	

Table A7.3.3:	Factor loadings (32 items, 9 constructs, N = 1,431, bootstrapped					
	with 1,000 samples), and standardised values					

	After first survey round			After second survey round	
	hard edits	hard + soft edits		Model with 74	Model with 34
	1-2-3	1-2-3		items	items
Construct	(N = 1,556)	(N = 1,508)	Construct	(N = 1,764)	(N = 1,431)
ATT	0.776	0.779	ATT	0.793 (个)	0.801 (个)
BIS	0.873	0.874	BIS	0.880 (个)	0.882 (个)
IGC	0.732	0.725	IGC	0.712 (↓)	0.812 (↓)
PBC	0.708	0.709	PBC	0.706 (↓)	0.729 (个)
PER	0.721	0.711	PER	0.719 (个)	0.876 (个)
SEF	0.740	0.734	SEF	0.734 (→)	0.752 (↓)
SUN (Only SUN-01, SUN-02,	0.641	0.639 (0.698)	SUN	0.643 (个)	0.702 (个)
SUN-03)	(0.696)				
TRU	0.832	0.830	TRU	0.837 (个)	0.831 (↓)
FUT (Only FUT-01, FUT-02,	0.552	0.552 (0.566)	FUT	0.573 (个)	N/A
FUT-03, FUT-05)	(0.567)				
INC (No improvement possible)	0.555	0.559	INC	0.567 (个)	N/A
PAS (Only PAS-01r, PAS-02r,	0.410	0.412 (0.435)	PAF	0.312 (↓)	N/A
PAS-03)	(0.420)				
N/A	N/A	N/A	PAE	0.651 (个)	N/A
POD (POD-01, POD-02,	0.566	0.567 (0.596)	POD	0.549 (↓)	N/A
POD-03, POD-04, POD-05)	(0.598)				
PRC (Only PRC-01, PRC-03r,	0.553	0.555 (0.593)	PRC	0.551 (↓)	N/A
PRC-04r)	(0.596)				
UNC (Only UNC-01, UNC-02,	0.260	0.275 (0.454)	UNC	0.299 (个)	N/A
UNC-05)	(0.457)				
Total N	1,556	1,508	Total N	1,764	1,431

 Table A7.3.4:
 Cronbach Alpha (CA) Reliability Analysis
	CFA with 7 ! N = 1.7	5 items 64	CFA with 3 N = 1.4	4 items	CFA with 32 items N = 1.431		
Construct	CR	AVE	CR	AVE	CR	AVE	
ATT	.80	.45	.81	.46	.81	.46	
BIS	.88	.60	.89	.61	.89	.61	
FUT	.59	.23	N/A	N/A	N/A	N/A	
IGC	.75	.38	.82	.53	.82	.53	
INC	.58	.20	N/A	N/A	N/A	N/A	
PAE	.65	.28	N/A	N/A	N/A	N/A	
PAF	.35	.29	1	1	1	1	
PBC	.72	.31	.74	.42	.71	.45	
PER	.79	.44	.89	.64	.89	.64	
POD	.58	.21	N/A	N/A	N/A	N/A	
PRC	.60	.31	N/A	N/A	N/A	N/A	
SEF	.75	.32	.80	.59	.80	.59	
SUN	.68	.31	.73	.41	.73	.48	
TRU	.85	.58	N/A	N/A	.84	.57	
UNC	.172	.111	N/A	N/A	N/A	N/A	

Table A7.3.5:	Average variance extracted (AVE) and composite reliability (CR) with
	different item sets

		ATT	BIS	FUT	IGC	INC	PAE	PAF	PBC	PER	POD	PRC	SEF	SUN	TRU	UNC
	AVE	.447	.606	.231	. <u>378</u>	<u>.197</u>	.279	.287	.312	.441	.205	.311	.321	<u>.318</u>	<u>.581</u>	.111
ATT		1	.279	.003	.000	.020	.077	.112	.154	.000	.001	.024	.024	.457	.028	.000
BIS		.279	1	.007	.001	.092	.005	.162	.005	.001	.008	.031	.071	.181	.029	.005
FUT		.003	.007	1	.081	.026	.013	.004	.057	.140	.001	.009	.008	.002	.017	. <u>142</u>
IGC		.000	.001	.081	1	.046	.011	.045	.051	<u>.610</u>	.013	.009	.038	.004	.024	<u>.676</u>
INC		.020	.092	.026	.046	1	.008	.078	.032	.035	.016	.288	.534	.038	.288	.023
PAE		.077	.005	.013	.011	.008	1	.077	.125	.012	.011	.008	.025	.048	.010	.007
PAF		.112	.162	.004	.045	.078	.077	1	.000	.045	.042	.028	.061	.071	.020	.055
PBC		.154	.005	.057	.051	.032	.125	.000	1	.085	.064	.004	.042	.167	.005	.039
PER		.000	.001	.140	.610	.035	.012	.045	.085	1	.042	.010	.040	.004	.022	.664
POD		.001	.008	.001	.013	.016	.011	.042	.064	.042	1	.001	.050	.000	.001	.004
PRC		.024	.031	.009	.009	.288	.008	.028	.004	.010	.001	1	.173	.042	.686	.025
SEF		.024	.071	.008	.038	. <u>534</u>	.025	.061	.042	.040	.050	.173	1	.028	.219	.013
SUN		.457	.181	.002	.004	.038	.048	.071	.167	.004	.000	.042	.028	1	.034	.002
TRU		.028	.029	.017	.024	.288	.010	.020	.005	.022	.001	.686	.219	.034	1	.060
UNC		.000	.005	.142	.676	.023	.007	.055	.039	.664	.004	.025	.013	.002	.060	1

Table A7.3.6:	Discrim	inant	valic	lity: squ	ared	construct co	rre	lati	ons and a	AVE (CFA
	model	with	75	items,	15	constructs,	Ν	=	1,431).	Squared
	correla	tions e	excee	eding the	e coi	nstruct AVE a	re	und	erlined []

			510	100						
		AII	BIS	IGC	PAF	рвс	PER	SEF	SUN	IRU
	AVE	.456	.611	. <u>532</u>	1	.419	.637	.589	.406	.566
ATT		1	.295	.001	.033	.086	.001	.011	.440	.019
BIS		.295	1	.003	.039	.000	.001	.045	.190	.040
IGC		.001	.003	1	.015	.070	.581	.030	.003	.023
PAF		.033	.039	.015	1	.002	.017	.016	.032	.017
PBC		.086	.000	.070	.002	1	.098	.030	.099	.005
PER		.001	.001	. <u>581</u>	.017	.098	1	.027	.003	.026
SEF		.011	.045	.030	.016	.030	.027	1	.018	.102
SUN		.440	.190	.003	.032	.099	.003	.018	1	.031
TRU		.019	.040	.023	.017	.005	.026	.102	.031	1

Table A7.3.7:Discriminant validity: squared construct correlations and AVE (CFA
model with 34 items, 9 constructs, N = 1,431). Squared correlations
exceeding the construct AVE are underlined [___]

		ATT	BIS	IGC	PAF	PBC	PER	SEF	SUN	TRU
	AVE	.456	.611	. <u>532</u>	1	.449	.637	.590	.479	.566
ATT		1	.293	.001	.033	.037	.001	.011	.407	.019
BIS		.293	1	.003	.039	.002	.001	.045	.158	.040
IGC		.001	.003	1	.015	.083	.581	.030	.002	.023
PAF		.033	.039	.015	1	.004	.017	.016	.022	.017
PBC		.037	.002	.083	.004	1	.120	.035	.056	.007
PER		.001	.001	. <u>581</u>	.017	.120	1	.027	.001	.026
SEF		.011	.045	.030	.016	.035	.027	1	.015	.102
SUN		.407	.158	.002	.022	.056	.001	.015	1	.027
TRU		.019	.040	.023	.017	.007	.026	.102	.027	1

Table A7.3.8:Discriminant validity: squared construct correlations and AVE (CFA
model with 32 items, 9 constructs, N = 1,431). Squared correlations
exceeding the construct AVE are underlined [__]

	ATT	BIS	IGC	PAF	PBC	PER	SEF	SUN	TRU
ATT	1	.543***	038	.181***	.294***	026	.105***	.663***	.139***
BIS	.543***	1	057	.198***	.015	035	.213***	.436***	.200***
IGC	038	057	1	124***	.264***	.762***	174***	.059	150***
PAF	.181***	.198***	124***	1	039	129***	.127***	.179***	.131***
РВС	.294***	.015	.264***	039	1	.313***	172***	.315***	070*
PER	026	035	.762***	129***	.313***	1	163***	.050	160***
SEF	.105***	.213***	174***	.127***	172***	163***	1	.133***	.320***
SUN	.663***	.436***	.059	.179***	.315***	.050	.133***	1	.176***
TRU	.139***	.200***	150***	.131***	070*	160***	.320***	.176***	1

Table A7.3.9: Construct correlations (34 items, 9 constructs, N = 1,431);

 Significances: ***: p < .001, **: p < .01, *: p < .05

	ATT	BIS	IGC	PAF	РВС	PER	SEF	SUN	TRU
ATT	1	.541***	038***	.181***	.192***	026	.105***	.638***	.139***
BIS	.541***	1	057	.198***	044***	035	.213***	.398***	.200***
IGC	038	057	1	124***	.288***	.762***	174***	.047	150***
PAF	.181***	.198***	124***	1	065*	129***	.127***	.148***	.131***
PBC	.192***	044	.288***	065*	1	.346***	187***	.236***	085*
PER	026	035***	.762***	129***	.346***	1	163***	.034	160***
SEF	.105***	.213***	174***	.127***	187***	163***	1	.122***	.320***
SUN	.638***	.398***	.047	.148***	.236***	.034	.122***	1	.164***
TRU	.139***	.200***	150***	.131***	085*	160***	.320***	.164***	1

Table A7.3.10: Construct correlations (32 items, 9 constructs, N = 1,431) andsignificances

V74 V54 V53 V46 V45 V51 V49 V48 V43 V13r V06 V42 V38 V36 V35 V32 V22r V03 V04 V19r V18r V15r V41 V40 V39 V34 V31 V27 V29 V33 V28 V26 V25 V23 .0 V74 V54 -.2 .0 .1 2.6 .0 V53 V46 -.2 -1.0 -1.5 .0 V45 .4 -2.2 -.9 2.9 .0 V51 -1.6 1.6 2.4 1.5 1.0 .0 .2 .4 -.6 -.4 -1.0 -1.5 V49 .0 V48 .8 -.7 -1.5 -1.6 -2.4 -.8 2.0 .0 V43 -.4 2.4 2.3 2.8 2.0 2.7 -2.2 -1.0 .0 V13r 1.4 .5 -.2 -2.0 -.6 -1.5 -.4 .1 -.4 .0 2.1 .5 -1.3 -1.9 -1.3 .2 -2.1 -1.5 -1.1 5.1 V06 .0 V42 2.3 -.1 .7 -.7 1.1 .5 .8 .8 -.8 2.8 4.3 .0 V38 3.1 1.3 2.3 -.2 1.7 -.5 .9 .8 .2 2.6 4.5 4.1 .0 V36 -.4 1.2 1.4 .0 .6 -.9 .5 .5 1.6 -.8 .0 .9 3.4 .0 4.9 2.4 2.0 1.4 2.1 .6 2.2 1.3 1.1 1.6 1.4 7.1 8.9 4.2 V35 .0 V32 1.1 .7 1.8 .3 .8 -1.9 1.3 1.4 .3 1.9 4.3 6.5 10.3 -.2 3.8 .0 **V22r** 1.2 -1.4 .0 -1.9 -.7 -2.0 -1.1 -1.9 -2.4 1.0 -.1 3.1 3.7 -2.5 .4 1.2 .0 V03 .0 .8 1.0 -.8 1.0 2.2 .5 1.7 -1.7 .1 -.3 1.6 -.1 .5 1.3 1.6 -1.2 .0 V04 -.3 -.4 .5 .3 -.6 .4 -1.8 .9 -.3 1.1 .3 .5 1.0 2.6 .0 -.3 -.5 .1 .0 V19r -.1 1.4 1.1 -.2 .4 .7 -.9 .9 .9 -.8 4.1 1.2 2.0 .9 1.4 1.0 -.3 .1 -.4 .0 .3 .8 .0 .3 -.9 .5 .9 -1.0 3.7 2.0 .6 .5 1.6 .2 -.9 -1.2 -1.0 V18r .1 -1.1 .6 .0 V15r -1.9 -.4 -.2 -.9 -.6 -1.0 -1.3 .3 .2 4.3 5.2 .9 .9 -.2 1.4 .6 -.4 -.3 .5 -1.2 -.3 .0 V41 .2 .1 .5 -1.0 -.1 -.5 .2 -.2 -1.6 .0 2.3 -.1 -1.3 .2 2.7 2.2 -.9 .3 .3 .6 -.5 -1.6 .0 V40 -.8 -.8 .7 -1.9 -.4 -.6 .0 -.2 -1.8 .1 1.9 -1.5 -1.7 -.8 2.6 1.5 -1.3 -.9 -.7 -.5 -.6 -1.3 1.1 .0 V39 -1.4 .6 1.9 .6 1.6 1.1 1.6 1.2 -.4 1.6 4.0 -.1 1.1 .3 3.3 3.1 -.7 -1.0 -1.0 .3 -.6 .1 -1.4 .7 .0 .5 6.1 8.6 V34 2.1 -1.9 -1.7 -3.8 -2.2 -3.2 -1.8 -1.4 -.8 .8 -.3 4.6 8.9 7.2 1.5 .7 1.9 .7 -.3 4.1 3.5 4.3 .0 V31 .6 -.4 .1 -1.1 -.5 -.1 1.2 -.7 -.4 1.0 1.6 -.1 .2 .6 -1.8 1.1 .0 .2 .3 1.1 -.7 -1.6 -1.3 -.1 -.9 .6 .0 .9 1.3 1.2 4.2 -3.4 -2.8 -2.7 -2.3 1.0 -1.4 -3.4 -4.6 -1.9 -3.0 -2.5 -1.8 -1.6 -3.8 -4.6 -4.5 -2.7 V27 -2.7 2.9 1.8 2.2 1.6 .4 .0 .3 2.3 -.2 1.1 1.4 1.5 -1.7 -1.0 2.1 5.3 1.8 -1.4 .1 -2.0 -1.9 -2.7 -1.0 -1.6 -1.0 -2.9 -3.5 -1.0 5.3 1.9 2.1 V29 -1.6 .7 1.8 .0 V33 .2 -.6 -.7 -1.1 -1.2 -1.5 -1.1 -1.8 -1.5 -.8 5.2 5.9 8.8 -4.4 .7 6.9 -1.1 2.2 2.7 -.1 -.3 -.3 1.8 1.5 4.3 2.2 -2.8 -5.6 -1.6 .0 V28 -.5 -2.1 -1.3 -1.1 -.2 -1.7 .3 -.3 -2.5 .8 2.2 3.9 5.6 -2.2 -1.4 .9 -2.7 -.1 .1 1.3 -.1 1.1 -3.2 -3.0 -.3 2.2 -2.1 -3.4 1.2 .6 .0 V26 -.3 -.5 1.6 -1.0 .9 .4 1.0 .2 1.7 1.2 .9 4.0 5.1 -1.6 1.9 -1.7 -2.3 -1.1 -.8 -1.1 -1.9 -1.1 -1.6 -1.7 -.2 4.2 -2.3 -2.5 1.0 .0 .7 .0 -.5 -1.5 -.3 -2.4 -.9 -1.6 -.9 -1.0 -.6 2.3 .8 3.3 5.0 -2.7 -1.3 -1.0 2.2 .0 -.3 .5 -.1 .6 -1.9 -2.1 -.3 6.4 -2.9 -3.8 -1.0 -1.4 V25 -.8 .8 .0 -.7 1.1 2.2 1.6 1.4 .6 1.7 1.4 1.0 .8 .5 1.8 4.1 1.0 1.4 -1.4 -.3 -.8 -.9 .8 -.3 -.2 -3.0 -3.2 .3 6.5 1.1 -1.2 .3 .2 -.9 1.9 -.1 .0 V23

Table A7.3.11: Standardised residuals with 34 items, N = 1,431

			M.I.	Par Change
V38	\leftarrow	SUN	138.884	.448
V34	\leftarrow	ATT	130.296	.507
V38	\leftarrow	V32	124.135	.245
V34	\leftarrow	V32	119.786	.272
V34	\leftarrow	V22r	109.25	.266
V38	\leftarrow	ATT	106.02	.405
V34	\leftarrow	V25	92.843	.265
V32	\leftarrow	V33	82.740	.212
V38	\leftarrow	V33	80.228	.216
V38	\leftarrow	V29	78.664	.212
V38	\leftarrow	V28	77.250	.230
V38	\leftarrow	V35	73.183	.184
V32	\leftarrow	V38	70.775	.171
V34	÷	V38	66.086	.193
V42	←	SUN	63.642	.288
V34	, ,	SUN	57.399	.326
V38	÷	V25	56.655	.183
V34	÷	BIS	53.858	.199
V33	, L	V32	52 959	154
V38	~	V26	52.057	182
V42	~	ATT	50 469	265
V46	, L	V45	50.185	1205
V40	 	SUN	50.105	- 184
V34	 	V23	50.124	.104 214
V28	× ∠	V23	10 967	120
V38	Ž	V2J	49.907	.105
V/12	Ž	V34 V28	49.203	.141
V42 V15r	\sim	V20 V/12r	40.220	.1/2
V20		V131 V27	44.104	.117
V29 V24		VZ7 V/12	42.300	.124
V34 V28			41.433	.134
V 30		1/20	41.195	.227
V4Z V/27		V36	40.700	.127
V 54 V 1 2 r		V20 V15r	20.019	.1//
V10	$\overline{}$	V 1 51	20.000	.150
V40 V2E	$\overline{\leftarrow}$		37.883	105
V35	$\overline{\mathbf{\nabla}}$	V38	37.882	.144
V42	← ´	V35	37.611	.125
V42	÷	V26	37.268	.146
V27	÷	BIS	36.544	155
V42	÷	V32	36.395	.126
V38	÷	V42	36.146	.128
V06	÷	TRU	35.574	.184
V27	<i>←</i>	V38	35.534	133
V45	÷	V46	35.444	.110
V40	<i>←</i>	V38	35.295	085
V06	<i>←</i>	V15r	33.716	.148
V53	<i>←</i>	V54	33.589	.100
V33	\leftarrow	V38	33.220	.117
V27	\leftarrow	V39	32.987	123
V34	\leftarrow	V41	32.915	.135
V35	\leftarrow	PAF	32.876	.166
V35	\leftarrow	V74	32.876	.166
V34	\leftarrow	V39	32.584	.129
V40	\leftarrow	V29	32.581	093
V40	\leftarrow	V28	32.264	101
V42	\leftarrow	V25	31.723	.130
V34	\leftarrow	V40	31.484	.132

 Table A7.3.12:
 Modification indices with 34 items, N = 1,431



Figure A7.3.1: CFA model (75 variables, 15 constructs). All construct mean values fixed at 0, but not displayed to provide improved readability

APPENDICES







Figure A7.3.3: Final CFA model (32 items, 9 constructs). Basis for structural Models A and B.

APPENDICES



Figure A7.3.4: Final CFA model (32 items, 9 constructs). Basis for structural Models A and B.

A7.4 Structural Equation Models

H1.1	ATT positively affects BIS.
H1.2	SUN positively affect BIS.
H1.3	PBC positively affects BIS.
H1.4	SUN positively affect ATT.
H1.4a	SUN have an indirect positive effect on BIS, mediated by ATT. In light of the direct effect of SUN on BIS in H1.2, this mediation is partial.

Table A7.4.1: Summary of test hypotheses for Model A



Figure A7.4.1: Foundational theoretical model (FTM; Model A)

- H2.1 PAF positively affects BIS.
- H2.3 PAF positively affects ATT.
- H2.3a PAF has an indirect positive effect on BIS, mediated by ATT. In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.
- H2.4 PAF positively affects PBC.
- H2.4a PAF has an indirect positive effect on BIS, mediated by PBC. In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.
- H3.1 TRU positively affects ATT.
- H3.1a There is an indirect positive effect of TRU on BIS, mediated by ATT. In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.
- H3.2 TRU negatively affects PBC.
- H3.2a There is an indirect negative effect of TRU on BIS, mediated by PBC. In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.
- H3.3 TRU positively affects BIS.
- H3.6 SEF positively affects BIS.
- H4.1 PER positively affects ATT.
- H4.1a There is an indirect positive effect of PER on BIS, mediated by ATT. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.
- H4.2 PER positively affects SUN.
- H4.2a There is an indirect positive effect of PER on BIS, mediated by SUN. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.
- H4.3 PER positively affects PBC.
- H4.3a There is an indirect positive effect of PER on BIS, mediated by PBC. Since there is no hypothesis to support a direct effect of PER on BIS, this mediation is full.
- H4.14 High IGC negatively affects BIS.
- H4.15 High IGC negatively affects SEF.
- H4.15a There is an indirect negative effect of IGC on BIS, mediated by SEF. In light of the direct effect of IGC on BIS in H4.16, this mediation is partial.
- Table A7.4.2:Summary of test hypotheses for Model B (adapted from chapter 5
according to the validated *measurement* model, cf. chapter 7.9).



Figure A7.4.2: Proposed theoretical model (PTM; Model B)

	Parameter		Estimate	Lower	Upper	p (Two-Tailed)
ATT	\leftarrow	SUN	.64	.59	.69	.003
BIS	\leftarrow	ATT	.49	.41	.57	.003
BIS	\leftarrow	SUN	.12	.03	.21	.029
BIS	\leftarrow	PBC	16	22	11	.002

Results: Foundational theoretical model (FTM; Model A)

Results: Proposed theoretical model (PTM; Model B)

Parameter		ſ	Estimate	Lower	Upper	p (Two-Tailed)
SUN	\leftarrow	PER	.04	02	.10	.254
ATT	\leftarrow	SUN	.62	.56	.67	.003
ATT	\leftarrow	TRU	.05	01	.09	.203
PBC	\leftarrow	TRU	03	09	.03	.391
ATT	\leftarrow	PER	03	07	.02	.384
PBC	\leftarrow	PER	.34	.28	.41	.001
SEF	\leftarrow	IGC	19	24	14	.001
PBC	\leftarrow	PAF	02	07	.04	.645
ATT	\leftarrow	PAF	.10	.05	.15	.003
BIS	\leftarrow	ATT	.47	.39	.55	.003
BIS	\leftarrow	SUN	.08	01	.16	.146
BIS	\leftarrow	PBC	12	17	06	.002
BIS	\leftarrow	TRU	.08	.03	.13	.007
BIS	\leftarrow	SEF	.12	.07	.16	.002
BIS	\leftarrow	PAF	.08	.04	.12	.002
BIS	\leftarrow	IGC	.04	02	.08	.255

Table A7.4.3:Parameter estimates for standardized direct effects with
bootstrapped CI of 90%, 1,000 bootstrap samples

Results: Foundational theoretical model (FTM; Model A)

Parameter		Estimate	Lower	Upper	p (Two-Tailed)	
BIS	\leftarrow	SUN	.32	.26	.38	.002

Results: Proposed theoretical model (Model B)

	Parameter		Estimate	Lower	Upper	p (Two-Tailed)
BIS	\leftarrow	SUN	.29	.24	.36	.002
BIS	\leftarrow	IGC	02	04	01	.001
BIS	\leftarrow	PAF	.05	.03	.07	.003
ATT	\leftarrow	PER	.03	01	.06	.246
BIS	\leftarrow	PER	04	07	.00	.082
BIS	\leftarrow	TRU	.02	.00	.05	.138

Table A7.4.4:Parameter estimates for standardized indirect effects with
bootstrapped CI of 90%, 1,000 bootstrap samples

	IGCx _PBC	IGCx _SUN	IGCx _ATT	PBCx _TRU	PBCx _SEF	ATTx _SEF	PAFx _PBC	PAF	PER	IGC	TRU	IGCx _TRU	eSUN	eSEF	ePBC	eATT
IGCx_PBC	250.070															
IGCx_SUN	171.583	155.659														
IGCx_ATT	145.930	149.931	159.750													
PBCx_TRU	101.276	88.563	91.887	94.018												
PBCx_SEF	169.619	132.000	130.871	123.440	211.668											
ATTx_SEF	80.723	66.165	67.061	39.687	84.523	52.185										
PAFx_PBC	-2.851	11.760	21.955	27.007	31.563	-2.991	42.683									
PAF	2.057	177	-2.246	-3.856	-4.110	1.950	.000	1.774								
PER	-1.122	.084	.885	.088	-1.456	-2.392	1.784	427	.837							
IGC	.000	.000	.000	-1.149	-2.553	-1.981	.443	159	.415	.355						
TRU	2.235	.000	-2.200	.000	-3.887	2.168	-4.076	.910	415	167	1.521					
IGCx_TRU	116.768	113.602	117.210	106.016	133.890	47.773	26.421	-3.808	.694	.000	.000	123.510				
eSUN	-6.988	.000	964	-1.810	-5.643	-1.881	.936	.000	.000	.000	.000	-2.731	.803			
eSEF	-8.336	-7.748	-7.733	-3.164	.000	.000	.249	.000	.000	.000	.000	-4.165	.000	1.192		
ePBC	5.641	-1.695	-3.113	.000	.000	-1.136	533	.000	.000	.000	.000	-3.643	.000	.000	1.009	
eATT	-3.625	-5.153	.000	-3.689	-4.615	.000	-1.635	.000	.000	.000	.000	-3.999	.000			

Table A7.4.5: Non-positive definitive covariance matrix in continuous moderation model

Item		Factor	Loading	Lower bound	Upper bound	Bootstrapped p
V23	\leftarrow	ATT	.668	.622	.707	.003
V25	\leftarrow	ATT	.763	.728	.795	.002
V26	\leftarrow	ATT	.705	.667	.739	.002
V28	\leftarrow	SUN	.791	.750	.826	.003
V29	\leftarrow	SUN	.725	.679	.763	.004
V33	\leftarrow	SUN	.532	.479	.583	.002
V27	\leftarrow	PBC	.590	.536	.635	.002
V31	\leftarrow	PBC	.702	.653	.752	.002
V39	\leftarrow	BIS	.797	.768	.823	.002
V40	\leftarrow	BIS	.909	.887	.926	.002
V41	\leftarrow	BIS	.860	.830	.882	.002
V22r	\leftarrow	ATT	.576	.527	.624	.002
V32	\leftarrow	ATT	.653	.615	.697	.001
V36	\leftarrow	PBC	.712	.669	.759	.002
V38	\leftarrow	BIS	.631	.592	.673	.002
V42	\leftarrow	BIS	.676	.638	.708	.002

Table A7.4.6:Factor loadings of constructs in the FTM (N = 1,431, bootstrapped
with 1,000 samples), standardised values

				Lower	Upper	Bootstrapped		Δ CFA / SEM
Item		Factor	Loading	bound	bound	р	CFA Loading	loading
V03	\leftarrow	SEF	.836	.800	.872	.003	.839	.003
V04	\leftarrow	SEF	.902	.871	.938	.001	.897	.005
V06	\leftarrow	SEF	.501	.450	.547	.002	.511	.010
V13r	\leftarrow	TRU	.616	.575	.657	.002	.618	.002
V15r	\leftarrow	TRU	.669	.627	.708	.002	.672	.003
V18r	\leftarrow	TRU	.870	.836	.893	.004	.866	.004
V19r	\leftarrow	TRU	.824	.791	.852	.003	.826	.002
V22r	\leftarrow	ATT	.574	.524	.621	.002	.577	.003
V23	\leftarrow	ATT	.662	.615	.701	.003	.668	.006
V25	\leftarrow	ATT	.761	.725	.793	.002	.763	.002
V26	\leftarrow	ATT	.701	.663	.737	.002	.703	.002
V27	\leftarrow	PBC	.607	.557	.652	.002	.604	.003
V28	\leftarrow	SUN	.801	.758	.837	.003	.798	.003
V29	\leftarrow	SUN	.714	.665	.753	.004	.718	.004
V31	\leftarrow	PBC	.685	.637	.733	.002	.689	.004
V32	\leftarrow	ATT	.647	.609	.691	.001	.653	.006
V33	\leftarrow	SUN	.537	.482	.587	.003	.533	.004
V36	\leftarrow	PBC	.715	.672	.758	.002	.713	.002
V38	\leftarrow	BIS	.629	.589	.670	.002	.634	.005
V39	\leftarrow	BIS	.793	.763	.819	.002	.796	.003
V40	\leftarrow	BIS	.904	.883	.922	.003	.906	.002
V41	\leftarrow	BIS	.857	.826	.881	.002	.860	.003
V42	\leftarrow	BIS	.675	.636	.706	.003	.679	.004
V43	\leftarrow	IGC	.638	.574	.690	.002	.637	.001
V45	\leftarrow	PER	.771	.730	.801	.003	.771	.000
V46	\leftarrow	PER	.827	.791	.858	.002	.827	.000
V48	\leftarrow	IGC	.798	.760	.834	.002	.801	.003
V49	\leftarrow	IGC	.801	.760	.837	.003	.802	.001
V51	\leftarrow	IGC	.660	.613	.708	.001	.660	.000
V53	\leftarrow	PER	.805	.750	.837	.005	.805	.000
V54	\leftarrow	PER	.789	.740	.831	.003	.789	.000
V74	\leftarrow	PAF	1.000	1.000	1.000		1.000	.003

Table A7.4.7:Factor loadings of constructs in the PTM (N = 1,431, bootstrapped
with 1,000 samples), standardised values

A7.5 Regression Analysis

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REGRESSION

/DESCRIPTIVES MEAN STDDEV CORR SIG N

/MISSING LISTWISE

/STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE ZPP

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT BISSUM

/METHOD=ENTER ATTSUM SUNSUM PBCSUM

/METHOD=ENTER TRUSUM SEFSUM

/METHOD=ENTER TRUSUM SEFSUM

/METHOD=ENTER IGCSUM PERSUM

/PARTIALPLOT ALL

/SCATTERPLOT=(*ZRESID ,*ZPRED)

/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)

/CASEWISE PLOT(ZRESID) OUTLIERS(2)

/SAVE PRED ZPRED ADJPRED MAHAL COOK LEVER ZRESID DRESID SDRESID SDBETA

SDFIT.
```

Table A7.5.1: SPSS regression syntax

Descriptive Statistics										
	Mean	Std. Deviation	Ν							
BISsum	3.6370	1.22968	1431							
ATTsum	3.7131	.96344	1431							
SUNsum	3.8530	.99910	1431							
PBCsum	5.5670	1.08368	1431							
PAS-03	2.0100	1.189	1431							
TRUsum	3.0423	.97214	1431							
SEFsum	2.6676	1.04476	1431							
IGCsum	5.8117	.93681	1431							
PERsum	5.9558	.90681	1431							

Table A7.5.2: D	escriptive statistics
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Correlat	ions									
		BISsum	ATTsum	SUNsum	PBCsum	PAS-03	TRUsum	SEFsum	IGCsum	PERsum
Pearson	BISsum	1.000	.526	.415	031	.208	.193	.223	046	016
Corr.	ATTsum	.526	1.000	.505	.135	.170	.126	.101	039	019
	SUNsum	.415	.505	1.000	.153	.131	.120	.131	.024	.031
	PBCsum	031	.135	.153	1.000	062	082	156	.228	.277
	PAS-03	.208	.170	.131	062	1.000	.119	.133	121	120
	TRUsum	.193	.126	.120	082	.119	1.000	.316	127	141
	SEFsum	.223	.101	.131	156	.133	.316	1.000	153	144
	IGCsum	046	039	.024	.228	121	127	153	1.000	.667
	PERsum	016	019	.031	.277	120	141	144	.667	1.000
Sig.	BISsum		.000	.000	.117	.000	.000	.000	.041	.274
(1-tailed)	ATTsum	.000		.000	.000	.000	.000	.000	.069	.233
	SUNsum	.000	.000		.000	.000	.000	.000	.181	.123
	PBCsum	.117	.000	.000		.010	.001	.000	.000	.000
	PAS-03	.000	.000	.000	.010		.000	.000	.000	.000
	TRUsum	.000	.000	.000	.001	.000		.000	.000	.000
	SEFsum	.000	.000	.000	.000	.000	.000		.000	.000
	IGCsum	.041	.069	.181	.000	.000	.000	.000		.000
	PERsum	.274	.233	.123	.000	.000	.000	.000	.000	
Ν	BISsum	1431	1431	1431	1431	1431	1431	1431	1431	1431
	ATTsum	1431	1431	1431	1431	1431	1431	1431	1431	1431
	SUNsum	1431	1431	1431	1431	1431	1431	1431	1431	1431
	PBCsum	1431	1431	1431	1431	1431	1431	1431	1431	1431
	PAS-03	1431	1431	1431	1431	1431	1431	1431	1431	1431
	TRUsum	1431	1431	1431	1431	1431	1431	1431	1431	1431
	SEFsum	1431	1431	1431	1431	1431	1431	1431	1431	1431
	IGCsum	1431	1431	1431	1431	1431	1431	1431	1431	1431
	PERsum	1431	1431	1431	1431	1431	1431	1431	1431	1431

Tab	le A7.	5.3:	Corre	lation	matrix
			conc	acion	matrix

Model	Summary
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Model				Change Statistics								
			Adjusted	Std. Error of	R^2				Sig. F	Durbin-		
	R	R ²	R ²	the Estimate	Change	F Change	df1	df2	Change	Watson		
1	.567 ^a	.321	.320	1.01424	.321	225.015	3	1427	.000			
2	.576 ^b	.331	.329	1.00696	.010	21.692	1	1426	.000			
3	.593 ^c	.351	.348	.99262	.020	21.745	2	1424	.000			
4	.595 ^d	.354	.350	.99142	.002	2.731	2	1422	.065	1.900		

a. Predictors: (Constant), PBCsum, ATTsum, SUNsum

b. Predictors: (Constant), PBCsum, ATTsum, SUNsum, PAS-03

c. Predictors: (Constant), PBCsum, ATTsum, SUNsum, PAS-03, TRUsum, SEFsum

d. Predictors: (Constant), PBCsum, ATTsum, SUNsum, PAS-03, TRUsum, SEFsum, IGCsum, PERsum

e. Dependent Variable: BISsum

Table A7.5.4: Regression model summary

ANO	VA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	694.401	3	231.467	225.015	.000 ^b	
	Residual	1467.916	1427	1.029			
	Total	2162.317	1430				
2	Regression	716.396	4	179.099	176.631	.000 ^c	
	Residual	1445.921	1426	1.014			
	Total	2162.317	1430				
3	Regression	759.246	6	126.541	128.429	.000 ^d	
	Residual	1403.071	1424	.985			
	Total	2162.317	1430				
4	Regression	764.615	8	95.577	97.238	.000 ^e	
	Residual	1397.702	1422	.983			
	Total	2162.317	1430				

a. Dependent Variable: BISsum

b. Predictors: (Constant), PBCsum, ATTsum, SUNsum

c. Predictors: (Constant), PBCsum, ATTsum, SUNsum, PAS-03

d. Predictors: (Constant), PBCsum, ATTsum, SUNsum, PAS-03, TRUsum, SEFsum

e. Predictors: (Constant), PBCsum, ATTsum, SUNsum, PAS-03, TRUsum, SEFsum, IGCsum, PERsum

Table A7.5.5: Regression ANOVA Summary

Coefficients^a

Μ	odel	Unsta	ndar-	Standar-			95% Con	fidence			Collinearity		
	-	dized (Coeff.	dized Coeff.			Interva	l for B	Со	rrelatio	ns	Statist	ics
		_	Std.				Lower	Upper	Zero-		-		
_	1	В	Error	Beta	t	Sig.	Bound	Bound	order	Partial	Part	Tolerance	VIF
1	(Constant)	1.338	.171		7.826	.000	1.003	1.674					
	ATTsum	.554	.032	.434	17.131	.000	.490	.617	.526	.413	.374	.742	1.348
	SUNsum	.265	.031	.215	8.470	.000	.203	.326	.415	.219	.185	.738	1.355
	PBCsum	140	.025	123	-5.559	.000	189	090	031	146	121	.972	1.029
2	(Constant)	1.171	.174		6.743	.000	.830	1.511					
	ATTsum	.534	.032	.419	16.520	.000	.471	.598	.526	.401	.358	.730	1.370
	SUNsum	.256	.031	.208	8.226	.000	.195	.317	.415	.213	.178	.735	1.360
	PBCsum	129	.025	113	-5.145	.000	178	080	031	135	111	.964	1.038
	PAS-03	.106	.023	.103	4.657	.000	.062	.151	.208	.122	.101	.960	1.041
3	(Constant)	.577	.195		2.964	.003	.195	.958					
	ATTsum	.521	.032	.408	16.282	.000	.458	.583	.526	.396	.348	.726	1.378
	SUNsum	.232	.031	.189	7.536	.000	.172	.293	.415	.196	.161	.726	1.378
	PBCsum	099	.025	087	-3.951	.000	148	050	031	104	084	.932	1.073
	PAS-03	.089	.023	.086	3.927	.000	.045	.134	.208	.104	.084	.947	1.056
	TRUsum	.084	.029	.066	2.913	.004	.027	.140	.193	.077	.062	.883	1.132
	SEFsum	.131	.027	.111	4.846	.000	.078	.184	.223	.127	.103	.863	1.158
4	(Constant)	.244	.263		.929	.353	272	.760					
	ATTsum	.523	.032	.410	16.346	.000	.460	.586	.526	.398	.348	.723	1.382
	SUNsum	.230	.031	.187	7.461	.000	.170	.291	.415	.194	.159	.724	1.382
	PBCsum	113	.026	100	-4.367	.000	164	062	031	115	093	.872	1.147
	PAS-03	.093	.023	.090	4.086	.000	.048	.138	.208	.108	.087	.939	1.065
	TRUsum	.089	.029	.071	3.097	.002	.033	.146	.193	.082	.066	.876	1.141
	SEFsum	.134	.027	.114	4.951	.000	.081	.187	.223	.130	.106	.857	1.167
	IGCsum	020	.038	015	522	.602	094	.054	046	014	011	.549	1.823
	PERsum	.083	.040	.061	2.093	.037	.005	.160	016	.055	.045	.536	1.867

a. Dependent Variable: BISsum

Table A7.5.6: Regression coefficients

							_					
Model	Dimension					Vari	ance Pr	oport	ions			
		Eigen-	Condition		ATT	SUN	PBC	PAS	TRU	SEF	IGC	PER
		value	Index	Constant	sum	sum	sum	-03	sum	sum	sum	sum
1	1	3.900	1.000	.00	.00	.00	.00					
	2	.052	8.668	.05	.23	.20	.28					
	3	.031	11.179	.00	.72	.77	.00					
	4	.017	15.326	.95	.05	.03	.71					
2	1	4.686	1.000	.00	.00	.00	.00	.01				
	2	.215	4.670	.00	.01	.01	.01	.95				
	3	.052	9.531	.05	.23	.21	.27	.01				
	4	.031	12.265	.00	.73	.75	.00	.00				
	5	.016	17.040	.95	.03	.02	.72	.03				
3	1	6.490	1.000	.00	.00	.00	.00	.00	.00	.00		
	2	.220	5.426	.00	.00	.00	.01	.97	.01	.01		
	3	.123	7.272	.00	.03	.03	.03	.00	.05	.59		
	4	.072	9.516	.00	.02	.03	.00	.00	.82	.31		
	5	.051	11.311	.04	.21	.18	.29	.01	.05	.02		
	6	.031	14.449	.00	.72	.75	.00	.00	.00	.00		
	7	.013	21.981	.96	.02	.01	.67	.01	.07	.07		
4	1	8.412	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.236	5.974	.00	.00	.00	.00	.90	.00	.00	.00	.00
	3	.136	7.860	.00	.00	.00	.02	.04	.08	.54	.01	.00
	4	.072	10.830	.00	.01	.01	.00	.00	.84	.35	.00	.00
	5	.070	10.945	.00	.24	.21	.01	.03	.00	.03	.02	.02
	6	.031	16.433	.00	.67	.77	.01	.00	.00	.00	.00	.00
	7	.027	17.692	.00	.05	.00	.85	.00	.00	.01	.08	.04
	8	.008	31.508	.80	.03	.00	.10	.02	.06	.05	.43	.01
	9	.008	32,878	.20	00	00	00	00	02	01	45	92

Collinearity Diagnostics^a

a. Dependent Variable: BISsum

Table A7.5.7: Multicollinearity diagnostics

Casewise Diagnostics^a

Case Number	Std. Residual	BISsum	Predicted Value	Residual
73	2.948	6.60	3.6774	2.92260
117	-2.373	1.80	4.1530	-2.35298
140	2.201	4.00	1.8174	2.18260
183	-2.042	2.00	4.0241	-2.02414
193	3.319	4.80	1.5092	3.29081
227	-2.164	1.00	3.1454	-2.14541
233	2.058	4.60	2.5592	2.04080
234	2.201	6.40	4.2180	2.18199
238	2.608	5.40	2.8142	2.58585
276	-2.007	1.80	3.7902	-1.99023
290	4.152	6.20	2.0835	4.11646
321	-2.656	1.00	3.6331	-2.63312
330	2.560	6.40	3.8617	2.53831
349	2.578	6.40	3.8445	2.55545
378	2.034	6.00	3.9839	2.01611
390	-2.062	2.00	4.0446	-2.04463
391	-2.089	1.60	3.6707	-2.07074
401	-2.665	1.00	3.6420	-2.64200
424	2.361	7.00	4.6591	2.34095
468	-2.224	1.60	3.8053	-2.20531
479	-2.528	1.20	3.7066	-2.50661
528	-2.063	1.60	3.6455	-2.04555
530	-2.007	1.40	3.3898	-1.98981

Case Newsbar	Ctal Desident	DIC	Due d'ate d Mal	Desident
Case Number	Std. Residual	BISSUM	Predicted Value	Residual
538	2.627	5.80	3.1956	2.60436
546	-2.688	2.20	4.8646	-2.66465
570	2.015	5.40	3.4022	1.99780
571	-2.947	1.00	3.9218	-2.92178
585	-2.204	1.60	3.7847	-2.18474
592	-2.233	2.20	4.4139	-2.21392
603	4.413	7.00	2.6251	4.37487
618	3.420	5.40	2.0096	3.39043
660	2.641	5.20	2.5819	2.61808
683	-2.127	2.40	4.5089	-2.10887
689	-2.308	1.60	3.8885	-2.28854
714	-2.494	1.00	3.4724	-2.47244
718	-3.252	1.60	4.8245	-3.22448
742	-2.014	1.00	2.9970	-1.99700
772	3.356	6.20	2.8726	3.32736
801	-2.341	1.60	3.9211	-2.32112
852	-2.095	2.00	4.0775	-2.07748
856	2.148	5.20	3.0708	2.12921
880	2.643	6.40	3.7798	2.62015
923	-2.118	2.20	4.3000	-2.10002
1048	-2.092	1.00	3.0737	-2.07374
1070	2.331	7.00	4.6885	2.31148
1107	2.200	5.00	2.8191	2.18088
1145	2.329	5.40	3.0905	2.30951
1177	-2.339	2.00	4.3188	-2.31881
1194	3.654	6.40	2.7778	3.62220
1198	2.086	6.40	4.3318	2.06823
1233	-2.009	1.00	2.9920	-1.99198
1257	2.329	6.20	3.8910	2.30901
1268	2.360	6.20	3.8601	2.33987
1269	-3.149	2.40	5.5219	-3.12190
1276	2.276	6.20	3.9437	2.25629
1279	-2.302	2.60	4.8825	-2.28247
1291	-2.337	2.40	4.7169	-2.31690
1294	-2.884	1.20	4.0592	-2.85921
1304	-2.314	1.40	3.6937	-2.29365
1305	-2.266	1.00	3.2467	-2.24667
1339	-2.140	1.60	3.7215	-2.12146
1364	-2.324	1.80	4.1036	-2.30359
1367	2,605	6.00	3.4169	2.58312
1388	-2.242	2.20	4.4229	-2.22289
1403	2.923	6.80	3.9017	2.89825
1428	-2.117	1.00	3.0990	-2.09900

Casewise Diagnostics^a

a. Dependent Variable: BISsum

Table A7.5.8: Casewise diagnostics

Case	Mahala-	Mahala-	Cooks		SDB							
Nr.	nobis D	nobis D p	Distance	Leverage	0_1	1_1	2_1	3_1	4_1	5_1	6_1	7_1
73	7.828	.552	.006	.005	03	03	.13	.05	05	10	03	05
117	4.386	.884	.002	.003	.01	.00	03	.08	.01	.03	07	.03
140	9.024	.435	.004	.006	.01	09	06	.07	.04	01	02	.05
183	1.846	.994	.001	.001	.01	06	.02	.01	.00	.00	.04	03
193	11.802	.225	.011	.008	.02	10	16	.12	01	.00	04	.04
227	15.237	.085	.006	.011	.02	.15	04	10	10	01	11	.04
233	2.946	.966	.001	.002	.05	06	01	.01	.02	04	01	.01
234	16.921	.050	.007	.012	.00	.13	14	09	01	.13	06	07
238	5.674	.772	.004	.004	.02	.00	03	.08	04	10	01	.04
276	17.650	.039	.006	.012	.00	.02	.06	01	18	05	.00	08

Case	Mahala-	Mahala-	Cooks		SDB							
Nr.	nobis D	nobis D p	Distance	Leverage	0_1	1_1	2_1	3_1	4_1	5_1	6_1	7_1
290	13.467	.143	.020	.009	.11	24	.11	.09	.06	12	11	.21
321	9.866	.361	.006	.007	05	06	.05	.18	01	.06	.04	.02
330	7.120	.625	.004	.005	09	.04	05	.08	.00	08	.13	.03
349	22.679	.007	.013	.016	01	11	.07	11	.11	.24	12	.10
378	4.330	.888	.002	.003	.02	01	.05	03	01	08	.06	02
390	6.329	.707	.002	.004	.02	03	.00	03	.06	.01	06	09
391	5.954	.745	.002	.004	02	02	.01	.04	.06	09	.05	05
401	16.005	.067	.010	.011	.03	.07	04	.06	.07	.02	21	15
424	14.778	.097	.007	.010	09	11	.21	.01	02	.05	.05	.02
468	3.186	.956	.002	.002	01	02	01	05	.06	.01	03	03
479	7.101	.627	.004	.005	.07	.00	.01	06	13	.04	.04	02
528	11.932	.217	.004	.008	04	.08	04	.04	.02	.02	15	.00
530	14.160	.117	.005	.010	05	.09	06	.08	.06	.01	13	.00
538	7.998	.534	.005	.006	03	09	.03	.12	06	.05	.09	05
546	13.986	.123	.009	.010	.07	10	13	.03	.07	.06	.10	04
570	9.118	.426	.003	.006	10	07	.01	.08	.01	.04	.09	.04
571	4.952	.838	.004	.003	.00	.00	02	.08	.08	.00	12	03
585	9.038	.434	.004	.006	08	.03	01	.09	09	.03	04	05
592	6.575	.681	.003	.005	.04	13	.08	01	.07	02	02	04
603	25.613	.002	.042	.018	22	07	37	.24	.14	.16	.31	.10
618	7.924	.542	.008	.006	.02	10	14	.09	.05	01	.02	02
660	6.194	.720	.004	.004	.03	16	.09	.01	04	.01	.01	01
683	5.953	.745	.002	.004	.06	.01	04	07	08	03	03	.00
689	2.040	.991	.001	.001	01	06	.03	.02	.06	01	.00	01
714	2.218	.988	.002	.002	07	.01	02	.00	.06	.01	.00	.00
718	17.094	.047	.015	.012	.04	15	12	03	.09	.15	.08	.14
742	7.265	.610	.003	.005	04	.02	03	06	.03	.05	.04	.09
772	8.152	.519	.008	.006	.02	11	02	05	.19	02	08	.02
801	4.213	.897	.002	.003	.00	01	06	01	.00	.05	.07	.01
852	11.077	.270	.004	.008	.02	11	.05	05	.00	.05	.05	10
856	16.672	.054	.006	.012	.13	.08	13	.07	06	10	.07	06
880	13.597	.137	.008	.010	09	.17	22	.07	.01	02	.09	.06
923	38.171	.000	.014	.027	19	.04	09	.06	11	10	.17	.06
1048	3.602	.936	.002	.003	.04	.00	.03	06	.03	04	.02	03
1070	7.374	.598	.004	.005	08	.11	02	07	07	.02	.04	.05
1107	4.558	.871	.002	.003	.05	.03	10	02	04	.02	03	.01
1145	5.731	.767	.003	.004	.00	05	01	.01	04	02	.06	09
1177	5.658	.774	.003	.004	.03	13	.05	03	.06	.00	.01	04
1194	15.141	.087	.017	.011	.16	15	11	04	.17	.06	.08	16
1198	6.019	.738	.002	.004	05	.03	01	05	01	.11	.00	01
1233	29.112	.001	.010	.020	.07	.15	05	06	11	.13	20	04
1257	8.791	.457	.004	.006	04	05	.03	.03	.16	.05	07	.02
1268	5.753	.764	.003	.004	10	.01	04	.05	.00	.07	.08	.08
1269	27.237	.001	.023	.019	.01	20	.07	.11	25	17	.22	.08
1276	2.031	.991	.001	.001	02	.02	.00	05	.00	.05	04	01
1279	10.384	.320	.005	.007	.08	08	03	04	10	.07	.03	.02
1291	6.527	.686	.003	.005	.09	11	.01	.00	.01	04	.05	06
1294	8.205	.514	.006	.006	.12	15	.15	08	.00	05	02	03
1304	.683	1.000	.001	.000	.02	.01	01	.02	.00	03	.01	02
1305	3.265	.953	.002	.002	.00	.03	02	05	.04	.02	.00	.07
1339	9.682	.377	.004	.007	.03	06	.02	04	07	.10	.05	03
1364	13.831	.128	.006	.010	.00	04	01	.17	.06	11	.06	10
1367	8.168	.517	.005	.006	04	.12	10	.06	04	01	07	.04
1388	18.615	.029	.008	.013	.10	.13	22	.03	.01	09	.02	04
1403	6.798	.658	.005	.005	09	.11	13	.03	.08	.04	04	.06
1428	4.698	.860	.002	.003	.05	.07	03	07	02	05	.01	.01

 Table A7.5.9:
 More casewise diagnostics



Figure A7.5.1: Heteroscedasticity plot of BISsum



Figure A7.5.2: Histogram of BISsum



Figure A7.5.3: Normal probability plot of BISsum













Partial Regression Plot

PERsum

Figure A7.5.4: Partial regression plots

Model = 4Y = BISsumX = SUNsumM = ATTSUMSample size 1431 Outcome: ATTsum Model Summarv R-sq F df1 df2 R .0000 .2546 488.0463 .5046 1.0000 1429.0000 Mode1 coeff se .0877 t p 1.8384 constant 20.9706 .0000 .0220 22.0918 .0000 SUNSUM .4866 Outcome: BISsum Model Summary R-sq .3064 df1 df2 R р .0000 315.4625 2.0000 1428.0000 .5536 Mode1 coeff se t 5.4523 .0000 constant .6732 .1235 .5414 16.6164 7.8792 ATTSUM .0326 .0000 .0000 .2475 SUNSUM .0314 Outcome: BISsum Model Summary R-sq .1723 F 297.5410 df1 1.0000 df2 р .0000. 1429.0000 .4151 Model coeff se 1179. р .0000. t 14.1507 constant 1.6684 SUNSUM .5109 .0296 17.2494 .0000 Total effect of X on Y Effect SE .0296 .5109 17.2494 .0000 Direct effect of X on Y SE .0314 Effect t 7.8792 ,0000 .2475 Indirect effect of X on Y Effect Boot SE BOOTLLCI BOOTULCI .0224 ATTSUM .2634 .2235 .3113 Partially standardized indirect effect of X on Y Boot SE BootLLCI .0174 .1825 BootULCI Effect ATTSUM .2142 .2505 Completely standardized indirect effect of X on Y BootULCI Effect BOOT SE BOOTLLCI .2140 .0176 .1828 .2514 ATTSUM Ratio of indirect to total effect of X on Y Boot SE BootLLCI .0487 .4240 Effect BootULCI .5155 .4240 ATTSUM .6120 Ratio of indirect to direct effect of X on Y Effect Boot SE BootLLCI Boo Boot SE .2225 BOOTULCI 1.0641 .7361 ATTSUM 1.5775 R-squared mediation effect size (R-sq_med) Boot SE .0156 Effect BootLLCI BootULCI ATTSUM .1422 .1117 .1737

Preacher ATTsum	and Kell Effect .2047	ey (2011 Boot) Kappa-sq SE Boot 160 .	uared LLCI Boot 1760 .:	ULCI 2399
Normal th Effe .20	neory tes ect 534	sts for i se .0198	ndirect ef Z 13.2707	fect .0000	
******	******	*** ANAL	YSIS NOTES	AND WARNIN	GS ********

Number of bootstrap samples for bias corrected bootstrap confidence intervals: 1000

Level of confidence for all confidence intervals in output: 95.00

 Table A7.5.10:
 Mediation with variables SUNsum and ATTsum (source: PROCESS 2.0)

Model = 4Y = BISsumX = V74M1 = ATTsumM2 = PBCsumSample size 1431 Outcome: ATTsum Model Summary R .170 df1 df2 R-sq F р 000. 42.314 1.000 1429.000 .029 Mode1 coeff t 69.682 р 000. se .049 3.437 constant v74 .137 .021 6.505 .000 Outcome: PBCsum Model Summary df1 df2 R-sq F R .020 .062 .004 5.452 1.000 1429.000 Model coeff se t р 5.680 .056 101.090 .00Ò constant .024 v74 -.056 -2.335 .020 Outcome: BISsum Model Summary df1 3.000 R-sq .300 df2 R р .000 203.451 .547 1427.000 Model coeff se р 000. 8.960 constant 1.538 .172 .663 .029 22.835 .000 ATTSUM -4.218 -.107 .025 .000 PBCsum 5.062 v74 .118 .023 .000 Total effect of X on Y SE .027 Effect р .000 8.042 .215 Direct effect of X on Y Effect SE р .000. .023 5.062 .118 Indirect effect of X on Y BOOT SE .015 BOOTLLCI BOOTULCI Effect TOTAL .097 .068 .128 .091 .122 ATTSUM .015 .062 PBCsum .006 .003 .001 .014 Partially standardized indirect effect of X on Y Boot SE BOOTLLCI BOOTULCI .012 .057 .104 Effect .104 TOTAL .079 .050 ATTSUM .074 .012 .100 .005 .003 .001 .012 PBCsum Completely standardized indirect effect of X on Y Effect Boot SE BootLLCI BootULCI .014 .068 TOTAL .094 .123 .088 .014 .061 .117 ATTSUM .006 .001 .003 .014 PBCsum Ratio of indirect to total effect of X on Y

TOTAL ATTsum PBCsum	Effect .451 .423 .028	Boot SE .067 .066 .016	BootLLCI .333 .308 .006	BootULCI .595 .568 .068						
Ratio of TOTAL ATTsum PBCsum	indirect Effect .822 .771 .051	to direct Boot SE .244 .234 .032	effect of BootLLCI .498 .465 .012	X on Y BootULCI 1.467 1.390 .142						
Normal th ATTsum PBCsum	eory test Effect .091 .006	s for spec se .015 .003	cific indi Z 6.251 2.000	rect effects p .000 .045	5					
******	*******	** ANALYS	LS NOTES A	ND WARNINGS	*****					
Number of bootstrap samples for bias corrected bootstrap confidence intervals: 1000										
Level of confidence for all confidence intervals in output: 95.00										

 Table A7.5.11:
 Mediation with variables PAS-03, ATTsum and PBCsum
 (source: PROCESS 2.0)

Model = 4Y = BISsumX = TRUsumM1 = ATTsumM2 = PBCsumSample size 1431 Outcome: ATTsum Model Summary F 23.012 df1 df2 R R-sq р 000. .126 1.000 1429.000 .016 Mode1 coeff se .083 t 40.132 р .000 constant 3.334 TRUsum .125 .026 4.797 .000 Outcome: PBCsum Model Summary R-sq .007 df1 df2 F R .082 .002 9.756 1.000 1429.000 Model coeff se t р 5.846 .094 62.288 .000 constant -.092 .029 -3.123 .002 TRUSUM Outcome: BISsum Model Summary F 204.734 df1 3.000 df2 1427.000 R-sq .301 р .000 . 549 Mode1 coeff р 000. se t 6.836 23.189 .188 constant 1.282 .029 ATTSUM .668 .000 -.105 -4.116 .000 PBCsum TRUSUM .028 5.326 .000 .151 Total effect of X on Y Effect SE .033 t 7.432 .000 .244 Direct effect of X on Y Effect .028 t .000 5.326 .151 Indirect effect of X on Y Effect Boot SE .093 .020 .083 .021 BOOTLLCI BOOTULCI .056 .134 TOTAL ATTSUM .003 .010 .004 .019 PBCsum Partially standardized indirect effect of X on Y Effect BOOT SE BOOTLLCI BOOTULCI .076 .045 .108 .016 τοται .017 ATTSUM .068 .102 PBCsum .008 .003 .002 .016 Completely standardized indirect effect of X on Y Boot SE BootLLCI BootULCI .016 .044 .105 Effect TOTAL .073 .036 ATTSUM .066 .016 .099 PBCsum .008 .003 .002 .016 Ratio of indirect to total effect of X on Y Boot SE BootLLCI .076 .245 Effect BOOTULCI .548 TOTAL .381

.197 .504 .341 .076 ATTSUM PBCsum .039 .019 .012 .086 Ratio of indirect to direct effect of X on Y Effect Boot SE BootLLCI BOOTULCI TOTAL .615 .213 .325 1.211 ATTSum .551 .204 .260 1.107 PBCsum .064 .033 .019 .164 Normal theory tests for specific indirect effects Effect se .018 z 4.693 р .000 ATTSUM .083 PBCsum .010 .004 2.443 .015 Number of bootstrap samples for bias corrected bootstrap confidence intervals: 1000 Level of confidence for all confidence intervals in output: 95.00

 Table A7.5.12:
 Mediation with variables TRUsum, ATTsum and PBCsum (source: PROCESS 2.0)

```
Model = 4
   Y = BISsum
   X = PERsum
  M1 = ATTsum
  M2 = SUNsum
  M3 = PBCsum
Sample size
      1431
Outcome: ATTsum
Model Summary
                             df1 df2
1.000 1429.000
             R-sq
                        F
       R
                                               р
.467
     .019
                     .530
             .000
Mode1
           coeff
                     se
                               t
                                       р
                                    .000
                    .169
                          22.653
constant
          3.835
PERsum
           -.020
                    .028
                            -.728
                                     .467
Outcome: SUNsum
Model Summary
             R-sq
.001
                              df1
                        F
                                       df2
                                              р
.247
       R
     .031
                    1.343
                             1.000 1429.000
Model
           coeff
                    se
.176
.029
                                     р
000.
                              t
                          20.808
constant
           3.652
                           1.159
            .034
                                     .247
PERsum
Outcome: PBCsum
Model Summary
             R-sq
.077
                             df1 df2
1.000 1429.000
     R
.277
                                               р
.000
                   118.389
Mode1
           coeff
                    se
.183
                          t
19.661
                                    р
.000
           3.598
constant
PERsum
            .331
                    .030
                          10.881
                                    .000
Outcome: BISsum
Model Summary
                             df1 df2
4.000 1426.000
             R-sq
.322
                   F
168.975
       R
                                               р
.000
     . 567
Mode1
           coeff
                    se
.226
                              t
                                     р
.000
                          5.294
17.156
           1.198
constant
                                     .000
           .556
                    .032
ATTSUM
                           8.449
                                    .000
SUNsum
           .264
                    .031
PBCsum
           -.146
                           -5.604
                                     .000
                    .026
           .029
                            .950
PERsum
                    .031
                                     .342
Total effect of X on Y
   Effect
           SE
.036
                        t
    -.022
                              . 548
                     -.601
Direct effect of X on Y
          SE
.031
   Effect
                        t
                              р
.342
    .029
                     .950
Indirect effect of X on Y
        Effect
               Boot SE
                      BOOTLLCI
                               BOOTULCI
                 .023
TOTAL
         -.051
                       -.094
                                -.004
                  .014
ATTSUM
         -.011
                         -.039
                                  .017
         .009
                  .009
                         -.008
                                   .027
SUNSUM
PBCsum
         -.048
                  .011
                          -.073
                                  -.029
```

Partia TOTAL ATTsum SUNsum PBCsum	Ally standar Effect 041 1009 1 .007 1039	dized indi Boot SE .018 .012 .007 .009	rect effec BootLLCI 078 032 006 059	t of X on BootULCI 003 .014 .022 024	Υ					
Comple TOTAL ATTsum SUNsum PBCsum	etely standa Effect 038 1008 1 .007 1036	rdized ind Boot SE .016 .010 .006 .008	irect effe BootLLCI 070 028 006 054	ct of X on BootULCI 003 .013 .020 022	Y					
Ratio TOTAL ATTsum SUNsum PBCsum	of indirect Effect 2.359 1 .527 1413 1 2.245	to total Boot SE 15.377 4.126 6.745 19.254	effect of BootLLCI .526 380 -63.889 .558	X on Y BootULCI 127.656 33.654 .134 190.721						
Ratio TOTAL ATTsum SUNsum PBCsum	of indirect Effect -1.736 1388 1 .304 1 -1.653	to direct Boot SE 47.731 12.210 6.245 36.956	effect of BootLLCI -495.633 -20.550 500 -476.699	X on Y BootULCI 1.537 1.432 36.732 1.856						
Normal ATTsum SUNsum PBCsum	theory tes Effect 1011 1 .009 1048	ts for spe se .016 .008 .010	cific indi z 726 1.140 -4.965	rect effec p .468 .254 .000	ts					
******************* ANALYSIS NOTES AND WARNINGS ************************************										
WARNIN	WARNING: Bootstrap CI endpoints below not trustworthy. Decrease confidence or increase bootstraps -63.889									

Level of confidence for all confidence intervals in output: 95.00

Table A7.5.13: Mediation with variables PERsum, ATTsum, SUNsum and PBCsum (source: PROCESS 2.0)

Model = 4Y = BISsumX = IGCsumM = SEFsum Sample size 1431 Outcome: SEFsum Model Summary R-sq .0233 F df1 df2 R .0000 34.0708 .1526 1.0000 1429.0000 Mode1 coeff se t р .0000. 3.6567 .1716 21.3052 constant -.1702 .0292 -5.8370 .0000 IGCsum Outcome: BISsum Model Summary df1 df2 R R-sq F ,0000 .2235 37.5426 2.0000 1428.0000 .0500 Mode1 coeff se р .0000. t .2288 3.0349 13.2657 constant .2605 8.4802 .0000 SEFsum IGCsum -.0160 .0343 -.4659 .6414 Total effect of X on Y Effect SE -.0603 .0347 t р .0824 -1.7382 Direct effect of X on Y Effect SE .0343 -.0160 -.4659 .6414 Indirect effect of X on Y Boot SE BOOTLLCI Effect BootULCI SEFsum -.0443 .0104 -.0666 -.0260 Partially standardized indirect effect of X on Y BOOT SE BOOTLLCI BootULCI Effect .0084 -.0361 -.0542 SEFsum -.0210 Completely standardized indirect effect of X on Y Boot SE .0078 BOOTLLCI BootULCI Effect -.0508 SEFsum -.0338 -.0198 Ratio of indirect to total effect of X on Y Boot SE BOOTLLCI BOOTULCI 12.7774 .2384 7.7097 Effect 7.7097 .7353 SEESUM Ratio of indirect to direct effect of X on Y BOOT SE BOOTLLCI 147.8255 .7083 Effect BootULCI .7083 SEFsum 2.7776 4468.0745 R-squared mediation effect size (R-sq_med) Effect Boot SE BootLLCI BootULCI SEFsum .0020 .0019 -.0012 .0062 Preacher and Kelley (2011) Kappa-squared Effect Boot SE BootLLCI SEFsum .0340 .0078 .0198 BootULCI .0512 Normal theory tests for indirect effect Effect se .0000 .0093 -4.7856 -.0443

Number of bootstrap samples for bias corrected bootstrap confidence intervals: 1000 Level of confidence for all confidence intervals in output: 95.00

Table A7.5.14: Mediation with variables IGCsum and SEFsum (source: PROCESS 2.0)

.056

.046

.069

.054

.049

.083

.090

.096

.132

Model = 2Y = BISSUM X = PBCsumM = IGCsum $W = \sqrt{74}$ Sample size 1431 Outcome: BISsum Model Summary df1 df2 R R-sq F р 000. .211 12.411 5.000 1425.000 .044 Mode1 coeff ULCI LLCI se t .000 .033 111.694 3.636 3.572 3.700 constant -.688 -.099 .047 IGCsum -.026 .037 .492 -.016 .033 -.488 .626 -.081 .049 PBCsum .329 int_1 .010 .030 .742 -.049 .069 .157 .214 .029 7.351 .000 .271 v74 int_2 .020 .025 .785 .433 -.030 .070 Interactions: PRCSUM IGCsum int_1 Х х int_2 PBCsum v74 Conditional effect of X on Y at values of the moderator(s): Effect ULCI v74 IGCsum se LLCI р .377 t -1.010 -.937 -.046 .052 -.883 -.147 .000 .042 -.036 -.869 .385 -1.010 -.118 .049 -.549 .937 -.027 -1.010.583 -.123 -.105 .000 -.937 -.025 .041 -.624 .533 .000 .000 -.016 .033 -.488 .626 -.081 .000 .937 -.007 .046 -.148 .883 -.097 -.937 .047 .973 1.189 -.002 -.034 -.093 .045 .172 .000 1.189 .008 .863 -.080 1.189 .937 .017 .059 .290 .772 -.098 Values for quantitative moderators are the mean and plus/minus one SD from mean. Values for dichotomous moderators are the two values of the moderator. NOTE: For at least one moderator in the conditional effects table above, one SD below the mean was replaced with the minimum because one SD below the mean is outside of the range of the data. Data for visualizing conditional effect of X of Y: PBCsum v74 IGCsum yhat -1.084 -1.010-.937 3.494 .000 -.937 3.445 3.395 -1.010 1.084 -1.010 -.937 -1.084 -1.010 .000 3.460 .000 -1.010 .000 3.421 .000 1.084 -1.010 3.381 3.426 -1.084 .937 -1.010 .000 -1.010 .937 3.397 1.084 .937 -1.0103.367 -1.084.000 -.937 3.688 .000 .000 -.937 3.660 1.084 .000 -.937 3.633 .000 -1.084.000 3.654 .000 .000 .000 3.636 1.084 .000 .000 3.619 -1.084 .000 .937 3.620 .000 .000 .937 3.612 1.084 .000 .937 3.605 -1.0841.189 -.937 3.916

1 -1 1 -1	.000 L.084 L.084 .000 L.084 L.084 .000 L.084	1.189 1.189 1.189 1.189 1.189 1.189 1.189 1.189 1.189	937 937 .000 .000 .937 .937 .937	3.914 3.913 3.882 3.890 3.899 3.848 3.866 3.885							
******************** ANALYSIS NOTES AND WARNINGS *******************************											
Level	evel of confidence for all confidence intervals in output: 95.00										
NOTE:	The follo PBCsum	owing varia IGCsum V	bles were 74	mean centered	prior to analysis:						
NOTE:	NOTE: The Johnson-Neyman method is available only for Models 1 and 3										
NOTE:	All stand HC3 estin	dard errors mator	for cont	inuous outcome	models are based on the						

Table A7.5.15: Moderating effects of PAS-03 and IGCsum on the relation between
PBCsum and BISsum (source: PROCESS 2.0)
Model = 2Y = BISSUM X = PBCsumM = IGCsumW = V74Statistical Controls: CONTROL= ATTSUM SUNSUM TRUSUM SEEsum PFRSum Sample size 1431 Outcome: BISsum Model Summary R-sq F df1 df2 R р .000 . 595 .354 70.981 10.000 1420.000 Mode1 coeff ULCI LLCI se t -.294 -.857 .269 .287 -1.024 . 306 constant -.509 .040 .059 .611 -.100 TGCSUM -4.214 PBCsum -.113 .027 .000 -.166 -.061 int_1 -.003 .023 -.126 .900 -.048 .042 3.981 .095 .024 .000 .048 v74 .142 .628 13.959 6.285 .530 int_2 .012 .020 -.026 .051 .000 .037 .449 .596 .522 ATTSUM .230 .037 .159 SUNSUM .000 .302 TRUSUM .090 .030 2.976 .003 .031 .149 SEFsum .135 .030 4.524 .000 .076 .193 1.976 .079 .048 PERSUM .040 .001 .158 Interactions: int_1 PBCsum IGCsum Х int_2 PBCsum X V74 х Conditional effect of X on Y at values of the moderator(s): v74 Effect р 002. LLCI ULCI IGCSUM se t -1.010 -3.091 .040 -.937 -.123 -.201 -.045 -.190 -1.010 .000 -.126 .033 -3.834 .000 -.061 .937 -.128 .039 -3.314 .001 -.204 -1.010-.052 -.937 -.111 .001 -.173 .000 .032 -3.470 -.048 -4.214 .000 .000 -.113 .027 .000 -.166 -.061 .002 .000 .937 -.116 .037 -3.139 -.188 -.044 -2.609 1.189 -.937 -.096 .037 .009 -.168 -.024 1.189 .000 -.099 .036 .007 -.170 -.028 1.189 -.101 .047 .031 -.194 .937 -2.156- . 009 Values for quantitative moderators are the mean and plus/minus one SD from mean. Values for dichotomous moderators are the two values of the moderator. NOTE: For at least one moderator in the conditional effects table above, one SD below the mean was replaced with the minimum because one SD below the mean is outside of the range of the data. Data for visualizing conditional effect of X of Y: yhat v74 PBCsum IGCSUM 3.695 -1.010 -.937 -1.084-.937 .000 -1.0103.562 1.084 -1.010-.937 3.429 .000 -1.084 -1.010 3.679 .000 .000 -1.010 3.543 3.407 -1.010.000 -1.084 -1.010.937 3.663 .000 -1.010.937 3.524 .937 1.084 -1.010 3.384 -1.084 .000 -.937 3.778 .000 .000 -.937 3.658 1.084 .000 -.937 3.538

-1.084	.000	.000	3.761
.000	.000	.000	3.639
1 084	000	000	3 516
1 004	.000	027	2 745
-1.004	.000	.957	5.743
.000	.000	.937	3.619
1.084	.000	.937	3.494
-1.084	1.189	937	3.875
.000	1.189	937	3.771
1.084	1.189	- 937	3.667
_1 084	1 1 2 0	000	3 858
-1.084	1.109	.000	5.050
.000	1.189	.000	3.752
1.084	1.189	.000	3.645
-1.084	1.189	.937	3.842
.000	1.189	.937	3.732
1 08/	1 1 2 0	037	3 622
T.004	T'TO?	. 337	J.022

Estimates in this table are based on setting covariates to their sample means

******************** ANALYSIS NOTES AND WARNINGS ********************************

- Level of confidence for all confidence intervals in output: 95.00
- NOTE: The following variables were mean centered prior to analysis: PBCsum IGCsum V74

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

 Table A7.5.15a:
 Covariates for moderating effects of PAS-03 and IGCsum on the relation between PBCsum and BISsum (source: PROCESS 2.0)

Model = 2Y = BISSUM X = SEFsumM = ATTSUMW = PBCsumSample size 1431 Outcome: BISsum Model Summary df1 df2 R R-sq F р 000. 5.000 .565 120.845 1425.000 .320 Mode1 coeff se 028. LLCI ULCT t р .000 130.099 3.587 3.641 3.696 constant .736 ATTSUM .672 .033 20.679 .000 .609 6.206 SEFsum .187 .030 .000 .128 .246 .033 2.034 .132 int 1 .067 .042 .002 -.090 -3.309 .001 -.037 -.143 PBCSUM 2.443 int_2 .063 .026 .015 .013 .114 Interactions: SEESUM **ATTSUM** int_1 Х int_2 х SEFsum PBCsum Conditional effect of X on Y at values of the moderator(s): Effect LLCI ULCI PBCsum ATTSUM se t .053 .050 1.060 .289 -.045 -1.084 -.963 .152 .001 .000 .049 -1.084 .035 3.332 .188 .000 -1.084 .963 .045 4.078 .095 .183 .271 .000 -.963 .122 .051 2.384 .017 .022 .222 .000 .000 .187 .030 6.206 .000 .128 .246 .252 7.195 .183 .000 .963 .035 .000 .320 .191 -.963 .004 1.084 .065 .062 .319 .000 1.084 .255 .165 .346 .000 .046 5.525 1.084 .963 .320 .045 7.134 .000 .232 .408 Values for quantitative moderators are the mean and plus/minus one SD from mean. Values for dichotomous moderators are the two values of the moderator. Data for visualizing conditional effect of X of Y: yhat SEFsum PBCsum ATTSUM -.963 3.035 3.091 -1.045 -1.084 .000 -1.084 -.963 -.963 1.045 -1.084 3.147 -1.045 -1.084 .000 3.615 .000 .000 -1.084 3.739 -1.084 3.862 .000 1.045 4.196 -1.045 -1.084 .963 .963 .000 -1.084 4.387 1.045 -1.084 .963 4.578 .000 -.963 2.866 -1.045.000 .000 2.994 -.963 -.963 3.121 .000 .000 -1.045.000 3.446 .000 .000 .000 3.641 1.045 .000 .000 3.837 -1.045 .000 .963 4.026 .000 .963 .000 4.289 .963 1.045 .000 4.552

-1.045

.000

.000

1.045

-1.045

1.084

1.084

1.084

1.084

1.084

-.963

-.963

-.963

.000

.000

2.697

2.896

3.095

3.277

3.544

-	1.045 1.045 .000 1.045	1.084 1.084 1.084 1.084	.000 .963 .963 .963	3.811 3.857 4.192 4.527	
*****	******	***** ANAL	SIS NOTE:	S AND WARNINGS	*****
Level	of confi 95.00	dence for a	ll confid	ence intervals	in output:
NOTE:	The foll SEFsum	owing varial ATTsum PI	oles were 3Csum	mean centered	prior to analysis:
NOTE:	The John	son-Neyman r	method is	available only	y for Models 1 and 3

NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

Table A7.5.16:Moderating effects of ATTsum and PBCsum on the relation
between SEFsum and BISsum (source: PROCESS 2.0)



Figure A7.5.5: Simplified simple slopes diagram for SEFsum and BISsum (yhat), dependent on different combinations of high and low values of moderators ATTsum and PBCsum (mid values left out for clarity)

Model = 2Y = BISsum X = TRUsumM = PBCSUMW = IGCsum Sample size 1431 Outcome: BISsum Model Summary df1 df2 R R-sq F р 000. .195 .038 8.715 5.000 1425.000 Mode1 coeff se .032 t 112.415 LLCI ULCI р .000 3.574 constant 3.638 3.701 -.440 6.297 .050 PBCsum -.015 .033 .660 TRUSUM .239 .038 .000 .165 .314 -.259 .796 .064 -.010 int 1 .038 -.084 . 508 -.024 .037 -.662 -.097 .048 TGCSUM .046 .277 .013 .782 -.078 int_2 .103 Interactions: PBCSUM TRUsum int_1 Х int_2 х TRUsum IGCsum Conditional effect of X on Y at values of the moderator(s): IGCsum PBCsum Effect LLCI ULCI se t p .113 .363 -.937 -1.084 .238 .064 3.725 .005 .238 .227 .217 .250 .239 .000 3.890 2.773 .000 -.937 .058 .113 -.937 1.084 .006 .078 .370 .063 4.757 .000 -1.084 .053 .000 .147 .353 .000 .000 .038 6.297 .000 .165 .314 .229 3.875 .000 1.084 .059 .000 .113 .345 .000 .072 3.639 .121 .403 .937 -1.084 .262 .000 .140 .937 .000 .251 .057 4.433 .363 .937 1.084 .241 .068 3.548 .000 .108 .374 Values for quantitative moderators are the mean and plus/minus one SD from mean. Values for dichotomous moderators are the two values of the moderator.

Data for visualizing conditional effect of X of Y:

TRUsum 972 .000 .972 972 .000 .972	IGCsum 937 937 937 937 937 937	PBCsum -1.084 -1.084 -1.084 .000 .000 .000	yhat 3.445 3.676 3.908 3.439 3.661 3.882
972	937	1.084	3.434
.000	937	1.084	3.645
.972	937	1.084	3.856
972	.000	-1.084	3.410
.000	.000	-1.084	3.897
972	.000	.000	3.405
.000	.000	.000	3.638
.972	.000	.000	3.870
972	.000	1.084	3.399
.000	.000	1.084	3.622
.972	.000	1.084	3.844
972	.957	-1.084	3.570
.000	.937	-1.084	3.885
972	.937	.000	3.370
.000	.937	.000	3.615

-	.972 972 .000 .972	.937 .937 .937 .937 .937	.000 1.084 1.084 1.084	3.859 3.365 3.599 3.833			
*****	******	***** ANA	LYSIS NOTE	S AND WARNINGS	*****	*****	*
Level	of confid 95.00	ence for	all confid	ence intervals	in output:		

NOTE: The following variables were mean centered prior to analysis: TRUsum PBCsum IGCsum

NOTE: The Johnson-Neyman method is available only for Models 1 and 3

NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

Table A7.5.17: Moderating effects of PBCsum and IGCsum on the relation between TRUsum and BISsum (source: PROCESS 2.0)

Model = 1Y = BISSUM X = ATTSUMM = IGCSUMSample size 1431 Outcome: BISsum Model Summary df1 df2 R-sq F р 000. 144.553 3.000 .526 .277 1427.000 Mode1 coeff se 028. LLCI ULCT р .000 t 130.833 3.637 3.582 3.691 constant -.092 IGCsum -.034 .030 -1.121 .263 .025 .671 .033 20.310 .000 .606 .735 ATTSUM -.207 -.007 int 1 .036 .836 -.078 .063 Interactions: int_1 ATTSUM Х IGCsum ****** Conditional effect of X on Y at values of the moderator(s): Effect IGCSUM LLCI ULCI se t -.937 13.124 .000 .779 .678 .671 .052 .576 .000 20.310 .735 .033 .000 .606 .937 .663 .043 15.590 .000 .580 747 Values for quantitative moderators are the mean and plus/minus one SD from mean. Values for dichotomous moderators are the two values of the moderator. There are no statistical significance transition points within the observed range of the moderator Data for visualizing conditional effect of X of Y: ATTSUM IGCsum yhat -.937 3.015 3.668 -.963 - 937 .000 -.937 .963 4.321 -.963 .000 2.991 .000 3.637 .000 .963 .000 4.283 2.966 -.963 .937 .937 .000 3.605 .937 4.245 .963 *********************** ANALYSIS NOTES AND WARNINGS ***************************** Level of confidence for all confidence intervals in output: 95.00 NOTE: The following variables were mean centered prior to analysis: ATTSUM IGCsum NOTE: All standard errors for continuous outcome models are based on the HC3 estimator Table A7.5.18: Moderating effects of IGCsum on the relation between ATTsum and BISsum (source: PROCESS 2.0)

Model = 1Y = BISSUM X = SUNSUMM = IGCsumSample size 1431 Outcome: BISsum Model Summarv R-sq .176 F df1 df2 R р 000. .419 86.119 3.000 1427.000 Mode1 coeff se р .000 LLCI ULCI t 122.905 .030 3.579 3.637 3.695 constant -.076 -2.376 -.139 .032 .018 IGCsum -.013 15.718 .578 SUNsum .514 .033 .000 .450 -.014 .030 -.462 -.072 .044 int_1 .644 Interactions: int_1 SUNsum Х IGCsum Conditional effect of X on Y at values of the moderator(s): IGCsum Effect se LLCI ULCI t р -.937 .526 .040 13.288 .00Ö .449 .604 .514 .000 15.718 .033 .000 .450 .578 10.914 .046 .591 .937 .501 .000 .411 Values for quantitative moderators are the mean and plus/minus one SD from mean. Values for dichotomous moderators are the two values of the moderator. There are no statistical significance transition points within the observed range of the moderator Data for visualizing conditional effect of X of Y: SUNsum IGCsum yhat -.999 -.937 3.183 .000 -.937 3.709 -.937 .999 4.235 - . 999 .000 3.124 .000 .000 3.637 .999 .000 4.151 -.999 .937 3.066 .000 .937 3.566 .937 4.066 .999 ********************** ANALYSIS NOTES AND WARNINGS ***************************** Level of confidence for all confidence intervals in output: 95.00 NOTE: The following variables were mean centered prior to analysis: SUNSUM IGCSum NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

 Table A7.5.19: Moderating effects of IGCsum on the relation between SUNsum and

 BISsum (source: PROCESS 2.0)

H no.	Hypothesis	Confirmed			
H1.1	ATT positively affects BIS.	V			
H1.2	SUN positively affect BIS.	V			
H1.3	PBC positively affects BIS.	Х			
H1.4	SUN positively affect ATT.	V			
H1.4a	SUN have an indirect positive effect on BIS , mediated by ATT . In light of the direct effect of SUN on BIS in H1.2, this mediation is partial.	V			
H2.1	PAF positively affects BIS.	V			
H2.3	PAF positively affects ATT.	V			
H2.3a	PAF has an indirect positive effect on BIS , mediated by ATT . In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.	V			
H2.4	PAF positively affects PBC.	Х			
H2.5	PAF positively moderates (strengthens) the relation between PBC and BIS .	Х			
H2.4a	PAF has an indirect positive effect on BIS , mediated by PBC . In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.	Х			
H3.1	TRU positively affects ATT.	V			
H3.1a	There is an indirect positive effect of TRU on BIS , mediated by ATT . In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.				
H3.2	TRU negatively affects PBC.	V			
H3.2a	There is an indirect negative effect of TRU on BIS , mediated by PBC . In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.	Х			
H3.3	TRU positively affects BIS.	V			
H3.6	SEF positively affects BIS.	v^{446}			
H3.7	ATT positively moderates (strengthens) the relation between SEF and BIS .	V			
H3.9	PBC positively moderates (strengthens) the relation between SEF and BIS .	v			
H3.11	PBC positively moderates (strengthens) the relation between TRU and BIS .	Х			

⁴⁴⁶ Conditional on H3.7 and H3.9 because there is no effect when ATT and PBC are low.

H no.	Hypothesis	Confirmed
H4.1	High PER positively affects ATT .	Х
H4.1a	There is an indirect positive effect of PER on BIS , mediated by ATT . Since there is no hypothesis to support a direct effect of PER on BIS , this mediation is full.	Х
H4.2	High PER positively affects SUN .	Х
H4.2a	There is an indirect positive effect of PER on BIS , mediated by SUN . Since there is no hypothesis to support a direct effect of PER on BIS , this mediation is full.	Х
H4.3	High PER positively affects PBC.	v
H4.3a	There is an indirect positive effect of PER on BIS , mediated by PBC . Since there is no hypothesis to support a direct effect of PER on BIS , this mediation is full.	v ⁴⁴⁷
H4.11	High IGC negatively moderates (weakens) the relation between ATT and BIS .	Х
H4.12	High IGC positively moderates (strengthens) the relation between SUN and BIS.	Х
H4.13	High IGC negatively moderates (weakens) the relation between PBC and BIS .	Х
H4.14	High IGC negatively affects BIS.	Х
H4.15	High IGC negatively affects SEF.	v
H4.15a	There is an indirect negative effect of IGC on BIS , mediated by SEF . In light of the direct effect of IGC on BIS in H4.16, this mediation is partial.	v ⁴⁴⁸
H4.16	High IGC positively moderates (strengthens) the relation between TRU and BIS.	Х

 Table A7.5.20
 Summary of RA hypotheses test results (x = rejected)

⁴⁴⁷ Directionality is reversed due to H1.3.
⁴⁴⁸ Mediation is full, not partial, due to H4.14.

	Hypothesis	Regression	SEM
H1.1	ATT positively affects BIS.	٧	٧
H1.2	SUN positively affect BIS.	v	-
H1.3	PBC positively affects BIS.	Х	Х
H1.4	SUN positively affect ATT.	v	٧
H1.4a	SUN have an indirect positive effect on BIS , mediated by ATT . In light of the direct effect of SUN on BIS in H1.2, this mediation is partial.	V	V ⁴⁴⁹
H2.1	PAF positively affects BIS.	V	٧
H2.3	PAF positively affects ATT.	V	٧
H2.3a	PAF has an indirect positive effect on BIS , mediated by ATT . In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.	V	٧
H2.4	PAF positively affects PBC.	Х	-
H2.5	PAF positively moderates (strengthens) the relation between PBC and BIS .	-	error
H2.4a	PAF has an indirect positive effect on BIS , mediated by PBC . In light of the direct effect of PAF on BIS in H2.1, this mediation is partial.	Х	-
H3.1	TRU positively affects ATT.	v	-
H3.1a	There is an indirect positive effect of TRU on BIS , mediated by ATT . In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.	V	-
H3.2	TRU negatively affects PBC.	v	-
H3.2a	There is an indirect negative effect of TRU on BIS , mediated by PBC . In light of the direct effect of TRU on BIS in H3.3, this mediation is partial.	Х	-
H3.3	TRU positively affects BIS.	v	٧
H3.6	SEF positively affects BIS.	v^{450}	٧
H3.7	ATT positively moderates (strengthens) the relation between SEF and BIS .	٧	-
H3.9	PBC positively moderates (strengthens) the relation between SEF and BIS .	v	٧
H3.11	PBC positively moderates (strengthens) the relation between TRU and BIS .	-	٧

 ⁴⁴⁹ Mediation is full rather than partial.
 ⁴⁵⁰ Conditional on H3.7 and H3.9 because there is no effect when ATT and PBC are low.

H4.1	PER positively affects ATT.	Х	-
H4.1a	There is an indirect positive effect of PER on BIS , mediated by ATT . Since there is no hypothesis to support a direct effect of PER on BIS , this mediation is full.	х	-
H4.2	PER positively affects SUN.	Х	-
H4.2a	There is an indirect positive effect of PER on BIS , mediated by SUN . Since there is no hypothesis to support a direct effect of PER on BIS , this mediation is full.	х	-
H4.3	PER positively affects PBC.	v	٧
H4.3a	There is an indirect positive effect of PER on BIS , mediated by PBC . Since there is no hypothesis to support a direct effect of PER on BIS , this mediation is full.	V ⁴⁵¹	-
H4.11	High IGC negatively moderates (weakens) the relation between ATT and BIS .	-	-
H4.12	High IGC positively moderates (strengthens) the relation between SUN and BIS .	-	-
H4.13	High IGC negatively moderates (weakens) the relation between PBC and BIS.	-	-
H4.14	High IGC negatively affects BIS.	-	-
H4.15	High IGC negatively affects SEF.	v	٧
H4.15a	There is an indirect negative effect of IGC on BIS , mediated by SEF . In light of the direct effect of IGC on BIS in H4.16, this mediation is partial.	v ⁴⁵²	-
H4.16	High IGC positively moderates (strengthens) the relation between TRU and BIS .	-	-

Table A7.5.21: Summary of RA and SEM hypotheses test results

x = rejected; significant effect, but small or opposite direction

- = not confirmed; insignificant effect)

⁴⁵¹ Directionality reversed due to H1.3.
⁴⁵² Mediation is full, not partial, due to H4.14.

	Minimum	Maximum	Mean	Std. Deviation
ATTsum	1.00	7.00	3.7131	.96344
SUNsum	1.00	7.00	3.8530	.99910
PBCsum	1.67	7.00	5.5670	1.08368
TRUsum	1.00	7.00	3.0423	.97214
SEFsum	1.00	7.00	2.6676	1.04476
IGCsum	1.00	7.00	5.8117	.93681
PERsum	1.00	7.00	5.9558	.90681
BISsum	1.00	7.00	3.6370	1.22968

A7.6 Post Oral Examination Complements

Table A7.6.1: Means of summated scale variables in regression

Construct	Estimate	Lower	Upper	p (Two-Tailed)
ATT	.412	.343	.475	.003
BIS	.323	.263	.380	.004

 Table A7.6.2:
 R^2 for Model A with bootstrapped CI of 90%; 1,000 bootstrap samples

Construct	Estimate	Lower	Upper	p (Two-Tailed)
SUN	.002	.000	.009	.002
SEF	.035	.019	.059	.001
PBC	.123	.080	.170	.003
ATT	.402	.333	.464	.004
BIS	.331	.270	.381	.006

Table A7.6.3: R^2 for Model B with bootstrapped CI of 90%; 1,000 bootstrap
samples

Tested criteria	Result	df	Sig.
<i>Configural</i> model ⁴⁵³	Chi-square = 2,835.591	df = 886	p = .000
	CFI = .883		
<i>Constrained</i> model ⁴⁵⁴	Chi-square = 2,896.269	df = 909	p = .000
	CFI = .880		
Chi-square difference test	Δ Chi-square = 60.678	∆ df = 23	p = .000
CFI difference	Δ CFI = .003		

Table A7.6.4: Factorial invariance when grouped by ATT

Tested criteria	Result	df	Sig.
<i>Configural</i> model ⁴⁵⁵	Chi-square = 2,918.606	df = 886	p = .000
	CFI = .892		
<i>Constrained</i> model ⁴⁵⁶	Chi-square = 3,010.873	df = 909	p = .000
	CFI = .889		
Chi-square difference test	Δ Chi-square = 92.267	Δ df = 23	p = .000
CFI difference	Δ CFI = .003		

Table A7.6.5: Factorial invariance when grouped by PBC

Tested criteria	Result	df	Sig.
<i>Configural</i> model ⁴⁵⁷	Chi-square = 2,905.171	df = 886	p = .000
	CFI = .881		
<i>Constrained</i> model ⁴⁵⁸	Chi-square = 2,978.585	df = 909	p = .000
	CFI = .878		
Chi-square difference test	Δ Chi-square = 73.414	∆ df = 23	p = .000
CFI difference	Δ CFI = .003		

Table A7.6.6: Factorial invariance when grouped by IGC

⁴⁵³ All parameters free to vary between groups.

⁴⁵⁴ All factor loadings constrained to be equal across groups, other parameters free to vary.

⁴⁵⁵ All parameters free to vary between groups.

⁴⁵⁶ All factor loadings constrained to be equal across groups, other parameters free to vary.

⁴⁵⁷ All parameters free to vary between groups.

⁴⁵⁸ All factor loadings constrained to be equal across groups, other parameters free to vary.

Hs	Hypotheses	Measure used B	Benchmark	Measure used	Benchmark	Confirmed ⁴⁵⁹	
		(RA)	(RA)	(SEM)	(SEM)	RA	SEM
H1.4a	Subjective Norms (SUN) have an indirect positive effect on Switching Intention (BIS), mediated by an individual's Attitude towards Switching (ATT). In light of the direct effect of Subjective Norms (SUN) on Switching Intention (BIS) in H1.2, this mediation is partial.	Standardized indirect regression coefficient ⁴⁶⁰ , Cl	Non-triviality (assessed individually ⁴⁶¹), CI must not include 0	Standardized indirect path coefficient ⁴⁶² , CI, p-value	Non-triviality (assessed individually ⁴⁶³), CI not to include 0, significance (p < .05)	V	v ⁴⁶⁴
H2.3a	Past Frequency (PAF) has an indirect positive effect on Switching Intention (BIS), mediated by an individual's Attitude towards Switching (ATT). In light of the direct effect of Past Frequency (PAF) on Switching Intention (BIS) in H2.1, this mediation is partial.	Standardized indirect regression coefficient ⁴⁶⁵ , Cl	Non-triviality (assessed individually ⁴⁶⁶), CI not to include 0	Standardized indirect path coefficient ⁴⁶⁷ , CI, p-value	Non-triviality (assessed individually ⁴⁶⁸), CI not to include 0, significance (p < .05)	V	V
H2.4a	Past Frequency (PAF) has an indirect positive effect on Switching Intention	Standardized indirect regression coefficient ⁴⁶⁹ ,	Non-triviality (assessed individually ⁴⁷⁰), Cl not to	Standardized indirect path coefficient ⁴⁷¹ , CI, p-value	Non-triviality (assessed individually ⁴⁷²), CI not to	x	-

⁴⁵⁹ "X" = rejected, "-" = not confirmed, "V" = confirmed

⁴⁶⁰ Calculated by PROCESS 2.0 by multiplying the two direct effects that make up the mediation.

- ⁴⁶¹ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).
- ⁴⁶² Calculated by AMOS by multiplying the two direct effects that make up the mediation.
- ⁴⁶³ Since mediation effects are always relatively low (they are calculated as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).
- ⁴⁶⁴ Mediation is full rather than partial.
- ⁴⁶⁵ Calculated by PROCESS 2.0 by multiplying the two direct effects that make up the mediation.
- ⁴⁶⁶ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).
- ⁴⁶⁷ Calculated by AMOS by multiplying the two direct effects that make up the mediation.
- ⁴⁶⁸ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).
- ⁴⁶⁹ Calculated by PROCESS 2.0 by multiplying the two direct effects that make up the mediation.
- ⁴⁷⁰ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).

	(BIS), mediated by an individual's Perceived Behavioural Control (PCB). In light of the direct effect of Past Frequency (PAF) on Switching Intention (BIS) in H2.1, this mediation is partial.	CI	include 0		include 0, significance (p < .05)		
H3.2a	There is an indirect negative effect of Lack of Trust (TRU) on Switching Intention (BIS), mediated by an individual's Perceived Behavioural Control (PBC). In light of the direct effect of Lack of Trust (TRU) on Switching Intention (BIS) in H3.3, this mediation is partial.	Standardized indirect regression coefficient ⁴⁷³ , Cl	Non-triviality (assessed individually ⁴⁷⁴), CI not to include 0	Standardized indirect path coefficient ⁴⁷⁵ , CI, p-value	Non-triviality (assessed individually ⁴⁷⁶), Cl not to include 0, significance (p < .05)	X	-
H4.1a	There is an indirect positive effect of Performance Orientation (PER) on Switching Intention (BIS), mediated by Attitude towards Switching (ATT). Since there is no hypothesis to support a direct effect of	Standardized indirect regression coefficient ⁴⁷⁷ , Cl	Non-triviality (assessed individually ⁴⁷⁸), Cl not to include 0	Standardized indirect path coefficient ⁴⁷⁹ , CI, p-value	Non-triviality (assessed individually ⁴⁸⁰), Cl not to include 0, significance (p < .05)	x	-

⁴⁷¹ Calculated by AMOS by multiplying the two direct effects that make up the mediation.

⁴⁷² Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).

- ⁴⁷³ Calculated by PROCESS 2.0 by multiplying the two direct effects that make up the mediation.
- ⁴⁷⁴ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).
- ⁴⁷⁵ Calculated by AMOS by multiplying the two direct effects that make up the mediation.
- ⁴⁷⁶ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).
- ⁴⁷⁷ Calculated by PROCESS 2.0 by multiplying the two direct effects that make up the mediation.
- ⁴⁷⁸ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).
- ⁴⁷⁹ Calculated by AMOS by multiplying the two direct effects that make up the mediation.
- ⁴⁸⁰ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).

	Orientation (PER) on Switching Intention (BIS), this mediation is full.						
H4.2a	There is an indirect positive effect of Performance Orientation (PER) on Switching Intention (BIS), mediated by Subjective Norms (SUN). Since there is no hypothesis to support a direct effect of Performance Orientation (PER) on Switching Intention (BIS), this mediation is full.	Standardized indirect regression coefficient ⁴⁸¹ , Cl	Non-triviality (assessed individually ⁴⁸²), CI not to include 0	Standardized indirect path coefficient ⁴⁸³ , CI, p-value	Non-triviality (assessed individually ⁴⁸⁴), CI not to include 0, significance (p < .05)	x	-
H4.3a	There is an indirect positive effect of Performance Orientation (PER) on Switching Intention (BIS), mediated by Perceived Behavioural Control (PBC). Since there is no hypothesis to support a direct effect of Performance Orientation (PER) on Switching Intention (BIS), this mediation is full.	Standardized indirect regression coefficient ⁴⁸⁵ , Cl	Non-triviality (assessed individually ⁴⁸⁶), CI not to include 0	Standardized indirect path coefficient ⁴⁸⁷ , CI, p-value	Non-triviality (assessed individually ⁴⁸⁸), CI not to include 0, significance (p < .05)	v ⁴⁸⁹	-
H4.15a	There is an indirect	Standardized	Non-triviality	Standardized	Non-triviality	v^{494}	-
	the second to the set of the	indiract	laccoccod	indiract nath	laccoccod		

⁴⁸¹ Calculated by PROCESS 2.0 by multiplying the two direct effects that make up the mediation.

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⁴⁸² Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).

⁴⁸³ Calculated by AMOS by multiplying the two direct effects that make up the mediation.

⁴⁸⁴ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).

⁴⁸⁵ Calculated by PROCESS 2.0 by multiplying the two direct effects that make up the mediation.

⁴⁸⁶ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).

⁴⁸⁷ Calculated by AMOS by multiplying the two direct effects that make up the mediation.

⁴⁸⁸ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).

⁴⁸⁹ However, directionality reversed due to H1.3.

Group Collectivism	regression	individually ⁴⁹¹),	coefficient ⁴⁹² ,	individually ⁴⁹³),	
(IGC) on Switching	coefficient ⁴⁹⁰ ,	CI not to	Cl, p-value	CI not to	
Intention (BIS),	CI	include 0		include 0,	
mediated by Service				significance	
Failure (SEF). In light				(p < .05)	
of the direct effect					
of In-Group					
Collectivism (IGC) on					
Switching Intention					
(BIS) in H4.16, this					
mediation is partial.					

Table A7.6.7: Overview of mediation effects

⁴⁹⁴ However: full, not partial, due to H4.14.

⁴⁹⁰ Calculated by PROCESS 2.0 by multiplying the two direct effects that make up the mediation.

⁴⁹¹ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).

⁴⁹² Calculated by AMOS by multiplying the two direct effects that make up the mediation.

⁴⁹³ Since mediation effects are always relatively low (they are computed as the product of two direct effects, which are both values lower than 1), only extremely low values are assessed discussed. If they are too low, they are considered irrelevant or trivial (e.g., page 176).

A8 Appendices Chapter 8

A8.1 Hypotheses for Future Research

Hypothesis	Methodological suggestions	Derived from
An individual's <i>switching intention</i> is reduced after <i>actual switching</i> is performed. <i>Actual switching</i> is dependent on <i>perceived behavioural control</i> . Therefore, <i>perceived behavioural control</i> has a fully mediated, indirect effect on <i>switching</i> <i>intentions</i> .	Longitudinal panel design	H1.3
Past behaviour influences behavioural intentions across different types of behaviour and in different contexts.	Meta-study of past behaviour in TPB applications	H2.1
Past frequency positively moderates the effect of perceived behavioural control on behavioural intention.	Cross-sectional study with N > 2000 and continuous moderation analysis in SEM	H2.5
The effect of <i>trust</i> on <i>perceived behavioural control</i> is moderated by the context in which the behaviour is conducted.	Cross-sectional study with different contexts as a variable, or meta-study	H3.2
The effect of <i>trust</i> on <i>switching intention</i> is moderated by regional differences.	Multinational, cross- sectional study	H3.3
<i>Perceived behavioural control</i> positively moderates (strengthens) the relation between <i>trust</i> and <i>switching intention</i> .	Cross-sectional study with N > 2000 and continuous moderation analysis in SEM	H3.11
The indirect effect (via TPB variables) of <i>performance orientation</i> on <i>behavioural intention</i> is moderated by the type of behaviour and the context in which the behaviour is performed.	Cross-sectional study with different contexts and behaviour types as variables, or meta-study	H4.1 – H4.3
The moderating effect of cultural dimensions on TPB main effects on <i>behavioural intention</i> is itself moderated by the context in which the behaviour is conducted (the importance of culture varies by context).	Cross-sectional study with different contexts as a variable or meta-study	H4.13 + H4.16
Subjective norms positively affect perceived behavioural control.	Experimental design, differentiating between "soft" normative switching barriers and "hard" switching barriers in the control group.	Post-hoc analysis
Attitude towards switching positively affects perceived behavioural control. Low perceived behavioural control negatively influences attitude	Two separate experimental studies, first measuring <i>attitudes</i> as a positive	Post-hoc analysis

towards switching.	anticipated outcome, second measuring the effect of reduced control on attitudes.	
There is a positive effect of <i>service failure</i> on <i>lack of trust</i> .	Experimental or longitudinal design using actual service failures instead of perceived failures.	Post-hoc analysis
Service failure negatively affects perceived behavioural control.	Experimental study focussing on actual service failure and measuring <i>perceived control</i> with <i>controllability</i> -items.	Post-hoc analysis
Subjective norms positively affect service failure.	Longitudinal study measuring <i>service failure</i> in the form of service assessments.	Post-hoc analysis
There is a positive effect of <i>attitude towards switching</i> on <i>service failure</i> .	Longitudinal study measuring <i>service failure</i> in the form of service assessments.	Post-hoc analysis
There is a positive effect of <i>past frequency</i> on <i>service failure</i> .	Longitudinal study measuring <i>service failure</i> in the form of service assessments.	Post-hoc analysis

Table A8.1: Hypotheses for future research

Statistics					
PAS-0	PAS-03				
N	Valid	1431			
IN	Missing	0			
Mean	1	2.01			
Median		2.00			
Mode		1			

Table A8.2: Descriptive statistics of PAS-03

PAS-03						
		Frequency	Percent	Valid	Cumulative	
				Percent	Percent	
	Never	596	41.6	41.6	41.6	
	Once	504	35.2	35.2	76.9	
	Twice	139	9.7	9.7	86.6	
Valid	3 times	137	9.6	9.6	96.2	
vallu	4 times	33	2.3	2.3	98.5	
	5 times	12	.8	.8	99.3	
	6 times or more	10	.7	.7	100.0	
	Total	1431	100.0	100.0		

Table A8.3:	Frequencies of PAS-03
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Figure A8.1: Histogram of PAS-03

A9 Appendices Chapter 9

A9.1 Summary of Models and Effect Types

Model	Description	Effect types included	Type of Model
FTM	Foundational theoretical model. All hypotheses and constructs that were adapted from the TPB Figure A5.1	All	Theoretical Models
РТМ	Proposed theoretical model. All hypotheses and constructs that were developed Figures A5.2 – A5.5	All	
Model 1	RA model with all variables from the FTM (BIS, ATT, SUN, PBC).	Direct	Statistical Models
Model 2	Model 1 + PAF	Direct	
Model 3	Model 2 + P&P factors	Direct	
Model 4	Model 3 + GLOBE (RA model with all constructs confirmed as valid and reliable by CFA)	Direct	
Model A	SEM model with all variables from the FTM (BIS, ATT, SUN, PBC). Figure A7.4.1	Direct and Mediator	
Model B	SEM model with all constructs confirmed as valid and reliable by CFA. Figure A7.4.2	Direct and Mediator	

¹ Moderator effects are not included in these models, since they are tested in individual tests in RA and SEM.

 Table A9.1:
 Summary of Models and Effect Types

Constructs	LV	ov	DV	IV	Ехо	Endo
ATT	х	-	х	х	-	Х
BIS	х	-	х	-	-	Х
FUT	х	-	-	Х	х	-
IGC	Х	-	-	Х	Х	-
INC	Х	-	-	Х	Х	-
PAE	х	-	-	х	х	-
PAF	_1	Х	-	х	Х	-
РВС	х	-	Х	х	-	Х
PER	Х	-	-	Х	Х	-
POD	Х	-	-	Х	Х	-
PRC	х	-	-	Х	Х	-
SEF	х	-	х	х	-	Х
SUN	х	-	Х	х	-	Х
TRU	х	-	-	х	Х	-
UNC	х	-	Х	Х	-	Х

A9.2 Typology of Constructs

¹ PAF was measured with only one item in the end. A LV is per definition measured by several items. Thus, PAF was not an LV anymore when measured with 1 item, but instead an OV.

Legend:

Survey items	=	Observed variables (OV)
Constructs	=	Latent variables (LV)
Dependent variable (DV)	≠	Latent variable (LV)

 Table A9.2:
 Typology of Constructs

A9.3 Summary of Model Assessments

Method	Assessment Criteria					Benchmark Value	Cut-off value
CFA		75 items	34 items	32 items			
	Model χ ²	10,391	633	554		N/A	N/A
	df of Model χ^2	2,595	492	429		N/A	N/A
	<i>p</i> -value of Model χ^2 (higher is better)	.000	.001	.001		N/A	.050
	RMSEA (lower is better)	.046	.054	.052		N/A	.080
	90% CI (RMSEA)	.045047	.052056	.050054		N/A	.080
	CFI (higher is better)	.766	.903	.916		N/A	.900
Method	Assessment Criteria	FTM			PTM	Benchmark Value	Cut-off value
Regression		Model 1	Model 2	Model 3	Model 4		
	$\overline{R^2}$.32	.33	.35	.35	.32	N/A
	p of F-value change	.000	.000	.000	.065	N/A	.050
SEM		Model A			Model B		
	Model χ^2	133			571	N/A	N/A
	df of Model χ^2	99			443	N/A	N/A
	<i>p</i> -value of Model χ^2 (higher is better)	.001			.001	.001	.050
	$\overline{R^2}$.32			.33	.32	N/A
	90% CI (<i>R</i> ²)	.2638			.2738	N/A	N/A
	RMSEA (lower is better)	.081			.055	.065	.080
	90% CI (RMSEA)	.076085			.053057	N/A	.080
	CFI (higher is better)	.902			.904	.990	.900

 Table A9.3:
 Summary of Model Assessments

Legend:

- ¹ Benchmarks derived from comparable studies. For RMSEA and CFI, only two studies were found, whereby the better of the two studies was used.
- ² Mean value of **1,000** Bollen-Stine-bootstrap samples, with a standard error of **1.8**. The *p*-value is the one associated with the Bollen-Stine-bootstrap.
- ³ *df* can be calculated as follows: The number of total variances and covariances in the final model is $\frac{p(p+1)}{2} = \frac{34(34+1)}{2} = 595$. There are 9 *LV* variances, 33 error variances (one for each item, except **PAS-03**, which is a single-item measure in the final model and therefore its error variance is constrained to 0), 25 regression weights (one for each item minus 9 reference variables, which are constrained and therefore not estimated) and 36 covariances (one between each *LV* and every other *LV*: 8+9/2), adding up to 9+33+25+36 = 103 parameters. *df* for this model add up to 595-103 = 492.
- ⁴ All probabilities reported in this table are two-tailed
- ⁵ Significant values of chi-square are expected with large sample sizes, therefore chi-square is not a good measure of fit.
- ⁶ Average value of TPB studies using the same measurement of *behavioural intentions* as in this study (Armitage & Conner, 2001).
- ⁷ F-value tests the null hypothesis that all regression coefficients are equal to zero. The *p*-value signifies the probability that this null hypothesis is true. In other words, it is tested whether the regression model is significantly better at predicting the *DV* than no model at all. If the *F*-value is significant, then the model is better than no model. The test for difference in *F*-values between two models works in the same way: its *p*-value signifies the probability that the two models are equally good at predicting the *DV*. If it is significant, the model are significantly different from each other in a hierarchical regression, meaning that the model with more variables is significantly better.
- ⁸ *F*-value based on comparison to a model with no relationship between constructs.
- ⁹ *F*-value based on comparison to Model 1.
- ¹⁰ *F*-value based on comparison to Model 2.
- ¹¹ *F*-value based on comparison to a model where all predictors, except GLOBE constructs, predict *switching intention* (Model 3). When compared to the FTM, the *F*-value change is significant at *p* < .001 (Appendix A7.5, Table A7.5.4).
- ¹² Significant values of chi-square are expected at large sample sizes, therefore chi-square is not a good measure of fit.
- ¹³ Average value of TPB studies using the same measurement of *behavioural intentions* as this study (Armitage & Conner, 2001).
- ¹⁴ Average value of TPB studies using the same measurement of *behavioural intentions* as this study (Armitage & Conner, 2001).
- ¹⁵ Bansal (1997).
- ¹⁶ C.-T. Liu et al. (2011). Switching mobile phone providers; Bansal CFI = 0.94

A10 Appendices Chapter 10

A10.1 GLOBE Society Clusters

Anglo •Australia •Canada •England •Ireland •New Zealand •South Africa (white) •United States	Latin Europe •France •Israel •Italy •Portugal •Spain •Switzerland (French-speaking)	Nordic Europe •Denmark •Finland •Sweden	Germanic Europe •Austria •Germany •Netherlands •Switzerland	Eastern Europe •Albania •Georgia •Greece •Hungary •Kazakhstan •Poland •Russia •Solvenia
Latin America •Argentina •Bolivia •Brazil •Colombia •Costa Rica •Ecuador •El Salvador •Guatemala •Mexico •Venezuela	Sub-Saharan Africa •Namibia •Nigeria •South Africa (black) •Zambia •Zimbabwe	Middle East •Egypt •Kuwait •Morocco •Qatar •Turkey	Southern Asia •India •Indonesia •Iran •Malaysia •Philippines •Thailand	Confucian Asia •China •Hong Kong •Japan •Singapore •South Korea •Taiwan

Figure A10.1: GLOBE society clusters, adapted from Javidan, House, Dorfman, Hanges, and Luque (2006)