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Uncovering the Houdini of Value Literature: Extending the Conceptualisation and Operationalisation of Perceived Value Scale Using Goal-Relevance

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Uncovering the Houdini of Value Literature:
Extending the Conceptualisation and Operationalisation of Perceived Value Scale Using Goal-Relevance

By

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I. Author’s Declaration

IYr wyf drwy hyn yn datgan mai canlyniad fy ymchwil fy hun yw’r thesis hwn, ac eithrio lle nodir yn wahanol. Caiff ffynonellau eraill eu cydnabod gan droednodiadau yn rhoi cyfeiriadau eglur. Nid yw sylwedd y gwaith hwn wedi cael ei dderbyn o’r blaen ar gyfer unrhyw radd, ac nid yw’n cael ei gyflwyno ar yr un pryd mewn ymgeisiaeth am unrhyw radd oni bai ei fod, fel y cytunwyd gan y Brifysgol, am gymwysterau deuol cymeradwy.

I hereby declare that this thesis is the results of my own investigations, except where otherwise stated. All other sources are acknowledged by bibliographic references. This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree unless, as agreed by the University, for approved dual awards.

II. Abstract

Keywords: perceived value, goal-relevance, loyalty, cognitive, affective, internal, external

For more than 50 years, investigating perceived value (PV) has been a continuing concern within academic consumer behaviour and marketing research, garnering the interest of scholars across the globe. Despite this continued appeal, PV literature is brimming with fragmented, contradictory and inconclusive views regarding value conceptualisation. Underscoring the call by scholars for a more holistic PV conceptualisation and operationalisation, this study develops the 2 (cognitive vs. affective) x 2 (internal vs. external) matrix model by employing the integrated approach and redefining and extending existing PV models. More precisely, this thesis consolidates the Groth (1995)'s EVP model, Sweeney and Soutar (2001)'s PERVAL scale, and Woodruff (1997)'s value hierarchy, into the proposed second-order PV model, thereby explicitly capturing Goal-relevance as the fifth dimension of PERVAL scale. Consequently, the main contribution of this study is to develop a more integrative, comprehensive and practical conceptualisation and its operationalisation, that can holistically capture the complexity of PV.

Furthermore, adhering to the dual-perspective of PV, this thesis also endeavours to incorporate the proposed second-order 2x2 model in the PV-loyalty chain. More specifically, there is, to the best of author's knowledge, no studies that have specifically explored the effects of the second-order (cognitive-affective) components of PV on duality of loyalty, making it difficult for managers to determine and identify specific PV components contributing the most for intended loyalty outcomes. Consequently, in revisiting the higher-order conceptualisation of PV and loyalty, this thesis adds to previous works by empirically investigating second-order PV conceptualisation and its distinctive influences on cognitive and affective loyalty.

This thesis follows the multi-method approach, wherein, Phase 1 or the exploratory stage, consists of two sequential studies (quant->qual), and Phase 2 or confirmatory stage, implements a quantitative online survey. The exploratory part of this study (phase 1) resulted in several interesting findings and culminated in a tentative affirmation of the proposed conceptualisation and operationalisation (2x2 matrix model). Supported by empirical

investigations of Phase 1, the conceptual model is developed for Phase 2 to investigate the effects of cognitive and affective PV on cognitive and affective loyalty. Based on the CFA model, all PV dimensions (including proposed goal-relevance dimension) were found to be loading significantly on the second order components (cognitive, affective, internal and external). The SEM analysis reveals that all dimensions (including goal-relevance) have a significant effect on loyalty. More specifically, the proposed direct sequential relationships of cognitive PV on cognitive loyalty and affective PV on affective loyalty were supported by empirical results. The results also show significant evidence of the direct positive influence of goal-relevance on cognitive loyalty. This implies that comparatively speaking; goal-relevance outperformed the dimensions of PV in influencing the cognitive loyalty. These findings are relevant for practitioners and scholars alike.

Originality

This thesis proposes and validates a new conceptualisation (2x2 matrix model) and operationalization (extended PERVAL scale) for PV assessments. The explicit addition of goal-relevance as the fifth dimension to extend PERVAL scale may increase the understanding of PV concept and provide better insights into the concept. Furthermore, by analysing the impact of PV on loyalty concerning cognitive-affective duality, this thesis provides a new direction for understanding loyalty and how goal-relevance directly affect cognitive loyalty evaluations.

III. Acknowledgements

Mere acknowledgments could not express the level of my gratitude towards number of people, without whom this thesis would never have become a reality. Still, I would like to take this honour of expressing my heartfelt expression of gratitude to some extraordinary people I have had the privilege to share this PhD journey.

First and foremost, I like to express my ardent appreciation toward my supervisors, Professor Edward Shiu and Dr. Sonya Hanna, who have, nurtured, guided and shaped my entire PhD experience. Edward has been a solid presence from Day 1, who helped gather the jig-saw puzzle pieces of my research, never even pausing for a moment, before starting over again, from scratch. Sonya had been my go-to person, who has spent hours, just listening to me with compassion and understanding, and going above and beyond to provide any assistance.

I will always be eternally grateful to Professor Andrew Edwards, whose aid and support has played a critical role in the completion of my thesis. I am also thankful to Professor Louise Hassan, for always inciting a fresh wave of inspiration, every single time I met her. My ardent appreciation to all the fellow PhD candidates and all staff in the Bangor Business School, who have provided me ample invaluable encouragement.

Finally, to my family. My husband, Gaurav Jain, who has kept me grounded through the hailstorm of my life. Thankyou my love, for being the ying to my yang. My son, Yuvaan, who has crept into my life unannounced and became my heart-stone. You have given me immense joy and equally immense distractions to my PhD. My parents, who have put their life on hold, just to be there if and when I needed. And to my siblings, Kush and Vanshika, my support system, stress-busters and comfort-zone rolled into one.

IV. Dedication

This thesis is dedicated to the three most important men in my life. My father, whose only wish is for his daughter to become a doctor. My husband, who has stood by me through hell and back. And my son, Yuvaan, who has become my strength, my lifeline.

V. Table of Content

VI. List of Figures

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VIII. List Of abbreviations

AMOS- Analysis of Moment Structure

AVE - Average Variance Extracted

CFA- Confirmatory Factor Analysis

CFI- Comparative Fit Index

EVP- Exclusive Value Premium

EVS- Experiential Value Scale

GFI- goodness-of-fit statistics

MTurk- Amazon's Mechanical Turk

PV- Perceived Value

SD- Standard Deviation

SEM- Structural Equation Modelling

RMSEA- Root Mean Square Error of Approximate

Chapter 1. Introduction

1.1. Chapter Overview

The thesis sets out to synthesise and empirically investigate PV concept using dual perspectives. The chapter introduces the motives for this thesis. Section 1.2 provides a brief synopsis of literature, establishing the importance of investigating perceived value. This thesis will use PV to denote the perceived value from this point onwards. Sub-section 1.2.1 explores the call for further research on understanding and assessing PV. Next section (1.2.2) delves into the intra-variable perspective and the shift of PV research towards an integrated approach, addressing the call for developing more holistic conceptualisation and operationalisation. Next sub-section (1.2.3) explores the inter-variable perspective of PV, concentrating on investigating the PV-loyalty chain. A brief overview of the contributions is presented, followed by the overarching aims and objectives of this thesis. Sub-section 1.5 begins with the overall methodology, followed by setting the context of the thesis. Finally, a brief overview of the structure of this thesis concludes the chapter.

1.2. Thesis Background

As a part of the 'That's iPhone' campaign by Apple (a series of 45-second advert aired on television) stress upon how iPhone can meet an individual's assorted needs through its varied features. The advert flips through a wide variety of visual cues (no dialogue) on several different scenarios that highlight how the iPhone will aid in accomplishing goals like recycling, encryption and privacy. For instance, the privacy-related ad includes visual cues like "keep out" signs, window locks and curtains, ending with a simple tagline:

"If privacy matters in your life, it should matter to the phone your life is on... Privacy. That's iPhone." (Gartenberg, 2019)

This advert demonstrates that showcasing how the product will help the customer to meet their end-goal, is still an integral part of marketing strategies to increase the favourable effects on marketing outcomes, such as loyalty. This ad campaign exhibits that marketers are increasingly focusing on the argument that customers assess the PV of a product "by thoughts about what products can do for them and a product's relevance to personal goals or objectives than by thoughts about physical product characteristics" (Graeff, 1997, p. 178).

Although, these end-goals have been implicitly (as a part of functional dimension) captured by existing PV conceptualisations, yet, it remains that the literature fails to explicitly incorporate goal-relevance in perceived value evaluations. This thesis is the first to address this gap by revisiting and extending the PV conceptualisation and operationalisation that explicitly, rather than implicitly, incorporates goal-relevance as separate PV dimension. Furthermore, this thesis empirically validates the proposed operationalisation and provide evidence that PV has a direct and positive effect on loyalty in terms of cognitive and affective components. Most notably, this research identifies that goal-relevance has a significantly positive and direct effect on driving cognitive loyalty.

1.2.1. The Research Problem and its Constituents

Within the discipline and practice of marketing, PV has been considered as the most important concept (Gallarza *et al.*, 2011; Holbrook, 1999; Khalifa, 2004; Klanac, 2013; Potra *et al.*, 2018), and has been consistently gaining significant attention from both, academicians and practitioners alike (Gallarza *et al.*, 2011; Payne and Holt, 2001) to predict consumer behaviour (Dodds *et al.*, 1991; Grewal *et al.*, 1998; Klanac, 2013; Ravald and Grönroos, 1996) and achieve sustainable competitive advantage (Klanac, 2013; Zauner *et al.*, 2015). "Indeed, the concept of value is fundamental to marketing theory and, therefore, to an understanding of consumer behaviour" (Gallarza *et al.*, 2011, p. 181). Furthermore, in its most recent definition, the Marketing Association (2013) places a strong emphasis on the role of "value" in marketing, stating that: "Marketing is the activity, set of institutions and processes for creating, communicating, delivering and exchanging offerings that have value for customers, clients, partners, and society at large."

This increased unanimous recognition of interest resulted in increased research on the development and measurement of PV (Zauner *et al.*, 2015). However, recent studies that have reviewed the PV literature (Boksberger and Melsen, 2011; Gallarza *et al.*, 2011; Zauner *et al.*, 2015) point to a shift from conceptual interest (since 2000 or last two decades) to that of methodological development (Gallarza *et al.*, 2017) leading to a significant increase in empirical papers. Nevertheless, Leroi-Werelds *et al.* (2014, p. 430) recently argued that "despite the importance of customer value, a considerable divergence of opinion exists on how to conceptualise and measure this construct adequately." This line of reasoning implies that there is much room for further research on PV creation (building a sound conceptualisation) and measurement (empirical validation of proposed conceptualisation).

Following this call for a more comprehensive understanding of PV, Cronin (2016, p. 261) postulated that "although much theory has been advanced relative to the measurement of value, the marketing literature lacks a conceptualisation and measures that reflect this theory". Thus, the central research problem addressed in this thesis is: How can PV be more comprehensively conceptualised and operationalised? To answer this central research problem, this thesis will develop a more holistic and comprehensive PV conceptualisation and operationalisation, thereby adding to the PV literature theoretically and empirically.

This thesis adheres to Gallarza and Gill-Saura (2006)'s categorisation of PV literature into (a) an intra-variable perspective that focuses on different dimensions of PV and their relationships; and, (b) an inter-variable perspective that concentrates on relationships between PV and other variables (Gallarza *et al.*, 2017). Gallarza and Gill-Saura (2006) argued that following this dual perspective for PV assessments "..appears to suggest a promising direction for research as a further step toward our enhanced understanding of value" (Gallarza *et al.*, 2011, p. 186). Additionally, recent review papers (Klanac, 2013; Zauner *et al.*, 2015) also highlighted the deficit of research that explores the dual perspectives of PV. This thesis tries to address this gap by focusing on dual perspectives for PV.

1.2.2. Intra-Variable Perspective

The intra-variable perspective focuses on addressing the research gap for developing more holistic and integrated PV conceptualisation and operationalisation (Cronin, 2016), by revisiting and extending existing models. To achieve this aim, a more integrated definition of PV, based on all three approaches (namely: benefit-cost ratio, means-end and experiential) was propositioned. Based on this integrated approach towards PV, Khalifa (2004), in his seminal paper, argued about the need to develop more such models for PV assessments. Later studies also supported this proposition (for instance, Gallarza and Gill-Saura, 2006), arguing that PV approaches, if "taken separately fail to provide a comprehensive understanding and could benefit from an integration of multiple perspectives" Klanac (2013, p. 29). Following this trend of a shift in PV literature from single approach conceptualisations (benefit-cost, means-end or experiential) towards a more integrated approach, Zauner *et al.* (2015) in their recent review paper, called for a more integrated approach towards PV. Following this line of reasoning, this thesis aims to develop a more comprehensive, integrated model.

Following Zauner *et al.* (2015)'s three-stage categorisation (uni-dimensional, multi-dimensional and higher-order abstraction) for intra-variable perspective, the dimensionality of existing models is discussed, leading to the identification of first research gap, in term of missing comprehensive, and practically sound, PV conceptualisation and its operationalisations. To address this gap, Exclusive Value Principle (EVP) model by Groth (1994) was chosen as the starting point for the proposed model. This model was then adapted for the current thesis's context and extended to reflect higher order components of PV. Comparing this proposed conceptualisation with Holbrook (1999)'s higher-order value typology, it was argued that the proposed conceptualisation can be represented by a 2x2 matrix, rather than two separate dimensions.

Moreover, a review of existing PV model (from extant literature) was performed, coalescing them into a 2x2 matrix conceptualisation. This led to the conclusion that PERVAL scale (Sweeney and Soutar, 2001) reflects the first order dimensions representing the proposed 2x2 matrix model and thus could be used to operationalise proposed conceptualisation. However, another research gap was discovered in terms of missing cognitive-internal dimension (RG2). To address this research gap, based on the integrated definition of PV, it was argued that since EVP model represents the benefit-cost and PERVAL scale represents an experiential approach, a means-end value hierarchy model by Woodruff (1997) should also be incorporated in the proposed conceptualisation. Reviewing the means-end approach, revealed the importance of goal-relevance and that it was insufficiently and implicitly recognised in the extant PV models. Thus, another proposition was presented in terms of explicitly capturing the role of goal-relevance as a PV dimension.

Furthermore, another research gap (RG4) was discovered in terms of unbalanced measurement items for the social dimension. Initial investigation propositioned the need to add two more cognitive measurement items in order to balance the scale (PERVAL scale consists of 3 affective and 1 cognitive item). Consequently, this thesis conceptualises the PV construct, by redefining and extending its scope, using an integrated approach for a more holistic and in-depth evaluation.

1.2.3. Inter-Variable Perspective

The inter-variable perspective of PV focuses on how PV contributes to one of its behavioural outcomes in the value-satisfaction-loyalty chain (for instance, Cronin *et al.*, 2000; Werelds *et*

al., 2014). To assess the aforementioned relationships, this thesis would use the proposed 2x2 matrix model for PV. In order to choose the behavioural outcome (to be assessed in relation to PV), this thesis focused on the call for researches from the extant literature. Academicians have argued that "further knowledge of the conceptual and methodological links among value and loyalty is still to come..." (Gallarza *et al.*, 2011, p. 187). Recently, Zauner *et al.* (2015, p. 9) argued that "...future research should concentrate on the link between customer value and loyalty intentions." Thus, following these call for research, this thesis would focus on loyalty as the behavioural outcome for PV assessments.

Customer loyalty is crucial for developing profitable business (Giovanis and Athanasopoulou, 2017; Han *et al.*, 2008; Lewis and Soureli, 2006) and "is a paramount marketing objective" (Han *et al.*, 2008, p. 35). Yet, there is a lack of consensus regarding loyalty conceptualisation and operationalisation (Gallarza and Gill-Saura, 2006). However, Worthington *et al.* (2009, p. 18) argued that a tridimensional model for loyalty "allows a more fine-grained approach that explains the variety of consumer loyalty behaviour and facilitates more effective interventions". Thus, this thesis follows this tridimensional model for loyalty. The literature review also reveals that the researchers have tried to identify the link between PV and behavioural loyalty; however, the attitudinal aspect of loyalty is relatively neglected (Back and Parks, 2003). Furthermore, behavioural loyalty is driven by attitudinal loyalty and is relevant mostly for low-involvement products. Since the context of the current thesis involves the emerging devices market (high-involvement product), this thesis would focus on attitudinal or cognitive-affective loyalty.

Moreover, the literature review reveals that PV is considered to have a positive influence on loyalty in both, academic research and marketing management, leading to better financial performance (Gallarza *et al.*, 2011; Khalifa, 2004). Nevertheless, to the best of author's knowledge, there has been no attempt made to date to illustrate an integrated framework which would capture second-order components (cognitive-affective) of PV and the attitudinal components of loyalty. Thus, this thesis will concentrate on exploring the relationships between cognitive-affective components of PV and loyalty. This thesis proposes that cognitive loyalty is influenced to a great extent by the consumer's evaluative response to an experience, and to be more specific, the perceived performance of an offering relative to its price (i.e. Cognitive PV dimensions). Correspondingly, consumers' affective PV dimensions (i.e., emotional and social), affect the attitudinal affective loyalty towards the product. In other words, the proposed model focused on the development of loyalty based on the PV derived from the cognitive and affective components. To develop and explore

proposed model, the following sub-section presents the aims and objectives of this thesis.

1.3. Statement of Contribution

The major contribution of this thesis is the proposed integrated 2 (cognitive vs affective) x 2 (internal vs external) matrix model. The proposed model is thoroughly supported by extant literature, and it provides additional insights into PV construct not already incorporated in previous conceptualisations. More precisely, the focus of PV literature has, historically, been on the cognitive-affective duality, and the internal-external duality has been somewhat overlooked. However, by accounting for the internal-external duality, this thesis evidences that the PV construct is far more nuanced, and therefore presents a contribution to the knowledge of PV concept in the form of a conceptually rigorous platform for future research endeavours.

Using the integrated approach, for a more holistic conceptual foundation for high-quality research, this 2x2 matrix model provides insights into higher order abstraction of PV, without introducing new terminology to PV literature. The resultant modified 2x2 matrix model substantiated from phase 1 provides empirical evidence for incorporating goal-relevance in the PERVAL scale. Thus, without any unnecessary additional conceptual extension, the significance of goal-relevance (as PV first-order dimension) was explored and established in the PV domain. Due to a sound conceptual foundation and rigorous empirical validation (phase 1) and cross-validation (phase 2), the empirical investigation offers greater validity of insights (as compared to existing models).

This PV conceptualisation, 2x 2 matrix model, identifies and empirically validates the 25-item extended PERVAL five-dimensional scale. Moreover, the empirical results from this thesis also delineate the proposed 2x2 matrix model to be practical. Subsequently, the resultant 2x2 matrix model could enable marketing practitioners to design more appropriate strategies by identifying and measuring PV components and dimensions. Specifically, by explicitly measuring goal-relevance as PV dimension, the practitioners could better streamline their strategies in accordance with the target customer.

Furthermore, given the enormous growth potential of the emerging devices market (Statista), Phase 2 checks the applicability of the proposed operationalisation in this context (not yet investigated in previous studies), and validated the extended PERVAL scale (proposed operationalisation) in the emerging device market, addressing the current lack of knowledge regarding the immediate need for robust PV scale. Thus, the current thesis will

contribute to emerging devices market literature in two ways: explores the proposed operationalisation holistically and validate the developed instrument (extended PERVAL scale) in emerging devices market which is little explored area. Furthermore, by exploring the link between cognitive-affective PV and attitudinal loyalty (cognitive-affective), this thesis accurately establishes the effect of goal-relevance on cognitive-affective loyalty, providing insights into loyalty drivers.

1.4. Aim and Objectives

There are three overarching aims of this thesis, namely (1) to develop and empirically validate more holistic, integrated PV conceptualisation and its operationalise using existing theoretical frameworks for understanding and analysing the concept of PV; (2) to explore the role of 'Goal-relevance' in extending the assessment of PV, with particular reference to whether and how to extend the PERVAL scale towards a more balanced scale; and, (3) to investigate the relationship between the PV and loyalty concerning cognitive and affective duality. The aims, objectives and research propositions presented in this thesis, are summarised in Table 1.

Research gaps	*Aims*	*Objectives*	*Study(s)*
RG1: There is a lack of comprehensive and practically sound PV conceptualisation and operationalisations, robustly derived from an integrated definition; that focuses on, both, the various PV components and their interrelations, to provide a more holistic PV model that captures the multifaceted conceptual richness of the construct. (Section 2.4.6, see p. 57)	1. To develop and empirically validate more holistic, integrated PV conceptualisation and its operationalise using existing theoretical framworks for understanding and analysing the concept of PV.	1. To redefine and extend existing EVP theoretical framework towards more balanced higher order abstraction.	Phase 1 (Exploratory phase: Study 1.1 and 1.2) and Phase 2 (Confirmatory Phase: Main Study, First and Second-order CFA analysis)
		2. To operationalise proposed 2x2 matrix model using integrated approach and incorporating PERVAL scale.	
		3. To test the convergent validity of the measurement items of PERVAL scale in terms of the cognitive/ affective - internal/ external components.	
		4. To add, recategorise and adjust those measurement items and/or dimensions as required to maximize the convergent validity.	
RG2: There seems to be a gap in terms of cognitive-internal dimension of PV. (Section 2.4.6, see p. 73)	2. To explore the role of 'Goal-relevance' in extending the assessment of perceived value, with particular reference to whether and how to extend the PERVAL scale towards a more balanced scale.	5. To develop appropriate constructs and measurement items relating to the, yet unnamed, the cognitive-internal dimension of PV.	
RG4: There is a need for extending the Social dimension of PERVAL scale by adding two more affective measurement items towards a more balanced dimension. (Section 3.3.1, see p. 102)		6. To empirically investigate whether the construct of 'Goal-relevance' can effectively capture the cognitive-internal dimension and hence be explicitly integrated within the PERVAL scale to achieve a more balanced scale.	
RG3: There is a need to explore how cognitive and affective PV has a dual effect on loyalty. (see sub-section 2.5.2, p. 95)	3. To empirically investigate the relationship between PV and loyalty, concerning cognitive and affective duality.	7. To investigate the effect of cognitive value dimensions on cognitive loyalty and affective value dimensions on affective loyalty.	Phase 2 (study 2.1, SEM analysis)

Table 1: Overarching aims and objectives of this thesis

1.5. Outline of research methodology

A two-phase multi-method research design (Figure 1, p. 26) was employed in order to address the research objectives. Phase 1 focuses on an exploratory analysis of the proposed 2x2 matrix model, using an expert survey (study 1.1) and card-sorting exercise (study 1.2), following the Explanatory Sequential Mixed Methods. The aim here was to investigate the nature of PV at the first-order and higher-order abstraction. For study 1.1, ten expert surveys were conducted via an online survey website (www.foureyes.com), asking the respondents to categorise the first-order PV dimension into either cognitive or affective and internal or external higher-order components. The findings of study 1.1 were cross-validated using study 1.2 (card-sorting exercise), giving evidence to support the proposed 2x2 matrix model for PV. The 12 sorting exercises (performed by six pairs of respondents) provides construct validity for the proposed higher-order conceptualisation of PV. The findings of these sorting exercise lead to addressing the research propositions and development of hypothesis for Phase 2.

Phase 2 (confirmatory analysis) involved a quantitative investigation (study 2.1) that builds upon the findings of Phase 1 and cross-validates the proposed operationalisation (extended PERVAL scale) in the emerging device market. Online survey questionnaire resulted in 182 usable surveys. The resultant data was then analysed to reconfirm the psychometric properties of the 2x2 matrix model via first and second-order Confirmatory Factor (CFA) Analysis(Intra-variable stage). Additionally, the relationships between cognitive-affective components of PV and loyalty will also be investigated using Structural Equation Modelling (SEM) analysis (Inter-variable stage).

1.5.1. Context of the Thesis:

Since "most proposals for multidimensional measurements of value have focused mainly on services rather than on goods" (Gallarza *et al.*, 2017, p. 725), this thesis addresses this gap by focusing on the consumer goods context for conceptualising and empirically testing the proposed model. In accordance with the aims and objectives of this thesis, the emerging devices category were considered a possible product category for empirical evaluations. Emerging devices include several high-involvement products like smartphones and tablets, that "facilitate the access and exploitation of online content, and support the rapidly increasing penetration of mobile phone subscriptions" (Giovanis and Athanasopoulou, 2017, p. 806). These emerging devices have gained more attention from global marketers due to

the consistent increase in competition. Yet, there is a lack of understanding regarding the customer's purchasing decision process (Munnukka and Järvi, 2012). Consequently, by selecting a product from the emerging devices product category, this thesis will aid the scholars and marketers to gain better insights into consumer behaviour.

Furthermore, the iPhone enjoys a large customer base and extensive penetration in USA population (44.3% market shares in the USA smartphones market in May 2018 (Statista)). By choosing smartphones for Phase 1 and iPhone for Phase 2 (from emerging devices category), this thesis will capitalise on its mass market relevance and could potentially offer insights regarding customer's value perceptions and their loyalty behaviour. Thus, smartphones (specifically Apple iPhone) were selected as the product for empirical investigation.

1.6. Structure of Thesis

This thesis is divided into six main chapters (Figure 1). Chapter 2 discusses the extant literature regarding PV for consumer goods (emerging device market- Apple smartphone) in B-to-C (business to consumer) context from the consumer's perspective. The literature review begins with outlining the origin and approaches towards PV, assimilating into integrated PV definition. This is followed by an in-depth discussion of the intra-variable and inter-variable perspective of PV. In both cases, various research gaps (RG1, RG2 and RG3) were identified and propositions (P1, P2 and P3) were presented, before developing the theoretical framework for proposed conceptualisation.

Chapter 3 presents the two conceptual frameworks developed in this thesis, based on the key theoretical models discussed in the literature review. Another research gap (RG4) is identified, and three more propositions (P4, P5 and P6) are presented underlining both perspectives. Chapter 4 summarises research paradigm, methodological approach, and research methods used for this thesis. This section is further divided into Phase 1 and 2, summarising the underpinning sampling procedure, questionnaire design, data collection and analysis methods. Chapter 5 presents the findings and initial discussion of both phases (exploratory and confirmatory). Finally, the Discussion chapter starts with summarising the review of the results in relation to research objectives, propositions and hypothesis testing. The next section then explores the potential contributions of this thesis. Theoretical, empirical and managerial implications arising from this thesis, are further discussed. The chapter concludes with the limitations and series of recommendations for future research.

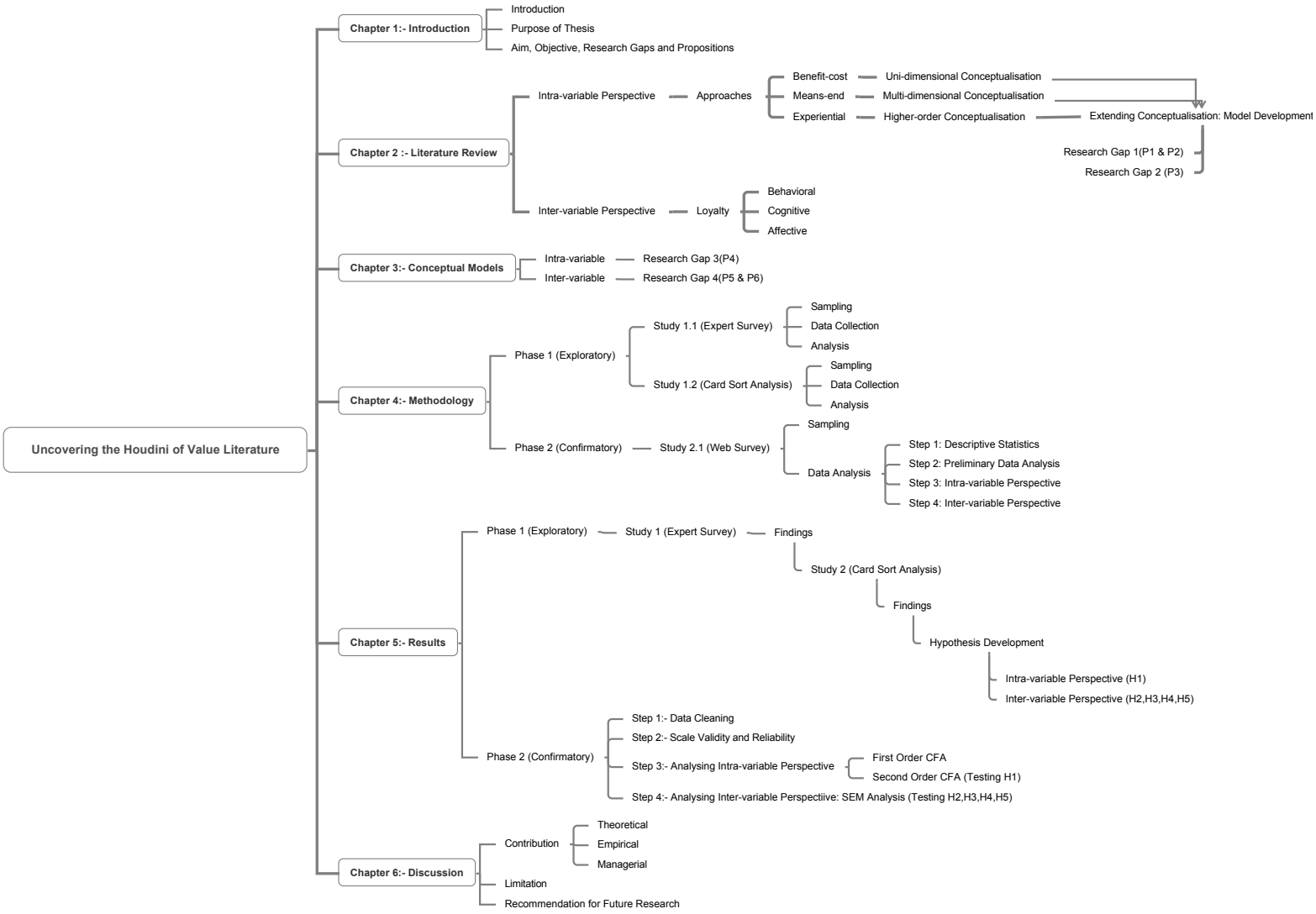


Figure 1: Structure of Thesis

Chapter 2. Literature Review

2.1. Chapter Overview

This chapter explores the theoretical background relating to the research objectives introduced in chapter 1. The chapter provides an in-depth review of PV literature, from the fields of marketing and consumer behaviour, in the context of business to consumer goods markets. Section 2.2 explores the origin of the concept of PV. Section 2.3 investigates how PV is measured in reference to Gallarza and Gill-Saura (2006)'s classification; intra-variable perspective (section 2.4) and inter-variable perspectives (section 2.5). Section 2.4 begins with exploring the three main approaches towards PV, resulting in the development of an integrated PV definition. Next, following Zauner *et al.* (2015) three stage categorisation of PV, Uni-dimensional conceptualisations were explored, with special attention towards Groth (1995)'s EVP model. Following this sub-section, multidimensional and higher-order conceptualisations were discussed with regards to presenting the relevant theories and models to create the framework for developing the proposed PV model.

Sub-section 2.4.6 presents the development of the proposed 2x2 matrix model and is further sub-divided into four sub-sections. Each sub-section summarises and documents relevant literature for integrating the three approaches towards PV and discuss the development of the proposed 2x2 matrix model for PV. Sub-section 2.4.7 presents a brief summation of proposed higher-order conceptualisation and operationalisation.

Section 2.5 investigates the inter-variable perspective and explores the relationship between PV and its behavioural outcomes, specifically loyalty. The tri-dimensional model for assessing loyalty is introduced, followed by a discussion on the measurement items used in this thesis. The relationship between PV and loyalty, as explored in the literature, is presented, followed by the conclusions (section 2.6) to build a foundation for the development of conceptual models for this study.

2.2. What is PV? Origin and Challenges

PV is identified as a central variable across the fields of consumer behaviour and marketing (Ahn *et al.*, 2019; Klanac, 2013; Lin *et al.*, 2005; Smith and Colgate, 2007; Zeithaml, 1988) from customer's point of view (Klanac, 2013; Statista; Woodall, 2003; Zeithaml, 1988). For

decades, PV has been investigated as a key factor in providing a sustainable competitive advantage (Ahn *et al.*, 2019; Boksberger and Melsen, 2011; Ravald and Grönroos, 1996; Smith and Colgate, 2007; Stępień, 2017) and predicting the profitability of any marketing effort (Boksberger and Melsen, 2011; Lin *et al.*, 2005; Ravald and Grönroos, 1996). Despite the plethora of research, there is need for a substantial research effort on PV and its effect on overall behavioural intentions (Gallarza *et al.*, 2019; Patterson and Spreng, 1997; Sánchez-Fernández *et al.*, 2009; Tasci, 2016; Vantrappen, 1992; Wiedmann *et al.*, 2007; Woodruff, 1997; Zeithaml, 1988). This conclusion has been further reinforced when 'Creating and Communicating Enduring Customer Value' was included as one of the major research priorities by the Marketing Science Institute (2014).

However, PV has always been considered as "chimaera of social sciences" (Gallarza *et al.*, 2019). Due to the centrality of the concept, interest in PV grew steadily in last two decades (Gallarza *et al.*, 2019), leading to PV conceptualisations from numerous academic fields and theoretical perspectives (Chang and Dibb, 2012; Boksberger and Melsen, 2011; Khalifa, 2004; Payne and Holt, 2001) including psychology (Boardley and Kavussanu, 2010; Zauner *et al.*, 2015), consumer behaviour (Babin *et al.*, 1994; Gallarza *et al.*, 2011), sociology (Emerson, 1976; Thibaut, 2017), economics (Bernoulli, 1954; Maleki *et al.*, 2014) and marketing research (Chang and Dibb, 2012; Kumar and Reinartz, 2016). This multi-disciplinary origin of PV has resulted in eighteen different terms, used interchangeably, to describe PV (Woodall, 2003).

Although most researchers are favouring the use of the term PV to describe this concept (Dodds *et al.*, 1991; Monroe, 1990; Patterson and Spreng, 1997; Sweeney and Soutar, 2001; Sánchez-Fernández and Iniesta-Bonillo, 2007; Walsh *et al.*, 2014; Zauner *et al.*, 2015), several noteworthy examples address this concept using terminology, such as "customer value" (Khalifa, 2004; Holbrook, 1999; Woodruff, 1997), "value" (De Ruyter *et al.*, 1997) and "value for money" (Sweeny *et al.*, 1999). Moreover, other terms such as "customer perceived value" (Gronroos, 1997), "perceived customer value" (Chen and Dubinsky, 2003) and "consumer value" (Holbrook, 1999) are scattered throughout the literature. Despite the differences identified between "consumer" and "customer value", in consumer research PV has been considered synonymous with "consumer value" (Gallarza and Gill-Saura, 2006). Moreover, since "consumer value refers to the possession-and-consumption of products and is more explicitly or precisely referred to as perceived value" (Gallarza *et al.*, 2011, p. 183), this thesis will use the term "perceived value (PV)". Table 2 presents the list of names (eighteen) that describe PV. This terminological heterogeneity has led to a lack of

consensus in definition and concept of PV (Boksberger and Melsen, 2011; Gallarza *et al.*, 2019). Even though conceptualising PV has become an "endless challenge" (Gallarza *et al.*, 2019, p. 256), there is a number of prominent approaches to define and measure PV in literature.

Number	***Terms used to describe PV***	***Author(s)/Year***
1	Acquisition Value	Grewal *et al.* (1998), Parasuraman and Grewal (2000)
2	Buyer Value	Slater and Narver (1994)
3	Consumer Surplus	Anderson and Narus (1995)
4	Consumer Value	Holbrook (1999), Sánchez-Fernández *et al.* (2009)
5	Consumption Value	Sheth *et al.* (1991)
6	Customer Perceived Value	Gronroos (1997), Yang and Peterson (2004)
7	Customer Value	Khalifa (2004), Woodruff (1997)
8	Net Customer Value	Butz and Goodstein (1996)
9	Perceived Customer Value	Chen and Dubinsky (2003)
10	Perceived Service Value	LeBlanc (1999)
11	Perceived Value	Dodds *et al.* (1991), Monroe (1990), Patterson and Spreng (1997), Sánchez-Fernández and Iniesta-Bonillo (2007), Sweeney and Soutar (2001),
12	Service Value	Bolton and Drew (1991)
13	Subjective Expected Value	Bolton (1998)
14	Transaction Value	Grewal *et al.* (1998), Parasuraman and Grewal (2000)
15	Value	De Ruyter *et al.* (1997)
16	Value for Customers	Treacy and Wiersema (2007)
17	Value for fhe Customer	Reichheld (1996), Woodall (2003)
18	Value for Money	Sweeney *et al.* (1999)

Table 2: Terms used (interchangeably) to describe PV (Adapted from: Woodall, 2003)

2.3. Measuring PV

The plethora of definitions (Table 3, p. 38) has resulted in the development of several models following each of the three approaches (namely, benefit-cost, means-end and experiential), owing to adopting a different conceptual foundation for building the empirical model (Holbrook, 1999; Sheth *et al.*, 1991; Sweeney and Soutar, 2001; Zeithaml, 1988). Gallarza and Gill-Saura (2006) have categorised all these models into two overarching areas, termed as: "intra-variable perspective" for the models that focus on the dimensionality of PV and "inter-variable perspective" for models that focuses on the value-satisfaction-loyalty chain. Furthermore, Gallarza *et al.* (2011, p. 186) proposed that in order to develop a better understanding of PV concept, future researchers should focus on "the dual perspective on value measurement – adopting both an 'intra-variable approach' (assessing value dimensions) and an 'inter-variable approach' (linking value dimensions to other related measures) – appears to suggest a promising direction for research." Following this call for research, later studies explored the dual-perspective, yet the existing research in both areas is inconclusive (Gallarza *et al.*, 2019). Thus, this thesis seeks to focus on the dual perspectives to contribute to this mixed stream of the intra-variable and inter-variable measurement of PV.

The intra-variable perspective encompasses positive and negative inputs of value itself, yet the empirical work is smaller and more heterogeneous (Gallarza *et al.*, 2017a). The intra-variable perspective portrays PV as a multi-dimensional construct encapsulating a number of dimensions (Boksberger and Melsen, 2011; Gallarza *et al.*, 2011; Lin *et al.*, 2005), yet Gallarza *et al.* (2016) acknowledged the lack of consensus regarding the number and nature of these dimensions. However, this thesis follows Zauner *et al.* (2015) to further subdivide the intra-variable perspective into three categories; uni-dimensional conceptualisations; the multi-dimensional conceptualisation; and the higher order conceptualisation. See subsections 2.4.3, 2.4.4 and 2.4.5 for further elaboration and a brief review of PV construct from the customer's point of view (Business-to-Consumer) in the marketing and service management literature. The objective of pursuing intra-variable perspective is to develop a more holistic conceptualisation and operationalisation for PV construct. See subsection 2.4.6 for further elaboration on conceptualisation and operationalisation of PV.

Conversely, the inter-variable perspective focuses on the relationships between PV and its behavioural outcomes like satisfaction and loyalty (Gallarza and Gill-Saura, 2006).

Although the PV-satisfaction link has been over researched (Gallarza *et al.*, 2019), there are still unexplored areas in PV-loyalty link. More specifically, there is, to the best of author's knowledge, no research that studies the relationships between cognitive-affective PV and cognitive-affective loyalty, in spite of their established dual nature. Thus, this thesis focuses on the duality of loyalty, in terms of cognitive-affective loyalty, which receives dual effects from PV.

Figure 2 illustrates this classification and outline the key theoretical models and empirical models used to develop the integrated PV conceptualisation in this thesis.

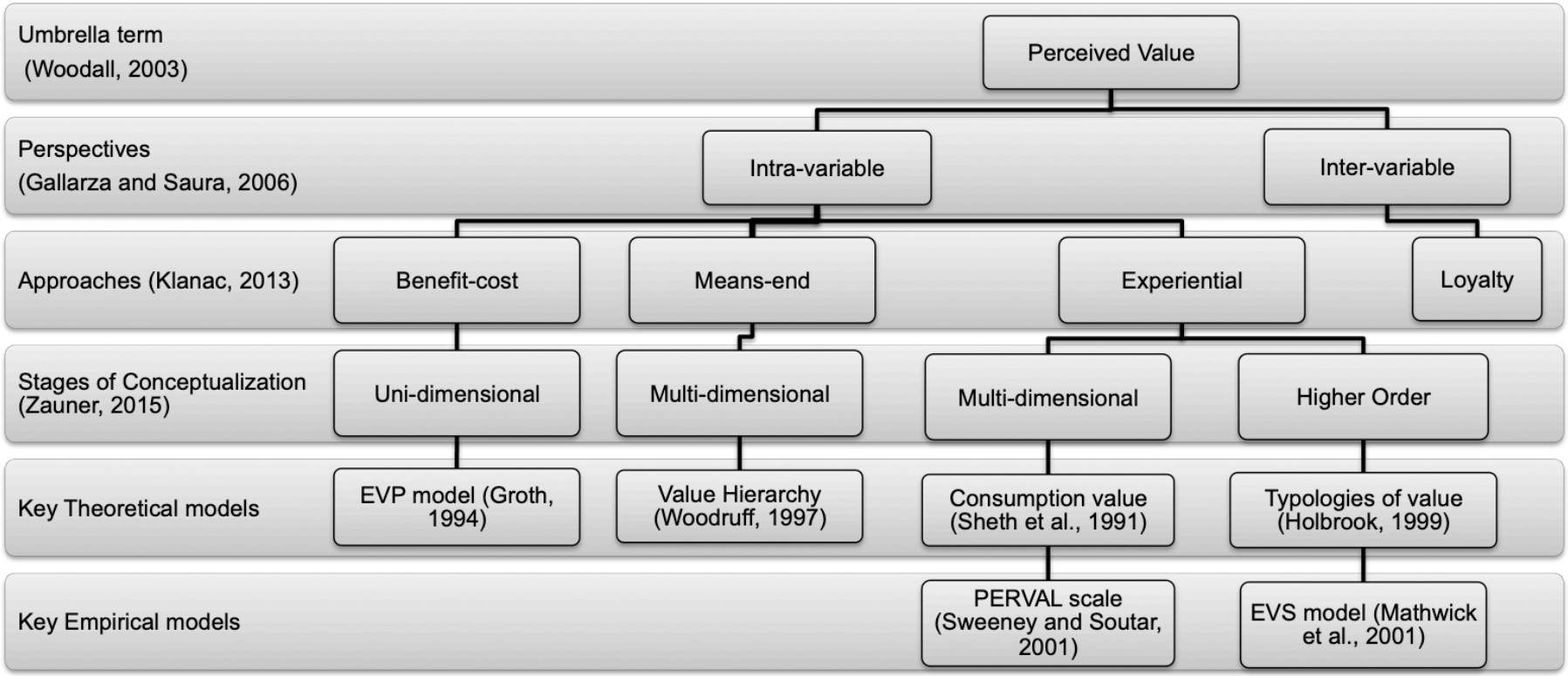


Figure 2: PV Classification and Key Theoretical Models

2.4. Intra-Variable Perspective

As evident in Figure 2, this section will focus on the existing theoretical and empirical models developed using various approaches. This section begins with documenting all three approaches of PV conceptualisation (sub-section 2.4.1). Next sub-section (2.4.2) presents a chronological development of PV definitions, resulting in the proposed integrated PV definition. Next three sub-sections discuss the relevant literature on uni-dimensional, multi-dimensional and higher order models. Subsequent sub-section 2.4.6 elaborates on how this thesis will redefine and extend existing conceptualisation and operationalisation, leading to an integrated 2x2 matrix model, which is an amalgamation of all three approaches towards PV.

2.4.1. Approaches towards PV

Klanac (2013) proposed that PV definitions and conceptualisations, in the field of management, marketing and service marketing literature, can be grouped into following three broad categories: benefit-cost (for example: Groth, 1994), means-end (for example: Woodruff, 1997) and experiential (for example: Holbrook, 1999). Most of the value conceptualisations (in any of these approaches), taken separately, have difficulty in capturing the concept of PV as each approach only focuses on a few components of PV and ignores others. Although, Khalifa (2004) concedes that there is an overlap in this categorisation that facilitates the development of integrative PV definitions and conceptualisations. By integrating multiple approaches, potentially, a more holistic and comprehensive definition can be produced. Each of these approaches is discussed in the following sub-sections.

2.4.1.1. Benefit-cost Approach

The Benefit-cost approach assesses both positive and negative aspects of customer perceptions as consumer evaluates, gains (benefits) and losses (sacrifices) when assessing any product or service (Klanac, 2013). Following Dodds *et al.* (1991), this approach argues that PV is conceptualised as a trade-off between perceived benefits (get component) and perceived sacrifices (give component) for acquiring the product (Day, 1990; Dodds *et al.*, 1991; Huber *et al.*, 2001; Klanac, 2013). The benefits can include tangible and intangible attributes of a product (Giovanis and Athanasopoulou, 2017; Khalifa, 2004; Lapierre, 2000), whereas the sacrifices can be either monetary or non-monetary costs (Zeithaml, 1988) (for example learning cost, emotional or psychic cost, search, time and cognitive or physical efforts (Huber *et al.*, 2001; Zeithaml, 1988) required to acquire and use a product along with social, and psychological risks (Huber *et al.*, 2001). Zeithaml (1988) further supported this

view and proposed a trade-off definition of PV (Khalifa, 2004; Klanac, 2013; Zauner *et al.*, 2015) where customer's perception of value represents a trade-off between benefits and sacrifices and the overall assessment of value follows the principles of benefit-cost analysis.

In order to improve PV, it is argued that increasing product benefits will increase PV. This is supported by Treacy and Wiersema (2007), who argues that perceived value is the net gain (benefits received minus the costs incurred by the customer) in acquiring a product or service. This line of reasoning implies that when benefits exceed the costs of acquiring and using a product, PV is improved, extended and expanded (Khalifa, 2004). Monroe (1990) has also proposed that consumers pay particular emphasis on the evaluation of quality or benefits they perceive in the product in relation to the sacrifice they perceive by paying the price. Similarly, Day (1990, p. 142) reaffirmed this conclusion by stating that "perceived customer value is the surplus between customer's perceived benefits and customer's perceived costs". Thus, for consumers, the benefits build value by improving the performance experience.

Conversely, the costs associated with a product, tangible and intangible, reduce PV (Treacy and Wiersema, 2007). Several researchers, for example, Huber *et al.* (2001) and Zeithaml (1988), pursued this cost side of the value equation and explained that total cost of a product is sum total of the money paid; cost and efforts of getting the product; and the costs and efforts required to use the product successfully. This line of reasoning also served as the foundation for several uni-dimensional models, (See sub-section 2.4.3, p. 41).

2.4.1.2. Means-end Approach: Achieving goals

The means-end approach serves as the foundation for the multi-dimensional conceptualisation to understanding PV (Leroi-Werelds *et al.*, 2014). The approach is based on the assumption that acquiring a product or service (means) is driven by the need to accomplish specific favourable ends (goals) (Gutman, 1982; Khalifa, 2004; Kuzmanovi *et al.*, 2011). Gutman (1982) means-end theory provided the theoretical background for this assumption, by postulating that consumer's view and evaluate products on three levels: attributes, consequences, and desired end-states. Here, the attributes are physical characteristics or features, consequences are experiences of a product use of (Gutman, 1982), and end-states are defined as goals that are "centrally held and enduring beliefs about right and wrong, good and bad that cut across situations and products or services" (Woodruff, 1997, p. 141).

Furthermore, the means-end approach explains why customers attach different

weights to various benefits and the negative consequences in evaluating alternative product/ services, overcoming the main drawback of previous approaches (Kuzmanović and Martić, 2012). Moreover, the dynamic nature of value assessments (Parasuraman, 1997) implies that the means-end approach overcomes another drawback of benefit-cost ratio models. However, this approach overlooks the sacrifices a customer is likely to bear in procuring the product/service, along with the evaluation of the trade-offs customers are expected to make between benefits and sacrifices. Moreover, the affective part of value assessment, including internal and external factors, is also overlooked.

2.4.1.3. Experiential Approach

Over time, the focus has shifted from seeking PV in product or service to seeking PV in experiences (Varshneya and Das, 2017, p. 48). This means that PV results from the consumer experiences during the consumption cycle (Giovanis and Athanasopoulou, 2017), rather than being embedded in the goods or services purchased (Holbrook, 1999). This approach is termed as the "experiential approach", based on the seminal idea of Holbrook (1999, p. 10) that "only a consumption experience can offer intrinsic value". The defining factor of this approach comes from the assumption that PV is an interactive, relativistic and preference experience that results from customer experience (Holbrook, 1999; Klanac, 2013; Zauner *et al.*, 2015) and not from the product or service offered (Holbrook, 1999). In other words, the experiential value is defined as "interactions involving either direct usage or distanced appreciation of goods and services" (Mathwick *et al.*, 2001, p. 41). Furthermore, Giovanis and Athanasopoulou (2017, p. 808) described the experiential approach as a combination of "cognitive and affective motives of consumption processes."

Klanac (2013) suggests that the experiential approach uses constructivist methods (like observations) to capture the experience. However, this leads to a significant drawback, the unfeasibility of comprehensive observations, owing to the restricted access to the customer (Klanac, 2013). Moreover, the experiential approach does overlook essential aspects of PV assessments, such as the importance of negative (costs or sacrifices) aspects of PV and the driving influence of product attributes towards PV evaluations (Klanac, 2013). Finally, the main focus of this approach tends to be on the higher levels of abstraction, which is difficult to operationalise (Klanac, 2013).

2.4.1.4. Summary

As discussed in this sub-section, PV literature can be sorted into the three approaches towards PV, namely, benefit-costs, means-end and experiential. Each approach has led to the development of numerous definitions of PV concept, in different fields of literature, that only focus on one or two aspects of the aforementioned approaches. This has led to a fragmented foundation for developing any conceptualisation for the concept of PV. However, since this thesis sets out to develop a more holistic, comprehensive conceptualisation, the imperative first step is to develop a more integrated definition of PV. To achieve this goal, following Khalifa (2004), this thesis aims to understand how and where the definitions, derived from different approaches, overlap, so as to develop a more integrative definition of PV. A chronological overview of existing PV definitions is presented in next sub-section.

2.4.2. Defining PV

Owing to the numerous dominant approaches, there are various different definitions of PV resulting from each approach. This thesis concentrates on the marketing field and will hence narrow its focus on the marketing definitions of value. Table 3 presents the chronological development for the term PV for all three dominant approaches as delineated from the literature.

Approach	***Author(s)/Year***	***Definition***
Benefit-cost	Anderson *et al.* (1993, p. 5)	Value in business markets is the perceived worth in monetary units of the set of economic, technical, service and social benefits received by a customer firm in exchange for the price paid for a product, taking into consideration the available suppliers' offerings and prices.
	Chang and Dibb (2012, p. 19)	Customer-perceived value is the customer's overall assessment of what is received and what is given (sacrifice) by a particular supplier compared with other competitors. Customers make this judgement by considering the combination of product quality, service quality, price affordability, and shopping experience. Value is a need-satisfying experience which yields customer satisfaction.
	Chen and Dubinsky (2003, p. 326)	A consumer's perception of the net benefits gained in exchange for the costs incurred in obtaining the desired benefits.
	Day (1990, p. 142)	Perceived customer value is the surplus between customer's perceived benefits and customer's perceived costs.
	Dodds *et al.* (1991, p. 308)	Perceived customer value is the proportion of the professed benefits in relation to perceived sacrifice.
	Flint *et al.* (2002, p. 171)	A value judgement is consumer's assessment of the value that has been created for them by a supplier given the trade-offs between all relevant benefits and sacrifices in a specific use situation.

Approach	*Author(s)/Year*	*Definition*
	Gale *et al.* (1994, p. 32)	Customer value is market perceived quality which is adjusted for the relative price of the products. It is your customer's opinion of your products/services as compared to that of your competitors.
	Monroe (1990, p. 46)	Buyer's perception of value represents a trade-off between the quality or benefits they perceive in the product relative to the sacrifice they perceive by paying the price.
	Ravald and Grönroos (1996, p. 23)	Trade-off between benefits and sacrifices perceived by customers in a seller's offering (Episode and relationship value).
	Spreng *et al.* (1993, p. 51)	A consumer's anticipation about the outcome of purchasing a product or service based on future benefits and sacrifices prices.
	Woodall (2003, p. 21)	Any demand-side, personal perception of advantage arising out of a customer's association with an organisation's offering, and can occur as reduction in sacrifice; presence of benefit (perceived as either attributes or outcomes); the resultant of any weighted combination of sacrifice and benefit (determined and expressed either rationally or intuitively); or an aggregation, over time, of any or all of these.
	Zeithaml (1988, p. 14)	Consumer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given.
Means-end	Woodruff (1997, p. 142)	A customer's perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer's goal and purposes in use situations.
Experiential	Bruce (2013, p. 57)	The extent to which an individual perceives the outcomes arising from customer experience as positive and personally beneficial.
	Holbrook (1994, p.27)	Customer value is considered a relativistic (personal, situational and comparative) preference which basically characterises a customer's experience when interacting with an object. For instance, any goods, services, people, things or events.
	Holbrook (1986)	An outcome of consumption experiences in general .
	Sheth *et al.* (1991, p. 160)	Consumer choice is a function of multiple consumption values. These are functional, social, emotional, epistemic and conditional.

Table 3: Chronological Development of PV Definitions.

The definitions in Table 3, although not exhaustive, represent the subjective and complex nature of PV. While these authors provided useful insight into what PV means, the precise definition of the concept revolves around the approach used by the researcher to conceptualise PV. Zeithaml (1988, p. 14) has presented one of the most cited definitions of PV: "consumer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given". Building upon this definition, Monroe (1990) proposed that PV can be defined as the buyer's (consumer's) perception of the trade-off between the quality or benefits of a product and the sacrifice or the price of the transaction. Thus, using the benefit-cost approach, PV is considered as the overall assessment of what the consumer perceives as the outcome of the trade-off. Although there have been constant modifications to the trade-off definition owing to globalisation and exponential growth in consumer expectations, the basic idea remains constant, and PV is still considered to be a trade-off between sacrifice and potential benefits (Chen and Dubinsky, 2003; El-Manstrly, 2016).

Using the means-end approach, Woodruff (1997) consolidated diverse definitions of PV. According to this definition (See Table 3, p. 38), PV is the worth of product perceived by the customer after accounting all sacrifices they may be required to make, in order to procure that product in specific use situation. Here, sacrifices can be divided into monetary and non-monetary sacrifices (Cronin *et al.*, 2000; Dodds *et al.*, 1991). Thus, Woodruff (1997)'s definition broadens the trade-off definition and incorporates multiple contexts (such as purchase and use phases), multiple cognitive tasks (such as motivations and perceptions), and multiple levels of assessment criteria (such as Means-end Hierarchy, Parasuraman, 1997). However, even though (Woodruff, 1997) definition of PV is conceptually broad involving the relevance of PV at different levels of abstraction, contexts and tasks, Parasuraman (1997) noted the problems relating to its operationalisation. However, in the later studies, a more holistic experiential view of PV gained interest, leading to the development of various definitions. Holbrook (1994, p.27) proposed that "Customer value is considered a relativistic (personal, situational and comparative) preference which basically characterises a customer’s experience when interacting with an object". This definition revolves around the experience of the overall consumption being beneficial, capturing the experiential approach.

In conclusion, the extant PV literature is replete with PV definitions that focus on only one approach. However, several review papers (Khalifa, 2004; Klanac, 2013; Potra *et al.*, 2018) found that by grounding the PV definition in only one approach (either benefit-cost,

means-end or experiential), while do not undermine the usefulness of definition, it is still not adequate to address the current competitive marketplace stresses. Therefore, there is a need for more research on developing a more holistic definition of PV.

2.4.2.1. Towards an Integrated definition of PV

Considering the three PV approaches, it can also be stated that all these definitions focus on certain components of PV, while ignoring others, resulting in mutually overlapping groups. For instance, Zeithaml (1988) used means-end approach to present several propositions for PV conceptualisation; however, the definition she proposed, as the foundation, delineates PV as a function of get and give component (see Table 3, p. 38). Similarly, other studies also proposed definitions that were built upon the overlapping components that incorporated the benefit-cost and the means-end approach. For instance, Flint *et al.* (2002) proposed that PV is the consumer's assessment of the trade-off between all relevant benefits and sacrifices in a specific use situation. This definition combines the trade-off aspect of PV in terms of the relevance of benefits (Zeithaml, 1988) with the relevance of specific context (Woodruff, 1997). Later studies focused on incorporating the means-end and experiential approaches to develop a more comprehensive definition. The definition propositioned by Bruce (2013) elucidates such combination. By concentrating on the 'outcomes' of the PV evaluations, Bruce (2013) emphasised the goal-driven nature of PV, incorporating the means-end approach. And, the inclusion of the phrase 'the extent to which' within the PV definition, allowed for both value creation (enhancing) or value destruction and serves to address the criticism of overemphasising value enhancement in previous conceptualisations (Sánchez-Fernández and Iniesta-Bonillo, 2007). Thus, the definition of PV purported by (Bruce, 2013) combine's factors from means-end and experiential approaches, overcoming inherent limitations of each individual approach.

Building upon this, it can be argued that such overlaps serve as the basis for developing a more comprehensive and balanced PV definition, and thereby more integrated conceptualisations (Khalifa, 2004). Following this line of reasoning, this thesis also endeavours to develop an integrated definition, by incorporating different elements of existing definitions, to serve as the foundation for proposed conceptualisation. Drawing from all the three approaches (benefit-cost, mean-ends and experiential), it can be summarised that PV is a goal-driven concept (means-end), resulting from a consumption experience (experiential) of a transaction (benefits and costs). So, considering the well-cited definitions in each category, Holbrook (1986) (experiential), Zeithaml (1988) (benefit-cost) and Woodruff (1997)

(means-end), the following definition of PV is proposed by incorporating aspects of each of the three individual approaches.

> *"PV is an outcome of consumption experience resulting from overall assessment of the trade-off as personally relevant."*

Here, the focus on 'consumption experience' (Holbrook, 1986) reflects the experiential approach. This experience is derived from the 'assessment of trade-off', which reflects the benefit-cost approach. Additionally, the emphasis on 'outcome' as 'personally relevant' incorporates the goal-driven aspect captured by means-end approach. Hence, the proposed definition combines the strengths of all three approaches while overcoming their limitations, consequently offering enhanced conceptual rigour.

2.4.3. Uni-dimentional conceptualisation

At this stage, PV is based on the 'trade-off' or 'intuitive calculation' of the benefits and sacrifices associated with a product (Zauner *et al.*, 2015). In other words, the uni-dimensional approach portrays the PV as "a single overall concept that can be measured by a self-reported item (or set of items) that evaluates the consumer's perception of value" (Sánchez-Fernández and Iniesta-Bonillo, 2007, p. 430). Thus, the simplest way to explain the uni-directional approach is to consider value as a direct function of give versus get components, as illustrated in Figure 3. In Figure 3, the 'get components' are the benefits associated with any product or services, whereas the 'give component' typically comprises of the sacrifices (costs) required to achieve the product or service. Thus, this uni-dimensional approach portrays weighing up of benefit and sacrifices as the main feature of PV (Lin *et al.*, 2005; Monroe, 1990; Ravald and Grönroos, 1996; Zauner *et al.*, 2015) and is comparable to the benefit-cost ratio approach.

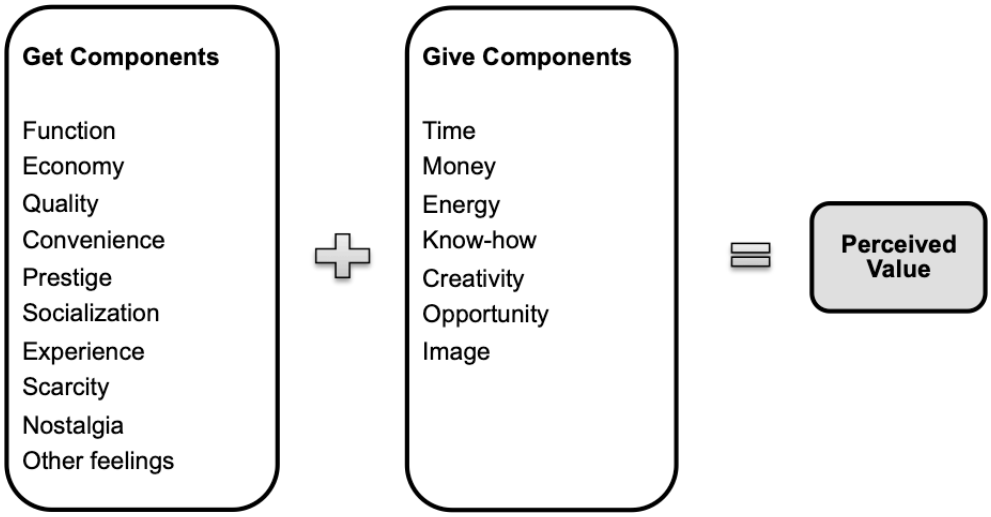


Figure 3: The Uni-dimensional Models (Adapted from: Babin and James, 2010)

2.4.3.1. Groth's EVP model

Groth (1994) proposed an exclusive value premium (EVP) model (Figure 4) for value assessments in luxury products. EVP benefits can be either utility derived from the functional aspects of the product (cognitive) or utility derived from the feelings or affective states that a product generates. So in order to maximise the benefits, it is imperative to understand both the utility and the affective or psychic need fulfilment dimensions. The psychic factor in EVP is defined as a factor that "originate in dimensions of the mind often characterised as 'feelings', 'emotions', 'human needs'. Some might argue they stem from the ego, superego, and perhaps even the id." (Groth, 1994, p. 9). This generates a premium above pure utilitarian value. Thus, it can be stated that premium pricing or exclusive value domain is tethered to the psychic factors, which are further sub-divided into 'Internal' and 'External' factors. Internal factors, whether perceived or real, represent forces of importance independent of the opinions, influences, approval and suggestions of others. External factors, whether or real, represent forces of importance because of opinions, influences, approval, suggestions, interaction, and interpersonal relations of or with others (Groth, 1994, p. 10). Thus, the benefits offered by the product can be improved by expanding not just the utilitarian (cognitive) evaluation, but also by capitalising on the affective part of a product value dimensions. Later studies followed this line of reasoning and researchers endorsed the fact that benefit-cost analysis is performed using both, cognitive and affective, dimensions of PV assessments (Sweeney and Soutar, 2001) and focusing on these benefits helps in increasing PV.

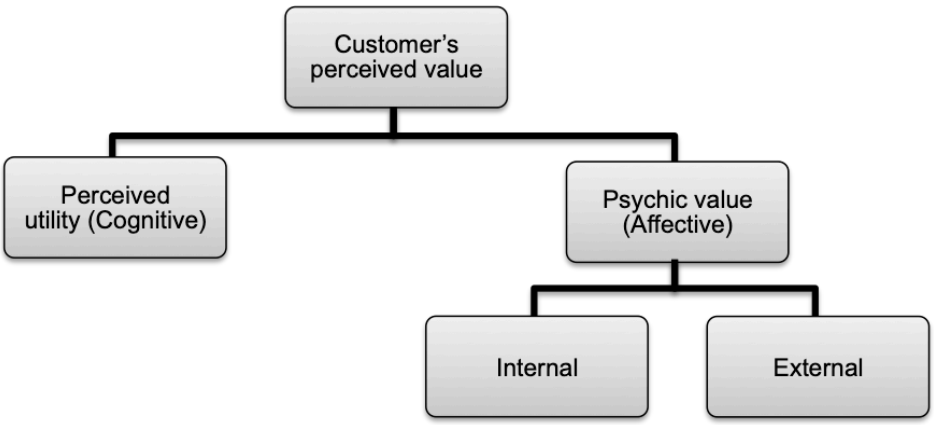


Figure 4: EVP Model (Adapted from: Groth, 1995)

2.4.3.2. Other models following Uni-Dimensional view

Several other studies adopted the uni-dimensional conceptualisation, either directly by developing a new model or indirectly by linking to existing models (Zauner *et al.*, 2015). Dodds *et al.* (1991) developed a uni-dimensional model for the measurement of PV (value for money scale). They followed the Benefit-cost approach and concentrated on the quality-price relationship to define PV as the "cognitive trade-off between perceptions of quality and sacrifice" (Dodds *et al.*, 1991, p. 308). Later studies validated the model by adopting the measurement scale and empirically replicating it in various contexts (see: (Chen and Dubinsky, 2003; Leroi-Werelds *et al.*, 2014; Sweeny *et al.*, 1999). Other models that measure PV using a uni-dimensional approach are presented in Table 4.

These measurement constructs involves single item or multi-item trade-off scales to measure PV and can adequately explain the value assessment in much simpler terms. Although these benefit-cost models may seem sufficient, PV dimensions are much more complex than mere trade-off of benefit and sacrifices. This is further discussed in next sub-section.

Author(s)/Year	***uni-dimensional PV measurement constructs***
Babin *et al.* (1994)	Utilitarian and Hedonic
Chen and Dubinsky (2003)	perceived risk and the valence of experience
Cronin *et al.* (2000)	Quality and Sacrifice
Dodds *et al.* (1991)	Quality-price
Grewal *et al.* (1998)	Acquition and Transaction value
Sweeny *et al.* (1999)	Value for money

Table 4: Summary of previous Uni-dimensional Measurement Models for PV

2.4.3.3. Discussion

Overall, although these benefit-cost or uni-dimensional models enjoy the advantages of simplicity in operationalisation and implementation, this conceptualisation faces several shortcomings. Firstly, traditional uni-dimensional conceptualisation fails to account for the heterogeneity of PV between consumers and usage situations (Sweeney and Soutar, 2001), and thus the measurement, as a whole, becomes less valid (Woodruff and Gardial, 1996). Secondly, this line of reasoning established uni-dimensional conceptualisation for measuring PV, in terms of cognitive processes of assessment and cognitive responses to consumption, thus leaving affective responses aside (Duman and Mattila, 2005). Finally, there is no clear specification of the relevant benefit or sacrifices in consumption process (Cronin, 2016). Thus, this uni-dimensional approach is only comparable to the more complex multi-dimensional models because the benefit and cost components act as umbrella dimensions for further elements (Oliver, 1999). Consequently, even though, the uni-dimensional approach for PV conceptualisation is effective and easy to implement (Lin *et al.*, 2005), it is unable to elucidate the complexity (potential multidimensionality) of the value concept (Lin *et al.*, 2005; Sweeney and Soutar, 2001; Sánchez-Fernández and Iniesta-Bonillo, 2007; Zauner *et al.*, 2015). Researchers have criticised the uni-dimensional conceptualisation for being too simplistic (Sánchez-Fernández *et al.*, 2009), arcane and narrow (Zauner *et al.*, 2015) and thus unable to aid in the course of creating or improving PV (Petrick, 2004).

Consequently, multi-dimensional conceptualisations which combine the trade-off approach with broader perspectives and define PV as consisting of several dimensions, have been put forth by scholars to counter the critique arguing for the complexity of the concept and its cross-field origin (Bolton and Drew, 1991; Gallarza *et al.*, 2017a; Gallarza and Gill-Saura, 2006; Lin *et al.*, 2005; Parasuraman, 1997; Petrick, 2002; Sánchez *et al.*, 2006; Sánchez-Fernández and Iniesta-Bonillo, 2007; Zeithaml, 1988).

2.4.4. Multi-Dimensional Conceptualisation

Zauner *et al.* (2015, p. 6) stated that "recently the multi-dimensional proposition has gained wider acceptance". Moreover, Klanac (2013) supported this assumption by stating that recent studies consider PV as a multifaceted concept that needs a more holistic model which reflects the conceptual richness of PV. Consequently, the extant literature review encompasses empirical models with a varying number of PV dimensions ranging from 2 to 13 (Zauner *et al.*, 2015).

The multi-dimensional conceptualisation of PV involves the means-end and experiential approaches, emphasising the existence of more than one type of value simultaneously (Zauner *et al.*, 2015). This assumption is supported by several researchers (Holbrook, 1999; Sheth *et al.*, 1991) that captured the relevance of affective or emotional and cognitive or economic dimensions (Zauner *et al.*, 2015). In other words, the multi-dimensional conceptualisation captures a more holistic or multifaceted perception of PV (Zauner *et al.*, 2015). Petrick (2002) proposed multi-dimensional conceptualisation with five dimensions (quality, emotional response, monetary price, behavioural price and reputation) for the service industry. (Zauner *et al.*, 2015) recommended this conceptualisation as a valuable tool for testing PV, in the tourism industry. In the context of the service industry, a further conceptualisation was proposed by De Ruyter *et al.* (1997) with three main dimensions: emotional or intrinsic value, functional or extrinsic value and logical value.

2.4.4.1. Customer Value Hierarchy Theory

Woodruff (1997) argued that the means-end approach provides deeper insights into understanding the needs of the customer, as compared to the benefit-cost approach. Following this line of reasoning, Woodruff (1997, p. 147) affirmed that the "customer value hierarchy suggests that customers conceive of desired value in a means-end way" and thus proposed the 'Value Hierarchy Model' (Figure 5), anchored in the means-end theory, with three levels of evaluation.

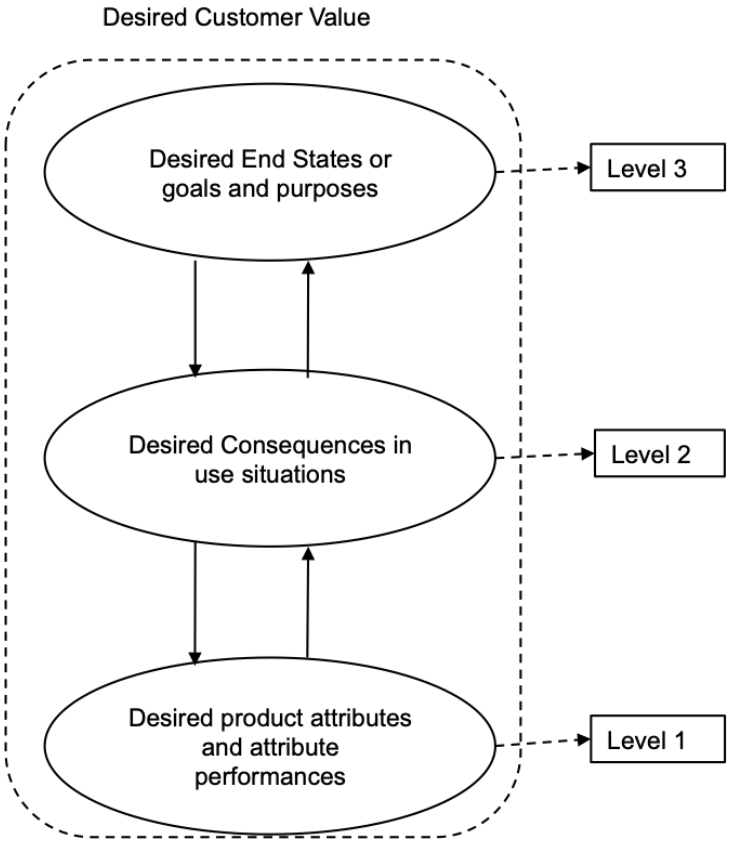


Figure 5: Value Hierarchy Model (Woodruff, 1997, p. 147)

Here, Level 1, termed as 'attribute', represents the physical or psychological elements of the product (Woodruff, 1997). Level 2 of the hierarchy is termed as 'consequences', that encompasses the experience of consumption. Costumers tend to prefer the attributes that aid in achieving certain consequences. Consequences may be desirable (positive) or undesirable (negative). While positive consequences are associated with benefits sought by the consumer, the negative consequences are linked to perceived risk, sacrifices or costs that consumer seeks to avoid (Gutman, 1982; Woodruff, 1997). These consequences are favoured based on their ability to achieve the desired end-goal, Level 3 of the value hierarchy. However, a customer can perceive value both upwards and downwards in the hierarchy (Figure 3). When the value is perceived upwards, customer evaluates the product attributes based on their ability to facilitate the desired consequences and the end-goals sought. Conversely, when the value is perceived downwards, the customer uses the desired end-goal to attach importance to the consequences and product attributes (Woodruff, 1997).

Besides, Parasuraman (1997) argued that the value-hierarchy model proposed by Woodruff (1997) effectively captures the dynamic and context-dependent nature of value.

Parasuraman (1997) also noted that capturing the broader conceptualisation of value by establishing the relevance of PV assessments at various levels of abstractions, context and tasks, Woodruff (1997)'s model involves problems in effective operationalisation. Moreover, the identification of goals becomes the precursor to operationalising and applying the value hierarchy (Parasuraman, 1997). To elicit goals, techniques such as laddering can be implemented; however, the resulting goals may only represent the most abstract goals. These abstract goals may potentially be the driver, yet lower-level goals may still exert more influence on the PV evaluations. Thus, Woodruff (1997)'s conceptualisation may still give flawed conclusions.

2.4.4.2. Consumption Value Theory

Sheth *et al.* (1991) provide a multidimensional conceptualisation of PV and propose PV as multifaceted, capturing beyond purely cognitive, economic or functional aspects (Zauner *et al.*, 2015). Their model not only explains but also help in predicting consumption behaviour in terms of why consumers choose to buy a particular product or brand. As such Sheth *et al.* (1991) have provided the foundation for a deeper understanding of the value concept and a theoretical base for developing many measurement scales for PV assessments (Sánchez-Fernández and Iniesta-Bonillo, 2007). The proposed "theory of consumption value" by Sheth et al. (1991), explicitly capture five types of consumer value, namely,

- *Emotional value:* benefits derived from feelings generated by the product,
- *Social value:* benefits of the product that enhance social self-worth,
- *Functional value:* benefits derived from the performance of the product,
- *Epistemic value:* benefits provided by novelty, curiosity and knowledge of the product,
- *Conditional value:* benefits acquired due to the set of circumstances that impact choices.

These values are considered independent of each other and contribute to PV evaluations to varying degrees, depending upon the consumption situation (Zauner *et al.*, 2015). The Emotional, Social and Functional values have been incorporated as dimensions in the PERVAL scale (see next sub-section, 2.4.4.3). The emotional value is associated with the feeling generated by the product in the form of aesthetic pleasure, play or fun (Holbrook, 1999; Sheth *et al.*, 1991). These feelings can be positive (such as joy) or negative (such as jealousy, fear). The Epistemic value would favour the need for change, but as soon as the

need is satiated, the consumption pattern is retained to its original form. The Conditional value here points towards the impact of context on choice behaviour and perception of value. This claim of context dependency is supported by Holbrook (1999), explaining that conditional value depends on the context in which value assessment occurs. Both conditional value and epistemic value are found to enhance the PV in a certain situation (Pura, 2005). Yet later studies (for example, Sweeney and Soutar, 2001; Sánchez *et al.*, 2006), developing measurement scale based on findings of Sheth et al. (1991), usually overlooked the conditional and epistemic value, as they may not be considered as the same order construct as the emotional, social or functional value (Sweeney and Soutar, 2001). Sánchez *et al.* (2006, p. 394) proposed their "GLOVAL" scale, with 24 items, grouped into six dimensions: (1) functional value of the travel agency (installations); (2) functional value of the contact personnel of the travel agency (professionalism); (3) functional value of the tourism package purchased (quality); (4) functional value of price; (5) emotional value; and (6) social value. This scale was tested and validated in a Spanish tourism context, demonstrating its predictive validity by checking the influence of experiential value dimensions on satisfaction and loyalty.

2.4.4.3. PERVAL scale

Sweeney and Soutar (2001) developed the "PERVAL" scale to measure PV, which includes the utilitarian and hedonic aspects of consumption and assert that epistemic and conditional value may not be considered as the same order construct as social, emotional, and functional value. They suggeste that further testing should be undertaken regarding the role of epistemic and conditional values in overall PV assessments.

The initial scale, proposed by Sweeney and Soutar (2001), consisted of 85 items; 34 functional items (17 for perceived quality and 15 for price); 29 social items, and 22 emotional items. After following a rigorous procedure of preparation and refinement of the initial scale, the final PERVAL scale was reduced to 19 items, divided into four major dimensions. These four inter-related dimensions are:

- *Emotional value:* the utility derived from the feelings or affective states that a product generates.
- *Social value*: the utility derived from the product's ability to enhance social self-concept.
- *Functional value (price/value for money):* the utility derived from the product due to

the reduction of its perceived short term and longer term costs.

- *Functional value (performance/quality):* the utility derived from the perceived quality and expected the performance of the product.

(Sweeney and Soutar, 2001, p. 211)

The validity of this PERVAL scale was tested using consumer durable goods at brand level across Australia, UK and the US to explore the relationships between value dimensions and willingness to buy, willingness to recommend and problem expectation. Empirical findings indicated that all four value dimensions significantly and positively influenced the three outcome variables. Furthermore, the results of this study verified the claim that multidimensional conceptualisation of PV tends to capture the complexity of PV to a greater extent as compared to the uni-dimensional conceptualisation, thus enhancing the understanding of PV concept for predicting consumer behaviour. Further, these results strongly suggest that consumers assess their products based on all four dimensions, consequently supporting the universal applicability (as it is or by slight modifications) of these dimensions in major English speaking countries.

The PERVAL scale has been one of the most discussed scales in PV literature and thus can be considered as an essential step towards capturing PV by comprehensively analysing the value perceptions of end users (Sánchez *et al.*, 2006), making its dimensions the most suited benchmarks to analyse other scales. The scale has also been successfully applied in several different contexts (see: Pura, 2005; Walsh *et al.*, 2014). However, previous studies argued that PERVAL scale, although empirically sound, reliable and a valid measurement tool, it still needs to be broadened as it dominantly captures the post-purchase evaluation of a product and not the perceived overall value of a purchase or experience (Boksberger and Melsen, 2011; Gallarza and Gill-Saura, 2006; Sánchez *et al.*, 2006). Thus, in the context of this thesis, the PERVAL scale is considered as the instrument for PV assessments to fulfill the identified research gap. The applicability of PERVAL scale for operationalising proposed conceptualisation is further explored in subsection 2.4.6.3.

2.4.5. Higher Order Conceptualisation

Although, multidimensional models seems to be a more valid approach towards capturing a more holistic view of PV (Zauner *et al.*, 2015), there remains a lack of consensus regarding the dimensionality and conceptual foundations of such models (Gallarza *et al.*, 2011; Zauner *et al.*, 2015). It is also noted that, although PV is dependent on lower-level physical attributes of the product or service, it can be integrated with higher levels of abstraction (like goals). Consequently, PV has been propositioned as a higher level or order abstraction. Zauner *et al.* (2015) explained the formulation of this higher order conceptualisation based on the assumption purported by Lin *et al.* (2005), that PV can be, either reflected in or composed of, the lower level dimensions.

In regards to model taxonomy, Lin *et al.* (2005) argued that taxonomy discussion could be reduced to formative (causal) and reflective (effect) indicators. Jarvis *et al.* (2003) recommend four decisions rules (see Table 5) to categorise a construct as either formative or reflective. The formative model (aggregate composite model) is characterised by having the causality direction from item to construct (Jarvis *et al.*, 2003); and treats all variances (common, group and specific variances) as true variances, and the measurement error is considered at the construct level (Lin *et al.*, 2005). Diagrammatic representations of such a model showcase the arrows emitting from the multi-dimensions to the construct (Lin *et al.*, 2005). Conversely, the reflective or latent factor models focus only on the common variances, representing the indicators as manifestations or effects of construct (Lin *et al.*, 2005). In such models, the arrows emit from the construct to its multi-dimension, considering measurement errors at item level (Lin *et al.*, 2005).

Decision Criterion	***Formative Model (Aggregate composite model)***	***Reflective Model (Latent factor model)***
1. Direction of causality from construct to measure implied by the conceptual definition.	Direction of causality is from items to construct (error term at the construct level).	Direction of causality is from construct to items. Changes in the indicator should not cause changes in the construct (error term at the item level).

Decision Criterion	*Formative Model (Aggregate composite model)*	*Reflective Model (Latent factor model)*
2. Interchangeability of the indicators/items. Should the indicators have the same or similar content?	Indicators need not be interchangeable. Dropping an indicator may alter the conceptual domain of the construct	Indicators should be interchangeable. Dropping an indicator should not alter the conceptual domain of the construct.
3. Covariation among the indicators.	Not necessary for indicators to covary with each other.	Indicators are expected to covary with each other.
4. Nomological net of the construct indicators.	Nomological net for the indicators may differ. Indicators are not required to have the same antecedents and consequences.	Nomological net for the indicators should not differ. Indicators are required to have the same antecedents and consequences.

Table 5: Decision Rules for Formative and Reflective Models (Adapted from: Lin *et al.*, 2005, p. 203)

The first order dimensions (for example, social and emotional), as observed by Zauner *et al.* (2015), are inter-related and reflected by their respective measurement items. This implies that the direction of causality (see Table 5), for the first-order, should be considered as going from PV concept to the measurement items (Zauner *et al.*, 2015). Consequently, these first-order dimensions have been considered as exclusively reflective in the extant literature (Zauner *et al.*, 2015).

Zauner *et al.* (2015) further elaborated on the need to explore whether the higher order conceptualisation is formative or reflective (Baxter, 2009). Although, "both formative and reflective specifications for relationship value are valid" (Baxter, 2009, p. 1377), Zauner *et al.* (2015) assert that the higher order conceptualisations tend to be formative in comparatively more studies. For example, Sheth *et al.* (1991, p. 163) proposed a formative conceptualisation of consumption values, as they asserted that the value dimensions are independent, "relating additively and contributing incrementally to choice". However, Sweeney and Soutar (2001) argued that PERVAL scale dimensions are interrelated and dependent, making it a reflective model. Further, Ruiz-Molina and Gil-Saura (2008) argued

that formative conceptualisations of PV have several limitations, such as difficulty in generalising results due to the context-specific nature of a study. Thus, it is imperative to construe model taxonomy, in addition to the dimensionality and the level of abstraction, focusing on the research context and applicability of the conceptualisation of the construct (Zauner *et al.*, 2015). Based on the context and applicability of this thesis, the proposed 2x2 matrix model can be considered as reflective. This assumption is further supported by Gallarza *et al.* (2019), who validated reflective higher order abstraction for the Holbrook (1994)'s typology.

2.4.5.1. Typology of Value Theory

Holbrook's research from the early 1980s propositioned PV as having, utilitarian and hedonic experiences, during a consumption process to broaden the scope of consumer behaviour using microeconomic approaches (Gallarza and Gill-Saura, 2006). In developing this line of enquiry, Holbrook (in 1994 and 1999) proposed a seminal conceptualisation in the form of a 'value typology', that combines both, cognitive and affective aspects of PV, in three dichotomies; Extrinsic vs. intrinsic (utilitarian vs. Hedonic), Self-Oriented vs. Other-Oriented (considering the social dimension of the consumption), and Active vs. Reactive (depending upon the active or passive control of consumer on the product). Table 6 outlines Holbrook's dichotomies and their eight categories; efficiency, excellence (quality), play, aesthetics, esteem, status, ethics and spirituality.

		Extrinsic	**Intrinsic**
Self-oriented	**Active**	Efficiency (Convenience)	Play (Fun)
	Reactive	Excellence (Quality)	Aesthetics (Beauty)
Other-oriented	**Active**	Status (Success)	Ethics (Morality)
	Reactive	Esteem (Reputation)	Spirituality (Faith)

Table 6: Typology of Value (Adapted from: Holbrook, 1999, p. 12)

The eight types of value in this typology (Holbrook, 1999) can be described as:

- *Efficiency:* the ratio of output to input is termed as efficiency or convenience. It captures the value generated by active use of the product or means to achieve a self-oriented goal or end.
- *Excellence:* the utilitarian value generated by the product attributes to accomplish some goals or functions is termed as quality or excellence. It captures the reactive appreciation of a product's or experience's potential ability to serve an extrinsic means to self-oriented goals or end.
- *Status:* the value achieved by active manipulation of own consumption in a manner that attains a positive response from another person.
- *Esteem:* the reactive deliberation of a person's possessions as a means to generate a positive reputation in other people's opinion is termed as esteem.
- *Play:* the value generated by an active self-oriented consumption pursued or enjoyed as an end in itself is termed as fun or play.

- *Aesthetics:* the intrinsic value created by a fundamentally reactive appreciation of consumption experience as a self-oriented end in itself.
- *Ethics:* the active and other-oriented value of an ethical act aimed at favouring others as an end in itself is termed as ethics or morality.
- *Spirituality:* the devotional experience which is intrinsically motivated and pursued as an end to itself is termed as spirituality or faith.

Thus, according to Holbrook (1999, p. 5), the PV should be considered as "interactive relativistic preference experience", emphasising the importance of the experiential approach of PV (Gallarza and Gill-Saura, 2006; Varshneya and Das, 2017).

Holbrook's typology has been considered as "the most comprehensive approach to the value construct because it captures more potential sources of value than do other conceptualisations" (Sánchez-Fernández *et al.*, 2009, p. 97). However, despite its conceptual relevance, incorporation of a broad range of dimensions and its detailed, structured formulation, Holbrook's typology has been criticised (Boksberger and Melsen, 2011). Gallarza and Gill-Saura (2006, p. 441) referred to Holbrook's typology "...as an axiology (i.e. as a judgement of goodness/badness), which is a philosophical approach, less common in marketing literature..." One of its main drawbacks, is the difficulty of its operationalisation, both theoretically (Gallarza *et al.*, 2016; Oliver, 1999) and empirically (Gallarza and Gill-Saura, 2006; Leroi-Werelds *et al.*, 2014; Sánchez-Fernández *et al.*, 2009). Further limitation is the non-consideration of negative aspects of PV construct (Gallarza and Gill-Saura, 2006; Oliver, 1999).

2.4.5.2. Operationalisations based on Typology of Value

In last two decades, several studies operationalised (Holbrook, 1986) typology (see Gallarza *et al.*, 2017b, 2019; Gallarza and Gil-Saura, 2008; Gallarza and Gill-Saura, 2006; Mathwick *et al.*, 2001; Mathwicka *et al.*, 2002). However, many researchers, such as Mathwick *et al.* (2001), choose to focus on only the self-orientated dichotomy, stating that comparatively, self-oriented is more representative of consumer behaviour (Gallarza and Gill-Saura, 2006). Mathwick *et al.* (2001) considered experiential value as the value derived from retail experience using direct or indirect usage of goods or services. They proposed Experiential Value Scale (EVS), based on Holbrook (1996), but focusing solely on the self-orientated dichotomy. Thus, in EVS model, PV is divided into four quadrants, Intrinsic/Extrinsic sources of value on one axis and Active/Reactive value on the other (Mathwick *et al.*, 2001, p. 41).

This lead to the development of a 19 item scale comprising of four experiential value dimensions; playfulness, aesthetics, service excellence, Customer Return On Investment (CROI). This scale was validated in catalogue and internet shopping context, using the US population as sampling pool, by testing the influence of experiential value dimensions on patronage intent. Here, the patronage intent was defined as "customer's willingness to consider, recommend or purchase from a retailer in the future" (Mathwick *et al.*, 2001, p. 48). The results indicated that although experiential value has a strong positive influence on patronage intent, there are still differences between catalogue shopping and internet shopping experiences. The catalogue shopping patronage intent was significantly influenced by the aesthetic value and CROI. However, only CROI emerged as a significant predictor of patronage intent in an internet shopping context.

Similarly, based on Holbrook's typology, Sánchez-Fernández *et al.* (2009), developed a multidimensional higher-order scale for assessing PV concept in the service context. They also focused on self-oriented dichotomy, however chose to add social dimension from other-oriented to capture more comprehensive PV assessments. The predictive validity of the proposed scale was tested in the context of vegetarian restaurants in Spain. They proposed a 24 item scale divided into six dimensions; efficiency, play, quality, aesthetics, social value and altruistic value. The empirical results provided support for the multidimensionality of PV and confirmed the cognitive-affective paradigm, emphasising the role of affective components.

In the context of tourism and hospitality, Gallarza and Gill-Saura (2006) empirically verified the multi-dimensionality of PV (intra-variable perspective) and the PV-satisfaction-loyalty chain (inter-variable perspective) by developing a higher order scale based on the self-oriented dichotomy of Holbrook (1999) typology. They proposed a 46 item scale divided into 8 dimensions; efficiency, play, quality, aesthetics, social, monetary cost, perceived risk and time and effort. This scale was validated using a convenience sample of 274 Spanish university students. However, in their next study, Gallarza and Gil-Saura (2008) only used 5 dimensions, namely efficiency, quality, play, aesthetics and social. They verified this scale using a convenience sample of 229 university students. Their findings reconfirmed the multi-dimensionality of PV and provided empirical evidence to support the personal, comparative and situational nature of PV.

Furthermore, Gallarza *et al.* (2016) empirically tested the intrinsic component of Holbrook (1999) typology, by developing a 14 item scale divided into 4 dimensions. They tested the psychometric properties of this scale using the convenience sample of 585 hotel

guests from Italy. In regards to intra-variable perspective, they verified the multidimensionality of PV. They also found that entertainment, aesthetics and spirituality (relaxation) have a strong link with overall PV, however, the path of ethics to overall PV was not confirmed. Nonetheless, they confirmed the PV-satisfaction-loyalty chain with strong linkage.

Later studies by Gallarza et al. (2019; 2017) operationalised all 8 dimensions of Holbrook (1999)'s typology, in the context of hospitality and tourism. Gallarza et al. (2017) provided empirical support for 2x2x2 typology or higher-order abstraction of PV. Gallarza et al. (2019) further supported the higher-order abstraction and provided support for reflective second-order constructs following Zauner et al. (2015). They further found that reactive dimensions have a more prominent impact on overall PV than the active dimensions. In regards to the inter-variable perspective, they provided empirical support for value chain and added to previous works by investigating the cognitive-affective paradigm of PV and satisfaction.

2.4.6. Extending Value Conceptualisation: Model Development

Based on discussion of the aforementioned literature (section 2.1 and 2.2), there exists multiple definitions of 'value' within the literature leading to various conceptualisations of PV (uni-dimensional, multi-dimensional and higher-order abstraction) for intra-variable perspective (based on Zauner *et al.*, 2015). Analogously, PV conceptualisations have been grouped into the three approaches; benefit-cost, means-end and experiential (Khalifa, 2004; Klanac, 2013; Potra *et al.*, 2018). Table 7 regroups the PV conceptualisations (including key models for this thesis) in accordance with the three approaches and provides an overview of the strengths and weaknesses associated with each individual approach.

One conclusion that can be drawn from the Table 7 is that PV conceptualisations using any of these approaches, taken separately, have difficulty in capturing the concept holistically. Each definition (for any approach) only focuses on few components of PV concept rather than the richness and complexity of the construct (Klanac, 2013, p. 29). Consequently, existing models fail to provide a comprehensive conceptualisation and operationalisation for PV evaluations, based on the lack of any integrated PV definition. Thus, there exists a research gap, as stated below.

RG1: There is a lack of comprehensive and practically sound PV conceptualisation and operationalisations, robustly derived from an integrated definition; that focuses on, both, the various PV components and their interrelations, to provide a more holistic PV model that captures the multifaceted conceptual richness of the construct.

Approach	*PV Conceptualisation*	*Model and Author(s)*	*Focus*	*Strength*	*Weakness*
Benefit-cost (BC)	Uni-dimensional	Exclusive Value Principle (EVP) (Groth, 1994)	Trade-off of benefit and costs.	Equal emphasis on Both, positive and negative aspects of PV.	Oversimplification, by not identifying the levels of abstraction. Treat customers as rational or logical beings.
Means-end (ME)	Multi-Dimensional	Value Hierarchy (Woodruff, 1997)	Three levels of value: attribute, consequences and end-state.	Relevance of influence attributes have on end goals. Provide insight in to value-hierarchy.	Overlooking the negative aspects of consequences. Treat customer as rational or logical being.
Experiential	Multi-Dimensional	Consumption Values (Sheth *et al.*, 1991); PERVAL Scale (Sweeney and Soutar, 2001)	Ventures beyond customer perceptions and looks into what customers do and how they feel (Klanac, 2013).	Accounts for the affective aspects of PV as well.	Overlooking the trade-off between positive and negative aspects of PV. Difficult to operationalise.
	Higher-order	Typology of Value (Holbrook, 1999)			

Table 7: Review of Three Approaches for PV and associated Key Theoretical and Empirical models (Source: Adapted from Werelds et al. (2014) and Khalifa (2004))

In order to address RG1 the proposed reconceptualisation is based on integrating all three approaches, as they are equally relevant but they provide different perspectives. To represent a holistic perspective, As presented in Figure 2 (p. 32), this thesis focuses on developing a higher-order, multi-dimensional PV model, based on the proposed integrated definition (see Section 2.2, p. 41). This is achieved by following four main steps (Figure 6).

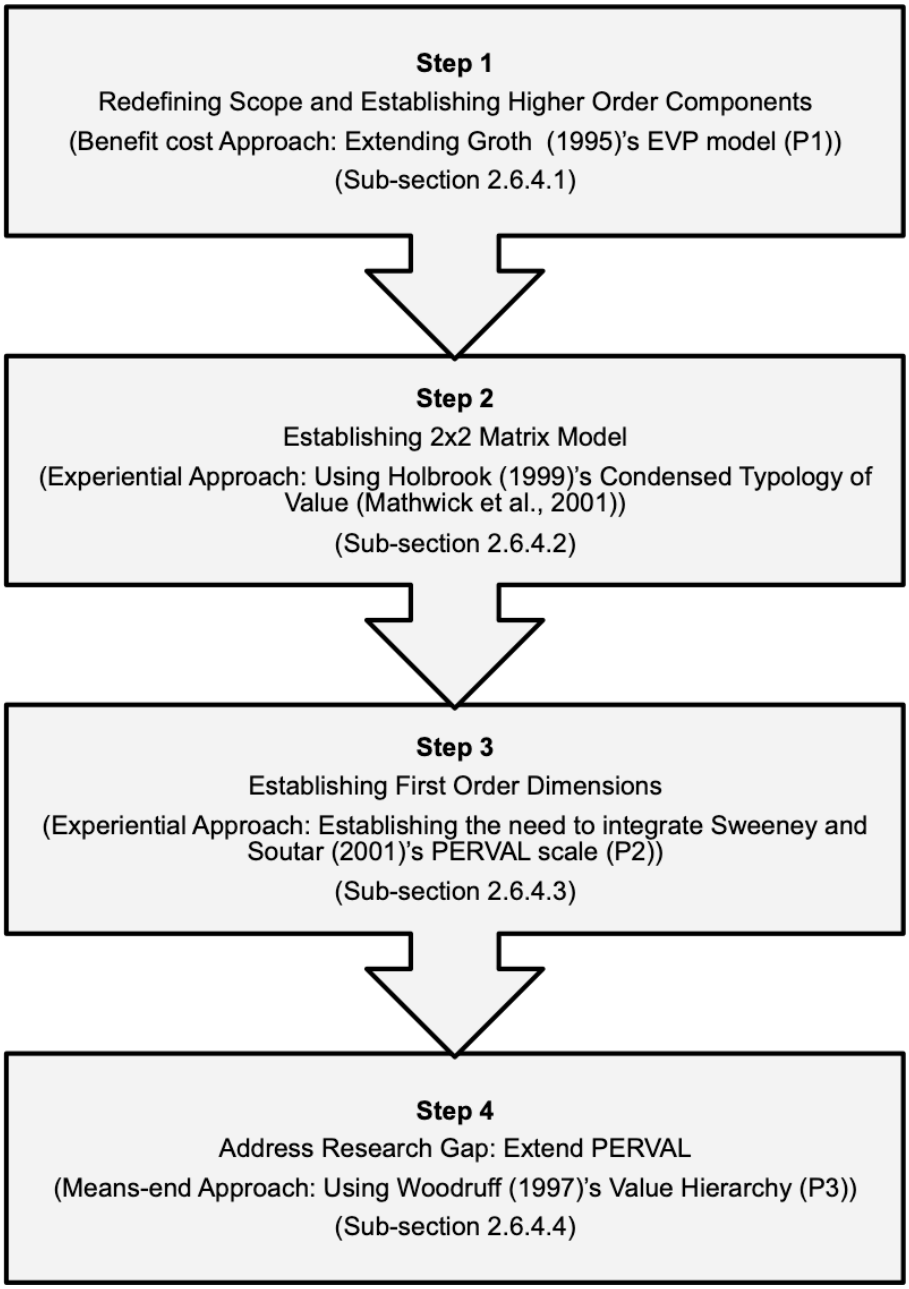


Figure 6: Developing an Integrated Conceptualisation and Operationalisation.

Step 1 focuses on redefining the scope of PV using the benefits-cost approach and exploring the inter-relationships of cognitive-affective, internal-external components of the EVP model to develop the higher-order conceptualisation to address the first research gap

(RG1). Step 2 concentrates on the experiential approach of PV to support the higher order components and establish the 2 (cognitive vs. affective) x 2 (internal vs. external) matrix model for developing the proposed conceptual model. Step 3 explores the previous value conceptualisations in reference to 2x2 matrix and thus deriving the first-order dimensions of the proposed model (see section 2.4.6.3 for a discussion on PV dimensions and measurement items). Finally, Step 4 aims to fill the identified research gap (RG2) by using the remaining approach (means-end) for assessing the cognitive-internal first-order dimension and concentrates on the influence of goals on PV assessments. Additionally, goal-relevance is proposed to extend the existing PV operationalisation. The integration of all three approaches and key models (EVP, Value Hierarchy, PERVAL scale) is detailed in forthcoming sections where the proposed 2x2 matrix conceptualisation and operationalisation of PV construct is also elaborated on.

2.4.6.1. The Higher Order Components: Extending Groth's EVP model

The main aim of developing any new conceptualisation is to provide additional insights into the observed constructs while being thoroughly supported by past conceptualisations. To achieve this objective, "a trend in relation to the level of abstraction has materialised" (Zauner *et al.*, 2015, p. 7). Although, "the choice to use higher order models depends on the researcher, because both types of models (higher and first-order) represent the same hypothetical construct" (Martín-Ruiz *et al.*, 2008, p. 1287); it remains imperative to select the level of abstraction based on the research interest, that is, whether the research's focus is on assessing PV as a concept or PV's relationship with its behavioural outcomes (Zauner *et al.*, 2015). For the purposes of this thesis, the focal point revolves around three guiding questions: "what is PV"; "how to measure PV" and "how does PV affect its behavioural outcomes". Thus, this thesis follows Zauner *et al.* (2015, p. 8) who advocated the need for higher order (overall) PV construct comprising of different (first-order) dimensions, in order to increase the "practical and scientific relevance of the model" by clarifying the "relational disposition" of PV. Accordingly, the higher-order components will be explored and established first, before investigating the first order dimensions.

The intra-variable perspective exemplifies the PV components and dimensions which increases or decreases the overall PV. It is thus imperative to understand the inter-relationship between these components and dimensions in order to capture a more comprehensive picture of PV concept (Holbrook, 1999, p. 4; Sweeney and Soutar, 2001, p.

205). Moreover, Gallarza and Gill-Saura (2006, p. 439) have stated that "value conceptualisation as a trade-off between 'get' and 'give' elements ... is needed to understand the value concept in an integrative approach". Consequently, the EVP model is chosen as the starting point in redefining the scope of PV in the consumer goods context.

As discussed earlier, Groth (1994) elucidated EVP for luxury products, with two components of PV, namely the utility or cognitive component and the psychic or affective component. This bifurcation between cognitive and affective components is supported by the "cognition-affect-behavior paradigm" (Zauner *et al.*, 2015) and previous conceptualisations (Babin *et al.*, 1994; Chang and Dibb, 2012; Gallarza and Gill-Saura, 2006; Sánchez-Fernández *et al.*, 2009; Tasci, 2016). Zauner et al. (2015) also stated that "...the importance of conceptualising customer perceived value along cognitive as well as emotional dimensions is backed up by recent experimental evidence from neuroeconomics" (Zauner *et al.*, 2015, p. 6). Here, the utilitarian or cognitive component is defined as the results of conscious pursuit of specific consequences or end goals (Babin *et al.*, 1994; Groth, 1995). This implies that cognitive component is a rational, task-related evaluation arising from successful completion of a shopping task/goal (Chang and Dibb, 2012). Babin *et al.* (1994) further differentiated this rational, cognitive component from the affective component by defining later as more subjective and personal evaluation of the consumption experience, that reflects the entertainment, emotional worth, social and other sensate benefits of the shopping experience (Chang and Dibb, 2012; Groth, 1995; Tasci, 2016). Furthermore, extant literature reveals that higher-order conceptualisations (Gallarza *et al.*, 2017a, 2019; Holbrook, 1999; Mathwick *et al.*, 2001; Rintamäki *et al.*, 2006), have proposed, tested and validated the cognitive-affective dimensions as higher-order or second-order components of PV concept. Thus, the cognitive and affective dimensions proposed by Groth (1995), and supported by extant literature, will be the used as the first set of higher-order components for the proposed conceptualisation.

Moreover, Groth (1995)'s propositions that only psychic or affective component is further sub-divided into the internal and external elements, overlooking any possibility of similar split in the utilitarian or cognitive component. However, it should be noted that, EVP model is proposed solely for evaluating the PV of luxury products or services and thus focusing only on the component that will generate the premium pricing (Groth, 1995). Consequently, considering the context for this thesis, consumer goods in the, emerging devices market, this author proposes a similar split in the cognitive component using the internal and external elements. Here, the internal elements encompass all the factors

generating value fulfilment, which are within the control of customer (Groth, 1995). In the extant literature, PV generated by active control of customer on the product, has been conceptualised as "active value" (Ahn *et al.*, 2019; Gallarza *et al.*, 2017a; Gallarza and Gill-Saura, 2006; Holbrook, 1999; Mathwick *et al.*, 2001; Sánchez-Fernández *et al.*, 2009). This implies that internal elements are comparable to active value resulting from a consumption experience where 'things are done by a customer to or with a product' (Holbrook, 1999, p. 11). Conversely, all the factors, generating PV, that are beyond the control of customer, are termed as external elements (Groth, 1995). These external elements focus on value fulfilment due to outside influences, for example generating social approval through consumption experience (Gallarza *et al.*, 2017a; Gallarza and Gill-Saura, 2006; Sánchez-Fernández *et al.*, 2009). Holbrook (1999) categorised such external elements (which are under passive control of customer) as "reactive value". This implies that, both, internal and external elements have been conceptualised and operationalised in extant literature as higher-order or second-order components of PV (Ahn *et al.*, 2019; Gallarza *et al.*, 2017a; Gallarza and Gill-Saura, 2006; Holbrook, 1999; Mathwick *et al.*, 2001; Sánchez-Fernández *et al.*, 2009). Moreover, in the recent review paper, Stępień (2017), highlighted how internal and external factors affect overall PV measurements. Thus, the internal and external elements proposed by Groth (1995), will be used as the second set of higher-order components.

Finally, by redefining the cognitive component of the EVP model as a function of internal-external components as well, a new conceptualisation for PV can be developed as shown in Figure 7. Thus, the following **research proposition (P1)** is presented:

P1: The cognitive component of PV is conceptualised using both internal and external elements

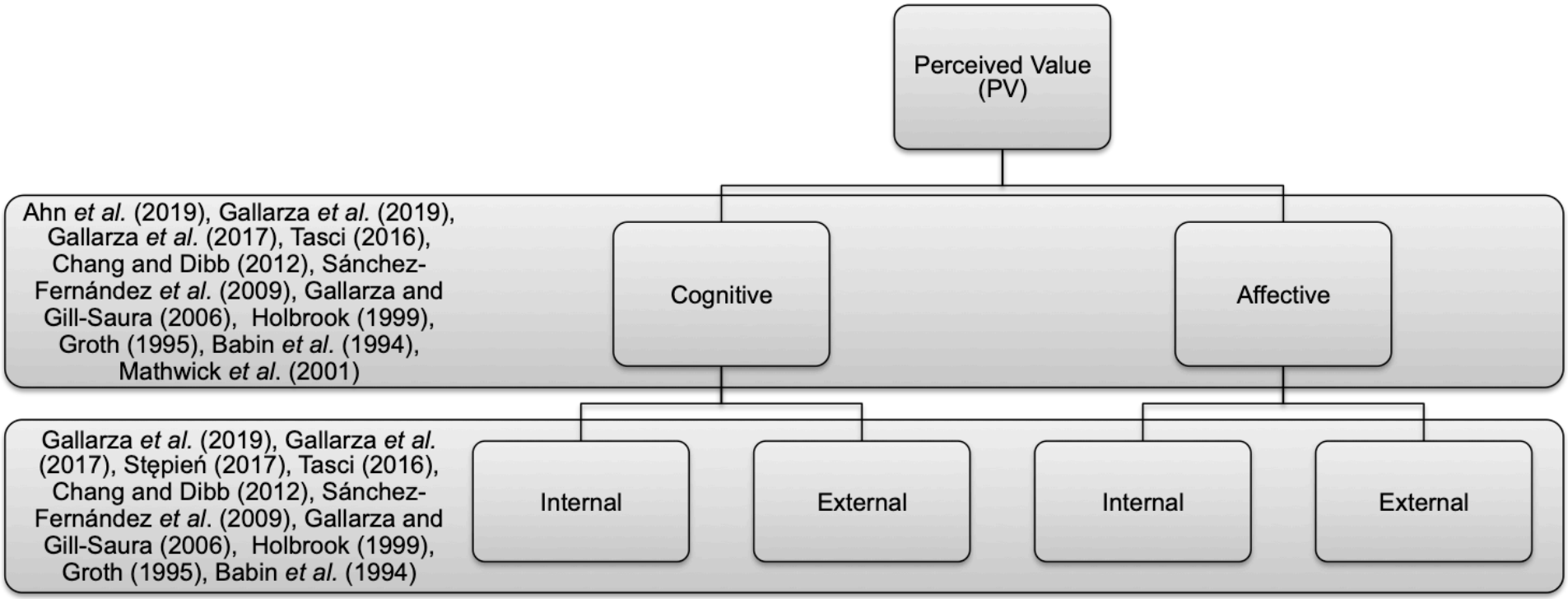


Figure 7: Proposed Conceptualisation: the higher order components (extended EVP model by Groth, 1994)

2.4.6.2. Establishing 2x2 Matrix Typology

To establish the order (higher or first) for proposed conceptualisation, all four components are viewed as an expression of PV concept previously acknowledged in the literature. This may provide better insights in relation to existing models and how the proposed conceptualisation is thoroughly grounded in PV literature. Accordingly, it is observed that "despite their inherent conceptual flaws, empirical work has sought to apply the typologies presented by Sheth et al. (1991) and Holbrook (1999), with six of the ten most-cited multi-dimensional studies (including these studies themselves) adopting one of these models as a conceptual foundation" (Bruce, 2013, p. 29). Moreover, most of the existing multi-dimensional models are either based on or fit within Holbrook (1999). Thus, Holbrook (1999)'s typology is considered to investigate the higher-order dimensionality of the proposed conceptualisation.

The typology of value is argued to have 2x2x2 conceptualisation comprising of three central dichotomies: (1) extrinsic and intrinsic, (2) self-oriented and other-oriented, and (3) active and reactive (see sub-section 2.4.5.1, p. 53). However, most studies following Holbrook (1999)'s typology (for instance, Ahn *et al.*, 2019; Gallarza and Gill-Saura, 2006; Mathwick *et al.*, 2001) choose to focus on the self-oriented dichotomy, as it is considered to be more representative of consumer behaviour (Gallarza and Gill-Saura, 2006). The resultant model becomes a 2x2 matrix with two sets of higher-order components (namely, extrinsic vs intrinsic and active vs reactive) (Figure 6, p. 53) (Gallarza and Gill-Saura, 2006; Mathwick *et al.*, 2001).

The extrinsic vs intrinsic dichotomy can also be viewed as expressions of utilitarian or cognitive component vs hedonic or affective component (Gallarza *et al.*, 2016, p. 171). Gallarza *et al.* (2016) further elaborated that many studies have identified intrinsic component to be interchangeable with terms such as hedonic, emotional, or affective. Furthermore, as discussed in previous sub-sections (2.4.4 and 2.4.5), most studies (Gallarza *et al.*, 2017a; Mathwick *et al.*, 2001; Petrick, 2002; Rintamäki *et al.*, 2006; Roig *et al.*, 2006; Sánchez-Fernández *et al.*, 2009) that support the multi-dimensional approach to assess PV, agree that the intrinsic vs extrinsic dichotomy is comparable to proposed higher-order cognitive and affective components. Additionally, the active vs reactive dichotomy, can be compared to the internal-external components of proposed conceptualisation. Consequently, considering Holbrook (1999)'s condensed typology of value (2x2 matrix rather than 2x2x2 matrix) has been successfully operationalised, tested and validated by previous researches (Gallarza and Gill-Saura, 2006; Mathwick *et al.*, 2001), it can be concluded that the proposed sets of components (cognitive-affective and internal-external) conforms to the aforementioned dichotomies. Thus, the overall model can also be envisaged as 2x2 matrix

model, based on the condensed Holbrook's typology as operationalised by Mathwick *et al.* (2001). Figure 8 presents this proposed 2x2 matrix model.

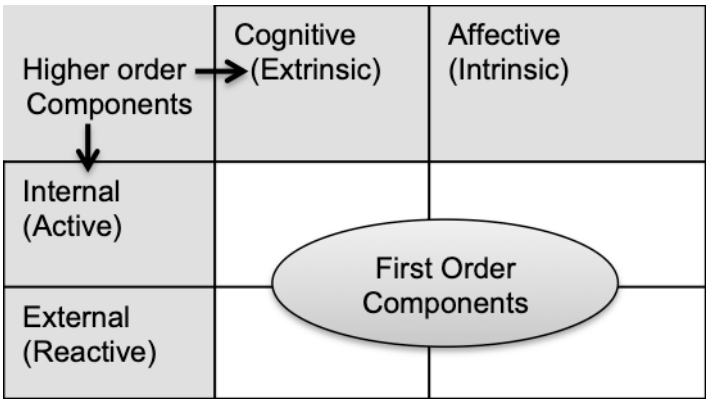
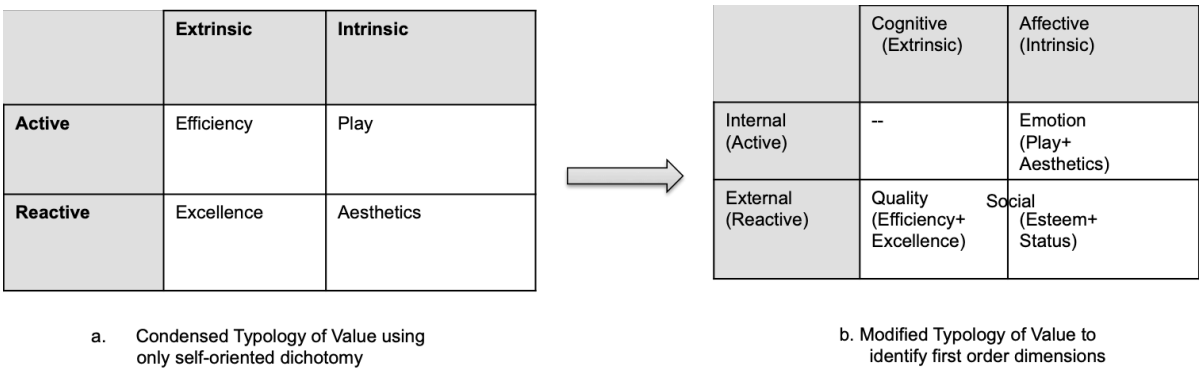


Figure 8: Establishing 2x2 Matrix by comparing Proposed Conceptualisation with Holbrook's Typology of Value

2.4.6.3. The First Order Dimensions: 2x2 matrix in refrence to previous conceptualisations

In order to establish first order dimensions, first the Holbrook (1999)'s typology is explored further. As discussed in previous section, all four dimensions of the self-oriented dichotomy (efficiency, excellence, aesthetics and play) are considered (see Figure 9, , panel a). However, considering the dimensions for these four components on a more abstract level, it can be argued that some of these dimensions could be combined into one integrated dimension. For instance, considering the extrinsic or cognitive dichotomy, Gallarza and Gill-Saura (2006, p. 448) found that there is a strong relationship between self-oriented active and reactive dimensions of efficiency and excellence. They proposed that, owing to the strong correlation between the two aforementioned dimensions, they can be merged into a single dimension, which can termed as "quality dimension". However, quality can be argued to capture more extrinsic-reactive (cognitive-external) component as supported by the empirical results of Gallarza *et al.* (2017, p. 750) and the measurement items of quality and efficiency, proposed by Gallarza and Gill-Saura, (2006). This leaves a gap for cognitive-internal dimension. To address this gap, dimensions in other-oriented dichotomy for extrinsic (cognitive) components is considered. Here, status is the internal or active dimension and esteem is the external or reactive dimension. However, the extant literature reveals that factors of both esteem and status dimensions can be consolidated and integrated into social

dimension (Gallarza *et al.*, 2016; Gallarza and Gill-Saura, 2006; Sánchez-Fernández *et al.*, 2009), hence considering the empirical support for integrating this dimension (Gallarza *et al.*, 2016; Sánchez-Fernández *et al.*, 2009), this thesis will also integrate social dimension which, according to (Holbrook, 1999), is classified as other-oriented, cognitive dimension. However, Gallarza *et al.* (2017, p. 750) found that there is a very weak link between social and the extrinsic or cognitive component. Also, the reactive or external esteem is far stronger than the active or internal status (Gallarza *et al.*, 2019). Following this argument and exploring the measurement items for social (Gallarza *et al.*, 2016; Gallarza and Gill-Saura, 2006), this thesis proposes that social dimension represents more affective (as compared to cognitive) and external dimension of PV, rather than cognitive-internal dimension. This implies that quality is the only fully cognitive dimension here. More importantly, there seems to be a lack of any cognitive-internal dimension that can be adapted from extrinsic-other oriented dichotomy.



a. Condensed Typology of Value using only self-oriented dichotomy

b. Modified Typology of Value to identify first order dimensions

Figure 9: **RG 2** identified by modifying Holbrook (1999)'s first order dimensions

Similarly, considering the intrinsic or affective dichotomy, play is classified as active (internal) dimension, and aesthetic is reactive (external) dimension (Holbrook, 1999); yet, Gallarza *et al.* (2016) combined aesthetic with play to formulate the emotions dimension. Here, since play has been empirically recognised to represent "emotional responses" in the SERV-PERVAL scale by Petrick (2002, p. 128), the integrated emotions dimension becomes more active (internal), leaving social as the reactive (external) dimension. To find another reactive (external) dimension, other-oriented dichotomy is considered (Table 6, p. 53). Considering the intrinsic dichotomy, both ethics (internal) and spirituality (external), are considered as difficult to operationalise (Gallarza and Gill-Saura, 2006, p. 443). Although, later studies have operationalised both ethics and spirituality, as altruistic value (an

integrated dimension) (Gallarza *et al.*, 2017a; Sánchez-Fernández *et al.*, 2009), these works are rather scarce and the empirical results needs more replication. So, both ethics and spirituality will not be used as PV dimensions for this thesis.

Thus, as shown in Figure 9, panel b, emotion dimension represents the affective-internal, social dimension represents the affective-external and quality dimension captures the cognitive-external component of PV. However, there seems to be a lack of any cognitive-internal dimension that can be adapted from Holbrook (1999)'s typology. In order to address this gap, it can be argued that the components and dimensions in the Figure 9 (panel b) may be linked to other past PV conceptualisations and operationalisations. Following this line of reasoning, Table 8 (p. 71) provides (1) a chronological overview of selected empirical studies to highlight the various PV dimensions from extant literature; and, (2) regroups the PV dimensions of other existing models, from marketing and service literature, in accordance to the cognitive-affective and internal-external components, utilising the definition and also the characteristics of the measurement items.

S.No.	Author(s)/Year	Theoretical Base	Dimensions			
			Cognitive		Affective	
			Internal	External	Internal	External
1.	Sheth *et al.* (1991)	Theoretical		Functional Value	Emotional Value	Social Value*
				Conditional Value	Epistemic Value	
2.	De Ruyter *et al.* (1997)	Theoretical		Functional Dimension or Extrinsic Value	Emotional Dimension or Intrinsic Value	Systematic Value
3.	Parasuraman and Grewal (2000)		In-use Value	Acquisition Value		Redemption Value
				Transaction Value		
4.	Williams and Soutar (2000)			Functional Value	Emotional Value	Social Value*
					Epistemic Value	
5.	Sweeney and Soutar (2001)	Sheth *et al.* (1991)		Functional Value (performance/ quality)	Emotional value	Social Value*
				Functional Value (price/ value for money)		
6.	Mathwick *et al.* (2001)	Holbrook (1994)		Customer Return on Investment (efficiency, economic)	Aesthetics (visual appeal, entertainment)	
				Excellence	Playfulness (escapism, intrinsic enjoyment)	
7.	Petrick (2002)	Zeithaml (1988)		Quality	Emotional Response	Reputation
				Monetary Price		
				Behavioral Price		

S.No.	Author(s)/Year	Theoretical Base	Dimensions			
			Cognitive		Affective	
			Internal	External	Internal	External
8.	Wang *et al.* (2004)	Sweeney and Soutar (2001)		Customer Perceived Sacrifices	Emotional Value	Social Value*
				Functional Value		
9.	Pura (2005)	Sheth *et al.* (1991)	Convenience Value	Monetary Value	Emotional Value	Social Value*
				Conditional Value	Epistemic value	
10.	Orth *et al.* (2005)			Functional Benefit/ Quality	Emotional Benefit/ Bvoke Good Geelings	Social Benefit/ Enhancement of Self-concept*
				Price/Value for Money		Environmental Benefit
						Humane Benefit
11.	Lin *et al.* (2005)		Fulfillment/ Reliability	Customer Service	Security/Privacy	
				Web-site Design		
				Monetary Sacrifice		

S.No.	Author(s)/Year	Theoretical Base	Dimensions			
			Cognitive		Affective	
			Internal	External	Internal	External
12.	Roig *et al.* (2006)	Sánchez *et al.* (2006)		Functional Value of the Establishment (installations)	Emotional Value	Social Value*
				Functional Value Contact Personnel (professionalism)		
				Functional Value of the Service Purchased (quality)		
				Functional Value Price		
13.	Sánchez *et al.* (2006)	Sweeney and Soutar (2001)		Functional Value of the Travel Agency (installations)	Emotional Value	Social Value*
				Functional value of contact personnel of the travel agency (professionalism)		
				Functional Value of the tourism package purchased (quality)		
				Functional Value Price		
14.	Rintamäki *et al.* (2006)			Utilitarian Value (monetary savings, convenience)	Hedonic Value (entertainment, exploration)	Social Value (status, self-esteem)*

S.No.	Author(s)/Year	Theoretical Base	Dimensions			
			Cognitive		Affective	
			Internal	External	Internal	External
15.	Gallarza and Gill-Gill-Saura (2006)	Holbrook (1999)	Perceived Risk	Efficiency	Play	Social Value*
			Time and Effort	Service Quality (excellence)	Aesthetics	
				Monetary Cost		
16.	Pihlström and Brush (2008)	Sheth *et al.* (1991)	Convenience Value	Monetary Value	Emotional Value	Social Value*
				Conditional Value	Epistemic Value	
17.	Sánchez-Fernández *et al.* (2009)	Holbrook (1999)		Efficiency	Play	Social value*
				Quality	Aesthetics	Altruistic Value
18.	Gallarza *et al.* (2017)	Holbrook (1999)		Efficiency	Play	Status*
				Service Quality (excellence)	Aesthetics	Esteem*
					Escapism	Ethics
19.	Tsai (2017)			Utilitarian Value Dimension	Novel Value Dimension	
					Experiential Value Dimension	
20.	Ahn *et al.* (2019)	Mathwick *et al.* (2001)		Return on Investment	Playfulness	
				Service Excellence	Atmosphere	
21.	Gallarza *et al.* (2019)	Holbrook (1999)		Efficiency	Entertainment	Status*
				Excellence	Aesthetics	Esteem*
						Ethics
						Escapism

Table 8: Chronological overview of Existing Operationalisations of PV

Table 8 illustrates the similarities between the proposed 2x2 matrix and previous conceptualisations. Although, it can be stated that many empirical studies are augmentation of previous theoretical conceptualisations, it is evident in Table 8 that most of these dimension challenge and overlap one another. For instance, the cognitive-external dimensions encompass the "Functional dimension", as proposed by later studies. The functional dimension is ascertained by the rational evaluation of product attributes (both, quality and price) and may include measurement constructs involving functional and conditional (Sheth *et al.*, 1991), value for money (Sweeny *et al.*, 1999), non-monetary sacrifices (Petrick, 2002; Sweeny *et al.*, 1999) and price (Petrick, 2002; Sweeney and Soutar, 2001). The service marketing literature reveals another set of cognitive dimensions that are out of scope of this thesis. For instance, service quality (Sánchez *et al.*, 2006), acquisition, transaction (Parasuraman and Grewal, 2000), customer service, functional value of the establishment (installations), functional value contact personnel (professionalism) and functional value of the service purchased (quality) (Roig *et al.*, 2006; Sánchez *et al.*, 2006), web site design (Lin *et al.*, 2005), customer return on investment (Mathwick *et al.*, 2001).

Similarly, affective-internal dimension is represented by "Emotional dimension" (Sweeney and Soutar, 2001) which represents Holbrook (1999)'s play and aesthetic, and captures the emotions or feelings generated by the consumption of certain product or services. Similarly, other dimensions like epistemic (Sheth *et al.*, 1991), and Security/privacy (Lin *et al.*, 2005) can also be classified under affective-internal dimension. Furthermore, the affective-external is represented by Holbrook (1999)'s esteem and status or "Social dimension" (Sweeney and Soutar, 2001) dimension. Other dimensions like, redemption value (Parasuraman and Grewal, 2000), reputation (Petrick, 2002), environmental benefit, humane benefit (Orth *et al.*, 2005), altruistic value (Sánchez-Fernández *et al.*, 2009), ethics and escapism (Gallarza *et al.*, 2019), can also be classified as affective-external dimensions.

However, as Table 8 (p. 71) reflects, there are only few cognitive-internal dimensions and all of them can be traced back to service marketing literature. Parasuraman and Grewal (2000, p. 169) proposed the in-use dimension and defined it as the "utility derived from using the product". The judgement in terms of usage may indicate the cognitive reasoning that can be considered as under active control of user. Thus, in-use value may effectively capture the cognitive-internal component; however they have admitted a lack of measurement items for this dimension (Parasuraman and Grewal, 2000, p. 170). Consequently, this thesis has left this dimension for future research. Similarly, other dimensions like convenience value (Pihlström and Brush, 2008; Pura, 2005), Fulfillment/reliability (Lin *et al.*, 2005), perceived risk, time and effort (Gallarza and Gill-Saura, 2006) can also capture cognitive-internal

dimension. However, Boksberger and Melsen (2011) has classified convenience, risk, time and effort as non-monetary costs, which are more external in nature. Thus, it can be stated that even though previous studies have provided few dimensions that can, in theory, capture cognitive-internal component, there still exists a need to find a more suitable dimension. Consequently, another research gap **(RG2)** can be identified and stated as below.

RG2: There seems to be a gap in terms of cognitive-internal dimension of PV.

Furthermore, it is evident that most of the above mentioned studies echo the four main underlying dimensions: Price (Functional), Quality (Functional), Emotional and Social (De Ruyter *et al.*, 1997; Gallarza and Gill-Saura, 2006; Mathwick *et al.*, 2001; Petrick, 2002; Pura, 2005; Roig *et al.*, 2006; Sheth *et al.*, 1991; Sweeney and Soutar, 2001; Sánchez *et al.*, 2006). These four dimensions are well represented in Sweeney and Soutar (2001)'s PERVAL scale, which has been empirically tested and replicated by others (Orth *et al.*, 2005; Roig *et al.*, 2006; Turel *et al.*, 2007). This scale represents a significant step forward in the measurement of PV, as it follows a rigorous process of preparation of a scale, and because it permits empirical testing of the multi-dimensional character of the construct and thus provides comprehensive foundation for future scale developments (Zauner *et al.*, 2015, p. 12). For these reasons, among the models reviewed, the choice of Sweeney and Soutar (2001) PERVAL scale should provide more comprehensive insights into PV. Consequently, it can be concluded that, while most dimension, proposed by various researchers (Gallarza *et al.*, 2017a; Mathwick *et al.*, 2001; Petrick, 2002; Rintamäki *et al.*, 2006; Roig *et al.*, 2006; Sánchez-Fernández *et al.*, 2009), challenge and overlap each other in meaning, they can be adequately represented by PERVAL. Following this line of reasoning, PERVAL could theoretically fit in to the 2x2 matrix, established in previous section (2.4.6.2). Moreover, since the proposed conceptualisation is rooted purely in the benefit-cost approach (extended EVP model), integrating PERVAL scale (that follows the experiential approach) would, theoretically, increase the conceptual richness of the model. Thus, this thesis propositions to integrate the PERVAL scale with the 2x2 matrix model to operationalise the proposed conceptualisation addressing RG1 (see Figure 10). The following research proposition (P2) is presented:

P2: The PERVAL scale dimensions fit in the 2x2 matrix framework

As shown in Figure 10, PERVAL can be divided into cognitive (Price, quality) and affective (social and emotional) dimensions. Moreover, emotion dimension can be categorised under internal component as they can be perceived to be controlled or influenced by an individual. The social dimension can be categorised under external component as it is more susceptible to other's influences (based on the measurement items, see Table 8, p. 71). This integrated model for PV substantiates RG2, that is, the missing cognitive-internal dimension (Figure 10). It is argued that PERVAL scale needs to be extended to address this identified knowledge gap to capture the cognitive-internal dimension and provide a more balanced measurement scale.

	Cognitive	Affective
Internal	RG2	Emotion
External	Quality	Social

Figure 10: Operationalisation of 2x2 Matrix.

2.4.6.4. The Hidden Dimension: Extending PERVAL

To address the research gap identified as, yet un-named cognitive-internal dimension (RG2), this thesis follows the call for integrated models (Khalifa, 2004; Klanac, 2013). Klanac (2013, p. 32) asserts that the three PV approaches "are not mutually exclusive but rather complementary." Following this line of reasoning, it can be stated that the current operationalisation of 2x2 matrix is an amalgamation of benefit-cost and experiential approaches. Consequently, the current model has reduced the limitation of experiential approach; namely, oversimplification of PV construct by ignoring the negative aspects of PV, and benefit-cost approach; namely, relying only on customer cognition. However, this model contains further limitations, that, theoretically, can be reduced by integrating the remaining means-end approach. Furthermore, Holbrook (1999, p. 10) argued that "extrinsic value pertains to a means-end relationship wherein consumption is prized for it's functional, utilitarian, or banausic instrumentality in serving as a means to accomplishing some further purpose, aim, goal, or objective". Thus, this thesis focuses on the means-end approach for fulfilling RG2 and develop a more comprehensive and robust model

Figure 11 presents the comparability of Woodruff and Gardial value hierarchy (1996) and the PERVAL dimensions. At the lowest level, Desired Attributes, are associated with the

Quality Dimension of PERVAL; Desired Consequences relate to the positive consequences or Benefits (identified as Emotional and Social dimensions) as well as negative consequences or Sacrifices (denoted as Price dimension); however, Desired End State has not been accounted for in PERVAL and hence provide a starting point for investigating possible cognitive-internal dimension.

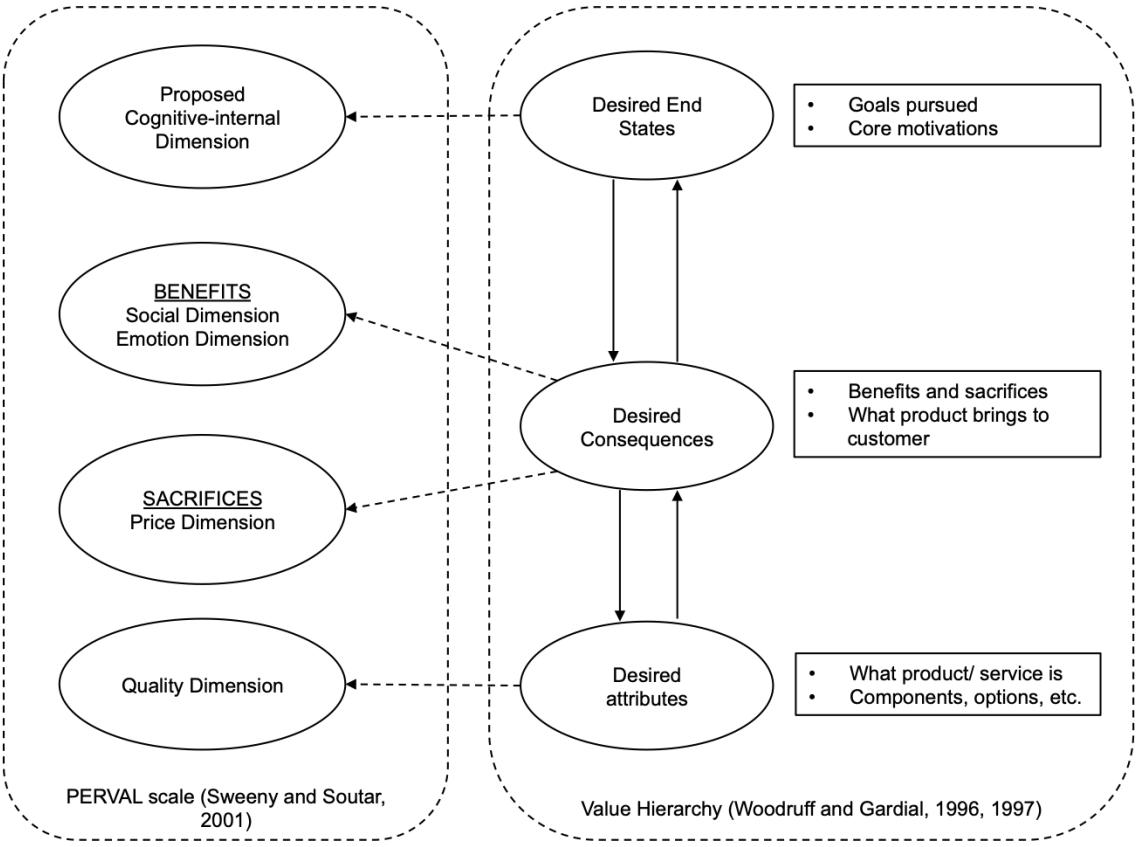


Figure 11: Comparing Woodruff (1997)'s Value Hierarchy to PERVAL Scale.

Desired end state or the cognitive representations of goals (Austin and Vancouver, 1996; Elliott and Dweck, 1988) motivate and directs the consumer behaviour in terms of desiring the pleasant consequences or avoiding the unpleasant consequences (Huber *et al.*, 2001; Yang *et al.*, 2002). Later studies (such as (Gallarza *et al.*, 2017a; Sánchez-Fernández *et al.*, 2009) followed this line of reasoning and defined PV in terms of personal value, mental images, or cognitive representations underlying customer's needs and goals (Khalifa, 2004). Also, goals have been adopted as a driver of PV in the existing PV literature, as consumers evaluate the value of a product based on its perceived ability to meet their needs (goals or end-states) (Levitt, 1980). Recognising the 'need' is the first step of five-step consumer

decision-making process. The next step is 'information search' to satisfy the need. The motivation to satisfy the recognised need can be a combination of internal and external factors and instigate the third step, 'evaluations of the value'. The evaluation involves processing gathered information by affective and cognitive assessment of value, resulting in the fourth step, 'purchase intent'. The fifth and final step of the decision-making process, 'post-purchase evaluation' involves a similar affective and cognitive assessment of satisfaction and loyalty. Consequently, it can be stated that costumers focus on achieving a specific goal or need-fulfilment during the decision making process (Bruce, 2013, p.142). This assumption is further supported by Woodruff (1997)'s definition of PV that "...links together products with use situations and related consequences experienced by goal-oriented customers." (P. 142). In other words, the goals of customer motivate and directs the consumer behaviour in terms of desiring the pleasant consequences or avoiding the unpleasant consequences (Bruce, 2013). Consequently, the extent to which the product attributes are relevant with the goals of the customer, will influence the overall PV assessments. Thus, it can be stated that goals have a substantial influence on PV, making it imperative to further explore the application of goals and their relevance in terms of PV dimension.

2.4.6.4.1. The Implicit Representation of Goals in PV literature

The literature review reveals that (Table 9, p. 80), considering the definition and the characteristics of the measurement items, variety of PV dimensions have implicitly captured goals by focusing on need fulfilment. The majority of these studies (Table 9) depicts the functional dimension of value overlapping with goals or task fulfilment, as well as with the cognitive effort involved in satisfying customer's need. For instance, Potra et al. (2018, 211) propositioned that "utility value (need) can be associated with the functional value of the added value concept." Pura (2005), described the functional value in terms of effective 'task-fulfilment'. Several other studies (see Table 9) have also emphasised that functional (De Ruyter *et al.*, 1997; Gronroos, 1997; Groth, 1994) or utilitarian (Babin *et al.*, 1994; Rintamäki *et al.*, 2006; Tsai, 2017) value is delivered by utility or functional usefulness of a product. Furthermore, table 9 provides a chronological summary of selected empirical studies that incorporate goals in their multi-dimensional approach and measure goal implicitly.

Number	***Author(s)/Year***	***First Order Dimension***	***Measurement Items***
1.	Babin *et al.* (1994)	Utilitarian	*I accomplished just what I wanted to on this shopping trip.*
			I couldn't buy what I really needed.
			While shopping, I found just the item(s) I was looking for.
			I was disappointed because I had to go to another store(s) to complete my shopping.
			I feel this shopping trip was successful.
			I feel really smart about this shopping trip.
			This was a good store visit because it was over very quickly.
2.	De Ruyter *et al.* (1997)	Functional Dimension	Extrinsic value pertains to the utilitarian aspects of a service episode as a useful means to a certain end.
3.	Grewal *et al.* (1998)	Perceived Acquisition Value	If I bought this bicycle at (selling price), I feel I would be getting my money's worth.
			I feel that I am getting a good quality bicycle for a reasonable price.
			After evaluating the advertised bicycle features, I am confident that I am getting quality features for (selling price).
			If I acquired this bicycle, I think I would be getting good value for the money I spend.
			I think that given this bicycle's features, it is good value for the money.
			I feel that acquiring this bicycle meets both my high quality and low price requirements.
			Compared to the maximum price I would be willing to pay for this bicycle, the sale price conveys good value.
			I would value this bicycle as it would meet my needs for a reasonable price.
			This bicycle would be a worthwhile acquisition because it would help me exercise at a reasonable price.

Number	***Author(s)/Year***	***First Order Dimension***	***Measurement Items***
4.	Cronin *et al.* (2000)	Service Value	Overall, the value of this facility's services to me is...
			Compared to what I had to give up, the overall ability of this facility to satisfy my wants and needs is...
5.	Lin *et al.* (2005)	Customer Service	*The company is willing and ready to respond to customer needs.*
			When you have a problem, the web site shows a sincere interest in solving it.
			Enquiries are answered promptly.
6.	Pura (2005)	Conditional Value	*I value the information this service offers, with the help of which I get what I need in a certain situation.*
			I value the customized information according to my location, that I get by using this location based mobile service.
7.	Gallarza and Gill-Saura (2006)	Service Quality (excellence)	Provide service reliably, consistently and dependently.
			Provide service in a timely manner.
			Competent employees (knowledgeable and skillful).
			Approachable employees and easy to contact.
			Courteous, polite and respectful employees.
			Employees listen to me and we understood each other.
			Employees were trustworthy, believable and honest.
			Employees make the effort to understand my needs.
			Employees were neat and clean.
8.	Rintamäki *et al.* (2006)	Convenience	*I was able to get everything I needed at one stop.*
			I was able to shop without disruptive queuing or other delays.
			I was able to make my purchases conveniently.

Number	***Author(s)/Year***	***First Order Dimension***	***Measurement Items***
9.	Sánchez *et al.* (2006)	Emotional Value	I am comfortable with the tourism package purchased.
			The personnel were always willing to satisfy my wishes as a customer, whatever product I wanted to buy.
			The personnel gave me a positive feeling.
			I felt relaxed in the travel agency.
			The personnel didn't pressure me to decide quickly.
10.	Pihlström and Brush (2008)	Conditional Value	*I value the information / entertainment this service offers,with the help of which I get what I need in a certain situation (n).*
			I value the independence of place and time offered by the use of this mobile service (n).
			I value the real time information and interaction that this service makes possible (n).
11.	Gallarza *et al.* (2017)	Service Quality (excellence)	Generally, the employees provide service reliably, consistently, and dependably.
			Generally, the employees are willing and able to provide service in a timely manner.
			Generally, the employees are competent.(i.e. knowledgeable and skillful)
			Generally, the employees are approachable and easy to contact.
			Generally, the employees are courteous, polite, and respectful.
			Generally,theemployeeslistentomeandspeak in a language that I can understand.
			Generally, the employees are trustworthy, believable, and honest.
			Generally, the employees make the effort to understand my needs.
			Generally, the physical facilities and employees are neat and clean.
12.	Tsai (2017)	Utilitarian Value Dimension	The offering is problem-solving.
			The offering features utility.
			The offering satisfies substantive need.

Number	***Author(s)/Year***	***First Order Dimension***	***Measurement Items***
13.	Gallarza *et al.* (2019)	Efficiency	The offering is problem-solving.
			The offering features utility.
			The offering satisfies a substantive need.

* The measurement items capturing goals are in *italics.*

Table 9: Chronological overview of studies incorporating Goals using a Multi-dimensional Approach

As evident in Table 9, there are several more dimensions proposed by earlier researchers, which measure the relevance of goals implicitly, as a part of other dimensions. For instance, acquisition value (Grewal *et al.*, 1998) and service value (Cronin *et al.*, 2000) implicitly measures goals in terms of product's ability to satisfy substantial need. Similarly, studies, based on Holbrook (1999), gauges need-fulfilment as a part of efficiency (Gallarza *et al.*, 2019), service quality or excellence (Gallarza *et al.*, 2017a; Gallarza and Gill-Saura, 2006). Also, studies based on Sheth *et al.* (1991), used conditional value to assess need-fulfilment in a certain situation, emphasising on situational impact on PV. However, it should be noted that, although different researchers have used different measurement items for such dimensions, usually only one or two out of all measurement items tend to capture need-fulfilment, contributing to the implicit assessment of goals.

2.4.6.4.2. Defining the Cognitive-Internal Dimension of Goal-Relevance

Goals are assessed by organising them in hierarchies to facilitate their accomplishment and choice can be regarded as a customer's movement through a goal hierarchy (Gutman, 1997). In such cases, the consumer aims to satisfy a specific goal by making a purchasing decision (Bagozzi and Dholakia, 1999; Heitmann *et al.*, 2007) and evaluates the alternatives based on its relevance in fulfilling their goal. Furthermore, in Appraisal Theory, PV is considered a trade-off between goal conduciveness (Goal-relevance) and emotional experiences (Scherer, 1984). Here, the term goal conduciveness refers to the relevance of an outcome of the activity (Kreibig *et al.*, 2012; Scherer, 1984), and is evaluated by reasoning such as "how relevant is this event for me?" (Scherer, 2001, p. 94). In other words, goal-relevance is the degree to which a situation or event is viewed as relevant to one's current goal. Therefore, Goal-relevance will shape the goal of the consumer, how consumers perceive a product, and how that perception may affect their overall preference and choice.

Goal-relevance captures the initial stage, need-recognition, of the Consumer

Decision Making Process Model (Blackwell, 2001; Darley and Luethge, 2010) and describes the consumer's task definition along with the intent, motivation and the expectation of the consumer. Table 10 presents the various term used for depicting Goal-relevance and their interpretation.

Number	***Author(S)/Year***	***Term***	***Definition***
1.	Frijda (1987, p. 120)	Open/Closed	Offering possibility for approach or escape.
2.	Johnson and Stewart (2005, p. 14, 17)	Goal Importance	The appraised importance of a goal is associated with the value or desirability of the state that is sought.
		Direction of Goal Congruence	Whether a situation is perceived to move the individual closer to or away from desired goals.
		Degree of Goal Congruence	The degree to which the situation meets expectations or approximates the desired state.
3.	Nyer (1997, p. 297)	Goal-relevance	The extent to which an event or outcome is personally relevant to the individual.
4.	Ortony *et al.* (1988, p. 49)	Desirability	The degree to which an event is or would be beneficial, of value, worth or utility.
5.	Roseman (1991, p. 192)	Motive Consistency	Assesses the consistency of events with motives.
		Appetitive/Aversive	Whether motives are states to be attained or avoided.
6.	Scherer (1988, p. 97, 99, 101)	Goal-relevance	Whether an event produces outcomes which affect needs or goals.
		Goal-Related Valence	Degree to which events further one’s plans or goals.
		Goal Consistency	Consistency of one’s state following an event with the expected state predicted for that point in the goal/path plan.
7.	Smith and Ellsworth (1985, p. 818)	Perceived Obstacle or Goal/Path Obstacle	Perception of something standing in the way of a goal.

Table 10: Definition of Goal-Relevance (Adopted from: Watson and Spence, 2007)

Although, goal-relevance has been argued to be an inherent part of PV, and is implicitly assessed, it is concluded that there is a need to consider goal-relevance as an

independent dimension of PV. However, these studies fail to cover the richness of "Goal-relevance" that ultimately affects consumer loyalty. This line of thinking implies that it is worthwhile to further investigating Goal-relevance with regards to PV. Thus, goal-relevance needs to be included as a separate dimension explicitly.

Due to lack of scaling efforts for goal-relevance dimension explicitly, a combination of sources was used to construct the measurement items for goal-relevance dimension as presented in Table 8. Moreover, Russell (2002, p. 1632) suggested that in order to adequately operationalise a factor model, at least three items per factor are required to be identified. Table 8 presented the far measurement items choose four measurement items were chosen.

Author (s)/Year	***Measurement Item***
Davis (1989); Lai *et al.* (2010); Mohd-Any *et al.* (2015); Nyer (1997)	Is useful for my goal.
Davis (1989); Mohd-Any *et al.* (2015); Sigala (2006)	Would enable me to accomplish my goals.
Scherer (1993)	Would hinder me in attaining my goals.
Scherer (1993)	Is relevant for my specific goals.

Table 11: Goal-Relevance: measurement items.

2.4.6.4.3. Integrating Goal-relevance

By comparing the Woodruff (1997)'s value hierarchy with the PERVAL, it is concluded that insufficient attention has been given to the concept of goals and goal-relevance by the literature. Furthermore, based on the proposed definition (See section 2.2, p. 37), PV is defined as: "...an outcome of consumption experience resulting from overall assessment of the trade-off as personally relevant." Here, the 'outcome' is considered as 'personally relevant' to capture the goal-driven aspect of value hierarchy propounded by Woodruff (1997) (see sub-section 2.4.4.1, p. 45). The interchangeability between outcome and goals is also supported by Macdonald *et al.* (2011) as they used customer's outcome as synonymous to customer goals while defining value-in-use. Defining PV as goal driven (Woodruff, 1997) provides additional supports and insights into the PV concept. By considering PV as goal-driven, the idiosyncratic and personal nature of PV (Zeithaml, 1988) is further supported by the highly personal nature of goals (Zeithaml, 1988). Similarly, the dynamic nature of PV is also supported by goals as they are continually evolving over time (Yang *et al.*, 2002). Moreover, by keeping the emphasis on the relevance of outcome, rather than personal goals,

the proposed conceptualisation overcomes the complexity regarding the operationalisation of Woodruff (1997)'s value-hierarchy by negating the need to investigate personal goals directly.

It is also noted that while the measurement items of related dimensions (for instance, functional, convenience) can be placed under goal-relevance, they have only been indirectly used to measure goal-relevance. To date, since no study has captured goal-relevance explicitly, this thesis will endeavour to address this gap by incorporating goal-relevance as the fifth PERVAL scale dimension to capture the cognitive-internal component of PV. Thus, the operationalisation of PV is broadened by combining PERVAL and the proposed the 2x2 matrix model, and fulfilling research gap (**RG2**) using goal-relevance. Consecutively, and as observed in figure 11, a third theoretical proposition (P3) can be stated as:

P3: Goal-relevance captures cognitive-internal dimension and is thus integrated with PERVAL scale as the fifth dimension.

By explicitly exploring the importance of goal-relevance as a cognitive-internal dimension, the scope of PV construct is extended. Moreover, by defining and emphasising the influence of accomplishing the end goal (of value-hierarchy chain) as goal-relevance, rather than including it implicitly in the process of PV assessments, the scope of PV is broadened.

	Cognitive	Affective
Internal	Goal-relevance	Emotion
External	Quality	Social

Figure 12: Proposed 2x2 matrix model.

2.4.6.4.4. The Proposed Operationalisation

The proposed conceptualisation (Figure 12) is operationalised using the extended PERVAL scale and is an integrated model in that it (1) comprises of the extended EVP model, following the benefit-cost approach. By integrating PERVAL, the proposed operationalisation overcame the limitations associated with the benefit-cost approach. That is, the proposed operationalisation accounts for the dynamic nature and the affective experiential aspects of PV; and (2) the means-end approach balances the shortcomings of both benefit-cost and experiential approaches, such as overlooking how customers assign different weights to different consequences based on their end-goal.

The resultant 2x2 matrix model (Figure 12) is an integrated model. More importantly, improved conceptual clarity results from the addition of Goal-relevance as another value dimension. This adds to the granularity and idiosyncrasy of proposed 2x2 matrix, providing greater simplicity of operationalisation than previous conceptualisations.

2.4.7. The Proposed Conceptualization: a summation (dimensions, abstraction and model taxonomy)

Zauner *et al.* (2015, p. 13) argued that "should scholars come up with any other new empirical result in the field of customer perceived value research, there should always be an accompanying critical discussion or problematization of the conceptual understanding of the construct of perceived value, its dimensionality, and model taxonomy, and particularly how the new findings may refine, alter, or challenge our current understanding of value theory in marketing and consumer behavior". Thus, this section will focus on summarising the proposed conceptualisation and operationalisation in terms of dimensionality, abstraction and model taxonomy.

Klanac (2013) pointed out that previous studies have argued for integration of various approaches, yet there is a distinct lack of research in to the integrated PV models. In addressing the aforementioned gap, the proposed model capture the conceptual richness and complexity of PV by redefining and extending the existing scope of PV assessments by conceptualising PV as a function of internal-external elements of cognitive-affective components. Moreover, by comparing the proposed components to Holbrook (1999)'s typology of value, it was evident that the proposed value components (cognitive, affective, internal and external) have been acknowledged as higher order components of PV in extant literature. Thus, following the call for research by Zauner et al. (2015), the proposed conceptualisation reaffirms the multidimensionality of PV and will measure the construct on both levels, namely first order dimensions and higher order components.

By consolidating the extended EVP model to represent the higher order components,

the 2x2 matrix was established through comparing it to Holbrook (1999)'s typology (see sub-section 2.4.6.2, p. 64). A comparative analysis of existing first order dimensions led to the conclusion that the higher order components of this conceptualisation could be captured by the dimensions of existing scales leading to discussions on the multidimensionality of PV construct. To operationalise the proposed conceptualisation, this thesis focused on the PERVAL Scale; incorporating its experiential approach with the proposed 2x2 Matrix addressed the limitations of the benefits-cost approach, namely disregarding the dynamic nature of PV and the affective aspects of PV assessments.

By comparing each level of Woodruff (1997)'s value-hierarchy with PERVAL Scale (see Figure 11, p. 75), the proposed model could theoretically capture both, the attributes and consequences (emotional and social). However, as discussed in section 2.4.6.4, end-goal (the driving forces behind the consequences) is not captured by existing PERVAL scale and thus, rationales are then developed to integrate goals into the existing scale to fulfil the identified research gap. Although the literature implicitly pointed to goal-relevance, but to the best of author's knowledge, goal-relevance has not been explicitly included as PV dimension in the extant literature. Thus, following the proposed definition (see p. 41) and value-hierarchy means-end model (see sub-section 2.4.6.4.3, p. 82), it can be argued that it is imperative to explicitly incorporate goal-relevance as PV dimension for a more holistic model of PV assessments (P3). Furthermore, the contents of goal-relevance dimension have been discussed and linked to existing PV literature and appraisal theory with an emphasis on goal-congruence.

By integrating means-end approach into the proposed model, the resultant model should theoretically overcome certain drawbacks that were related to individual approaches, such as operationalisation of higher level of PV abstraction, capturing both, the positive (benefits) and negative (costs) aspects of PV evaluations, along with the proper emphasis on each level of value-hierarchy. Moreover, by addressing the 2x2 matrix as an integrated PV model, it is concluded that PV is an amalgamation of perception and experience, thereby embodying the multidimensional nature of PV. The proposed model exemplifies the complexity and conceptual richness of PV assessments and simultaneously provides operationalisation that can be efficiently used for empirical implementation. It also captures the dynamic nature of PV using goal-relevance to gain insight into how the end-goals influence PV assessments. Thus, the proposed model 2x2 matrix model is a more holistic framework that unites all three theoretically relatable approaches into an integrative model and will serve as the initial conceptual model for Phase 1 of empirical analysis.

The model taxonomy for the proposed model is discussed on the basis of four decision rules put forward by Lin et al. (2005) (see sub-section 2.4.5, Table 5, p. 51). For the first order dimensions, this thesis adapted PERVAL scale, which is considered as the reflective model (Zauner et al., 2015; Ruiz et al., 2008; Lin et al., 2005). Although goal-relevance has been used to extend the existing PERVAL scale, the existing PV literature has implicitly incorporated goal-relevance as a part of the functional dimension (see sub-section 2.4.6.4.1, p. 76). This line of reasoning implies that although this thesis has extended the PERVAL scale, the overall taxonomy remains reflective for the first order dimensions.

Considering the higher-order components of PV in the proposed 2x2 matrix model, the direction of causality is expected to be from construct to item (diagrammatically represented as arrows emitting from construct to its multi-dimension). Furthermore, the higher-order components of PV are operationalised as interrelated (Mathwick et al., 2001; Holbrook, 1999), satisfying another rule by (Lin et al., 2005). Consequently, it can be argued that the proposed higher-order conceptualisation should be considered as a reflective model.

2.5. Inter-variable Perspective

Gallarza et al. (2011, p. 183) stated that "understanding the salient antecedents and consequences of consumer value can probably be considered as the most fundamental prerequisite for sustainable competitive advantage". Thus, the inter-variable perspective focuses on investigating "how PV affects the behavioural outcomes". These behavioural outcomes, as revealed by extant literature, includes variables such as satisfaction, and more specifically loyalty (Gallarza *et al.*, 2017a), and can be explored by employing structural equations models (SEMs) for model evaluation (Gallarza *et al.*, 2016). The studies that focused on exploring this value-satisfaction-loyalty chain (Chen and Tsai, 2008; Chen, 2015; Gallarza *et al.*, 2016; Kim *et al.*, 2016; Xu *et al.*, 2015), is labelled as the 'inter-variable perspective (Gallarza *et al.*, 2017a; Gallarza and Gill-Saura, 2006) and marks an important point of consensus in consumer behaviour literature (Gallarza and Gil-Saura, 2008). Kim *et al.* (2016, p. 4) stated that "the relationship between customer satisfaction and behavioural loyalty are not well developed although several studies have investigated the relationship between customer satisfaction and attitudinal loyalty." Furthermore, there is a lack of consensus regarding the inter-relationship of satisfaction and loyalty (Anderson and Srinivasan, 2003; Oliver, 1999). Researchers argued that satisfaction might not have a significant direct effect on attitudinal loyalty (Curtis *et al.*, 2011; Neal, 1999). More recently,

Gallarza *et al.* (2011, p. 183) argued that although "the main flow of effects – as established by numerous studies – moves from perceived quality and perceived price to perceived value to satisfaction to loyalty. However, many studies have shown that stages can be skipped – as when perceived quality, perceived price, or perceived value influences loyalty directly." The current thesis concentrates on the inter-relationship of PV and loyalty, skipping any mediating or moderating variables.

As a multidimensional construct, loyalty has gained interest as an essential behavioural outcome for PV (Anderson and Srinivasan, 2003; Yang and Peterson, 2004). In fact, "Loyalty is a multidimensional construct that has been conceptualised and operationalised in many different ways in the marketing literature" (Gallarza and Gill-Saura, 2006, p. 441), and captures different outcomes, such as repurchase intention, word of mouth recommendation, willingness to purchase at higher prices (Gallarza *et al.*, 2017a). Thus, the primary objective for any strategic or marketing effort is usually associated with either developing, maintaining or enhancing loyalty (Dick and Basu, 1994).

In today's globalised market, researchers have found that managing loyalty has become one of the significant challenges (Dick and Basu, 1994), as "the literature shows that loyalty and profits are strongly linked to value created for customers. Customers are loyal to a company as long as it offers them superior value compared to its competitors" (Khalifa, 2004, p. 646). PV has been endemic to consumer behaviour and can methodologically explain different consumer behaviour constructs like product choice, purchase and repurchase intentions (Gallarza and Gill-Saura, 2006). Consequently, PV has been linked to customer loyalty in marketing and academic research (Dlačić and žabkar, 2012; Gallarza and Gill-Saura, 2006). This thesis focuses on the relationship between PV and loyalty for the inter-variable phase in the context of consumer goods market.

2.5.1. Loyalty

The concept of loyalty is traced back to the earliest overtures towards developing marketing discipline (Paavola, 2005), and has recently gained more attention owing to the growing relationship marketing paradigm (Grönroos, 1994). Dick and Basu (1994) are of the view that "the central thrust of the marketing activity of any firm should be viewed in terms of development, maintenance, or enhancement of consumer's loyalty towards its product or services" (Dick and Basu, 1994, p. 99). This statement exemplifies the importance of developing and assessing consumer's loyalty in order to provide a distinctive advantage for

the marketer. "Researchers agree that loyal customers are important for companies in today's competitive world" (Dlačić and žabkar, 2012, p. 504). Practitioners affirm that customer loyalty is crucial for developing profitable business (Giovanis and Athanasopoulou, 2017; Han *et al.*, 2008; Lewis and Soureli, 2006) and "is a paramount marketing objective" (Han *et al.*, 2008, p. 35). Despite this strategic importance, there is a lack of definitive progress in terms of defining, measuring and empirically validating the measurement scale of loyalty (El-Manstrly and Harrison, 2013). Harris and Goode (2004, p. 141) claim the work of Oliver (1997) constitutes the most comprehensive evaluation of the construct." Also, Oliver (1999, p. 34) defines loyalty as "a deeply held commitment to rebuy or re-patronise a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour." In other words, loyalty may be conceptualised as a favourable attitude towards a particular brand, manifested during repeat purchase behaviour. This definition captures not only the spirit of global customer loyalty but also emphasises the attitudinal as well as the behavioural components of customer loyalty. The attitudinal component of customer loyalty is further developed by partitioning it into cognitive and affective dimensions. It is expected that cognitive and affective PV dimensions will independently influence these cognitive and affective loyalties (further detailed in sub-section 3.3.2, p. 105).

Giovanis et al. (2015, p. 752) stated that "the benefits of customer loyalty have been widely discussed and include, increased repurchase volume, better acquisition rates from positive word-of-mouth communication, and lower sensitivity to price increases"(Giovanis *et al.*, 2015). Moreover, loyalty also tends to reduce the cost and capital investment requirements, improve cross-sales by customer endorsements and referrals by increasing favourable word of mouth communication (Giovanis *et al.*, 2015; Lewis and Soureli, 2006; Oliver, 1999). This thesis focuses on loyalty, more specifically the link between customer value and loyalty intentions, as called for by Zauner *et al.* (2015, p. 9).

2.5.1.1. Measuring Loyalty

Loyalty is conceptualised as a uni-dimensional and multi-dimensional construct (Dlačić and žabkar, 2012). The uni-dimensional (behavioural) view is criticised for lacking a conceptual basis that can focus on the micro (individual) data (Dick and Basu, 1994; El-Manstrly and Harrison, 2013) and is considered too simplistic as it overlooks the psychological (cognitive)

aspects of loyalty evaluations (El-Manstrly and Harrison, 2013). This led to the development of multi-dimensional models of loyalty.

Oliver (1997) proposes that loyalty can be considered as a dynamic and sequential four phase process incorporating cognitive, affective, conative, and action loyalty (El-Manstrly and Harrison, 2013). While studies found Oliver (1997)'s model to be compelling (El-Manstrly and Harrison, 2013, p. 1836), its empirical validation proved challenging due to lack of robust measurement items (El-Manstrly and Harrison, 2013).

These dimensions predominantly represent the attitudinal and behavioural components of loyalty (Dlačić and žabkar, 2012). This uni-dimensional categorisation is supported (Chiu *et al.*, 2013; Giovanis *et al.*, 2015; Lam *et al.*, 2004) and well-replicated (Han *et al.*, 2008). However, Jones and Taylor (2007) suggest that a uni-dimensional conceptualisation is inadequate in providing more significant insights for marketing practitioners. Subsequently, Worthington *et al.* (2009, p. 3), proposed that "all human behaviour is a combination of one or more of three different types of responses: cognitive responses (I think), emotive responses (I feel), and behavioural responses (I do)." Thus, extant literature boasts a third (cognitive loyalty), fourth (conative loyalty) and a fifth dimension (Dlačić and žabkar, 2012), leading toward a lack of consensus regarding the dimensions for loyalty (Jones and Taylor, 2007). Nonetheless, for the purposes of this thesis, the composite view of the tridimensional model (Figure 13) for loyalty is considered.

Traditionally, loyalty has been conceptualised using three main approaches (De Ruyter *et al.*, 1998; Jones and Taylor, 2007). These implied approaches propose loyalty is the result of consumer's behavioural propensity, attitudinal predilections or a combination of both (Worthington et al., 2009). Thus, this thesis follows the tri-dimensional conceptualisation of loyalty concept comprising of cognitive, affective and behavioural dimensions. This conceptualisation is further supported by Worthington et al. (2009, p. 18), who propose that a tridimensional model (Figure 13) of loyalty "allows a more fine-grained approach that explains the variety of consumer loyalty behaviour and facilitates more effective interventions." The tridimensional model captures the complexity of the concept and explores the actual customer behaviour instead of behavioural intentions (El-Manstrly and Harrison, 2013) and yet, it is sufficiently abstract to be applied in varying contexts.

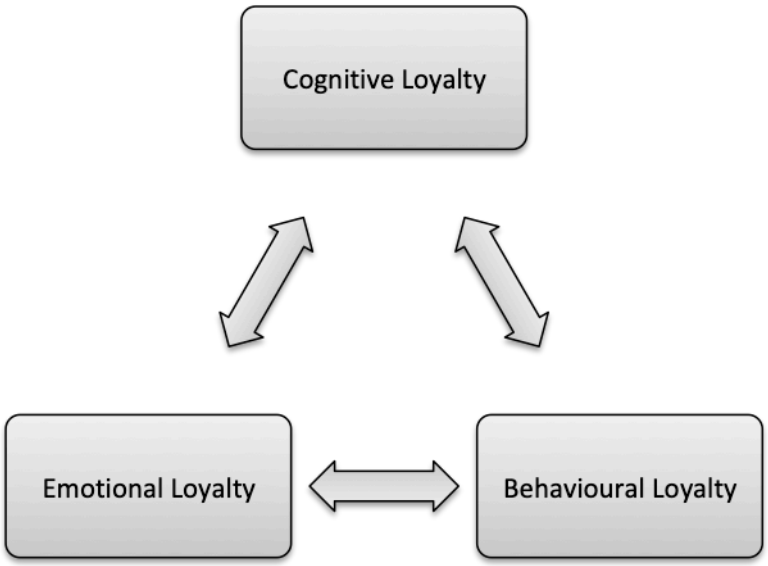


Figure 13: Tridimensional Model of Loyalty (Adapted from: Worthington ***et al.***, 2009)

2.5.1.2. Behavioural

Behavioural loyalty has been used as synonymous to repeat purchase behaviour to predict loyalty in past academic researches (Pura, 2005). Giovanis *et al.* (2015, p. 752) defined behavioural loyalty as "...consumers' repurchase behaviour or intention for a specific brand." Thus, the main focus remains at understanding "how" costumer makes the purchase. In other words, unlike attitudinal loyalty (that emphasises the intention for repurchase), behavioural loyalty focuses on the actual repurchasing behaviour (Giovanis and Athanasopoulou, 2017). This repurchase behaviour can be determined as "...actual purchase frequency as the proportion of occasions in which a specific brand is purchased as compared to the total number of purchased brands and/or the actual amount of purchase" Kim *et al.* (2016, p. 3). Thus, behavioural loyalty can be considered as the function of realistic data (a combination of prior behaviour and observed market shares) that may assist marketing managers in developing cost-effective strategies (Kim *et al.*, 2016). In other words, researchers have associated behavioural loyalty with "...aspects of repeat purchase behaviour such as the amount of purchases, frequency of purchase and amount of brand switching have been offered..." (Lewis and Soureli, 2006, p. 16). Consequently, it is concluded that behavioural loyalty captures a more realistic picture of customer's loyalty towards a product in comparison to its alternatives, enhancing the accuracy of predictions and aiding in cost-efficient marketing strategies (O'Malley, 1998).

Despite such advantages, behavioural loyalty is criticised (Lewis and Soureli, 2006).

Back (2001), disregards the importance of the consumer decision making process and Jacoby and Chestnut (1978 cited in Back and Parks, 2003, p. 420) add that behavioural loyalty fails to provide an arbitrary cutoff criteria; to assess the complexity and richness of brand loyalty and focusing on the outcome of behavior and not developing definitions that reach at the underlying causative factors. Due to the ambiguity surrounding behavioural loyalty assessment, a consumer can be classified as loyal by one method and disloyal by another (Morais *et al.*, 2003). Consequently, behavioural loyalty has been considered as "spurious" (Han *et al.*, 2008) and deficient in holistically capturing the loyalty construct without incorporating the attitude of the customer (Dick and Basu, 1994). Moreover, Giovanis *et al.* (2015, p. 752) stated that "it is not possible to observe behaviour in cross-sectional studies." While Giovanis and Athanasopoulou (2017, 810), argued that many cross-sectional studies consider only attitudinal loyalty as they were unable to confirm actual buying behaviour, in support of which Kim *et al.* (2016) stated that owing to the measurement limitations of behavioural loyalty, most previous researchers focused mainly on the attitudinal dimensions of loyalty. Behavioural loyalty is beyond the scope of this thesis as it follows a cross-sectional approach.

Additionally while loyalty intentions can assess behavioural loyalty, intentions are derived from attitudinal loyalty (Han *et al.*, 2008). In other words, behavioural loyalty can be considered as the "direct function of affective loyalty and an indirect function of cognitive loyalty" (Han *et al.*, 2008, p. 23). Furthermore, Russell-Bennett *et al.* (2013, p. 6) suggested that "behavioural loyalty is most relevant for low-involvement, routinised purchases and attitudinal loyalty is more relevant to high-involvement, hedonic, high-risk purchases". Bandyopadhyay and Martell (2007), supported this argument by stating that attitudinal loyalty can be the key influencing factor for behavioural loyalty in the high-involvement consumer goods market. In order to understand loyalty in the high-involvement consumer goods market, it is imperative to understand and measure consumer attitudes (Dick and Basu, 1994; Han *et al.*, 2008; Kim *et al.*, 2016; Russell-Bennett *et al.*, 2013). Since the proposed product for this thesis is a high-involvement consumer good, this thesis will concentrate on understanding and assessing attitudinal loyalty, specifically the cognitive and affective components of attitudinal loyalty.

2.5.1.3. Attitudinal

The term attitudinal loyalty was first introduced by (Guest, 1944), who proposed measuring the attitude towards a brand, using a single preference question. Later studies proposed attitudinal loyalty in terms of preferences or willingness to recommend (word-of-mouth), leading to the emergence of terms like cognitive and intentional loyalty (Jain *et al.*, 1987; Jarvis and Wilcox, 1976). Nevertheless, attitudinal loyalty has been traditionally conceptualised as part of commitment to product/service or to creating value for customer (Dlačić and žabkar, 2012) and is operationalised as positive customer's attitude towards the product (Dick and Basu, 1994; Dlačić and žabkar, 2012; Giovanis *et al.*, 2015). Previous studies have also used the term, loyalty, interchangeably with retention as "attitudinal loyalty is defined as the customer's willingness to re-purchase the brand regardless of any obstacles" (Giovanis and Athanasopoulou, 2017, 810). Here retention is merely not losing customers, and loyalty is the devotion of customers to a product or brand caused by an emotional bond. This implies that loyalty has a cognitive and affective components. Subsequently, Kim *et al.* (2016, p. 4) supported this claim by stating that "attitudinal loyalty is the customer's predisposition towards a brand, which is a function of psychological processes." They further explained that loyalty develops from positive affective attachments and beliefs of the customer, which usually lead to stronger re-purchase intentions. Thus, attitudinal loyalty focuses on the "why" of customer buying behaviour (Kim *et al.*, 2016) and strives to provide more significant insights into loyalty behaviour (Lewis and Soureli, 2006). Furthermore, according to Worthington *et al.* (2009), since attitude is composed of cognitive and affective components, attitudinal loyalty must follow the same categorisation. It is thus argued that attitudinal loyalty can be further subdivided into emotional or affective and cognitive loyalty (Worthington *et al.*, 2009). Consequently, although the existing literature has numerous measurement scales for measuring attitudinal loyalty (including purchase intention, commitment, preference) (Bennett and Rundle-Thiele, 2002), this thesis concentrates on the cognitive and affective aspects of loyalty to maintain scale comparability with the higher order components of PV.

2.5.1.3.1. The Cognitive Component

Cognitive loyalty is a reflection of a brand preference over other alternatives rather than behavioural tendencies (Oliver, 1999). Worthington *et al.* (2009, p. 4) supports Oliver (1999) and defins cognitive loyalty in terms of information (for example, price and features of the

product). El-Manstrly and Harrison (2013, p. 1835) expanded this definition and conceptualised cognitive loyalty as "the belief that an offering is superior to alternatives, based on available information". These beliefs are often formulated based on product information available to the customer (Worthington *et al.*, 2009). In other words, cognitive loyalty can be considered as the conscious evaluation of brand or product attributes and benefits associated with repurchase (Dlačić and žabkar, 2012). Following such conceptualisations, cognitive loyalty is usually operationalised as customer's first choice (Han *et al.*, 2008) or exclusive consideration (Dlačić and žabkar, 2012), price tolerance (Han *et al.*, 2008), and price insensitivity (Dlačić and žabkar, 2012). This implies that loyalty increases customer's willingness to pay higher for a product they consider better than any alternative available (Han *et al.*, 2008). However, cognitive loyal customers are highly susceptible to changes in available alternatives and counterarguments, as cognitive loyalty is comprised of beliefs towards the preferred product attributes, and not the brand itself, due to the lack of emotional relationship. Therefore, there is an increased possibility of switching depending upon the availability of superior alternative offerings with respect to the benefit-cost ratio (Sivakumar and Raj 1997). Cognitive loyalty is, therefore, reported to be the weaker form of loyalty (El-Manstrly and Harrison, 2013; Han *et al.*, 2008).

This thesis considers several scales for the operationalisation of cognitive loyalty. Although the scale used in this thesis is based on the work of Han *et al.* (2008), to increase the content validity of the scale, the three measurement items were adopted from Back and Parks (2003), El-Manstrly and Harrison (2013), Dlačić and žabkar (2012), McMullan and Gilmore (2003), Veloutsou (2015) that captures cognitive loyalty in terms of beliefs and opinions. The three items (see Table 12) represent the attributes of the product that are superior in comparison to its alternatives and are modified to fit the context of this thesis.

Author(s)/Year	***Measurement Item***
El-Manstrly and Harrison (2013); Dlačić and žabkar (2012); Han *et al.* (2008); McMullan and Gilmore (2003)	(This model) is my first choice when I want to buy a smartphone.
Back and Parks (2003); El-Manstrly and Harrison (2013); Han *et al.* (2008)	(This model) is better than any other smartphone.
Han *et al.* (2008); Dlačić and žabkar (2012); Veloutsou (2015)	I am willing to pay more to buy the latest (This model) than any other smartphone.

Table 12: Measurement items for Cognitive loyalty.

2.5.1.3.2. The Affective Component

Affective loyalty is considered stronger than cognitive loyalty as it incorporates hedonic evaluations with beliefs (Han *et al.*, 2008). Although, "...emotional loyalty is a term that is frequently used by marketing practitioners, to date, it is a construct that has been seldom used by academic researchers" (Worthington *et al.*, 2009, p. 2). Oliver (1997) stated that customer's affect based attitudes encoded deeper than cognition in the customer's mind, shapes the affective loyalty towards a specific brand. This line of reasoning postulates that cognition has to be combined with attitude and satisfaction to formulate affective loyalty. The formulation of favourable behavioural intentions or attitudes towards a brand results in affective loyalty (El-Manstrly and Harrison, 2013; Harris and Goode, 2004). In other words, affective loyalty can be defined in terms of positive feelings (such as liking or enjoyment) associated with repurchasing a product (El-Manstrly and Harrison, 2013; Oliver, 1999; Worthington *et al.*, 2009).

To operationalise affective loyalty, the scale used in this thesis is based on that of Han *et al.* (2008), however the three measurement items were adopted from Back and Parks (2003), El-Manstrly and Harrison (2013), Harris and Goode (2004) and McMullan and Gilmore (2003). The three items (see Table 13) represent the emotional aspect of loyalty and are modified to fit the context of this thesis.

Author(s)/Year	***Measurement Item***
Back and Parks (2003); Han *et al.* (2008); Harris and Goode (2004)	I like (This model) very much.
Han *et al.* (2008); McMullan and Gilmore (2003)	(This model) is more preferable to any other smartphones.
El-Manstrly and Harrison (2013); Han *et al.* (2008)	(This model) is the one that I appreciate the most.

Table 13: Measurement items for Affective loyalty.

2.5.2. Relationshipn between PV and Loyalty

PV has been strongly linked with loyalty (Chen and Hu, 2010; Chen and Tsai, 2008; Gallarza *et al.*, 2017a; Lewis and Soureli, 2006; Ruiz-Molina and Gil-Saura, 2008), either directly (Bolton and Drew, 1991; Parasuraman and Grewal, 2000), or as a moderator for satisfaction and loyalty or indirectly affect loyalty as a mediator (Anderson and Srinivasan, 2003; Gallarza *et al.*, 2017a). This relationship between PV and its marketing outcomes, has been frequently referred to as the 'value-satisfaction-loyalty (V-S-L) chain' (Gallarza *et al.*, 2019), and . The

literature review reveals that the first link in this V-S-L chain (PV and Satisfaction) has been over-researched (Gallarza *et al.*, 2017a). And, "further knowledge of the conceptual and methodological links among value and loyalty is still to come..." (Gallarza *et al.*, 2011, p. 187). Thus, in this study, the inter-variable perspective concentrates on analysing the direct effects of PV on loyalty.

Yang and Peterson (2004) empirically established the importance of PV in assessments and predictions of loyalty, across various contexts (for example, telecommunications, airline travel and retail). This argument is further supported by Floh *et al.* (2014), who suggest that higher levels of PV will result in higher loyalty. Moreover, PV can be considered as the most effective strategy for cultivating loyalty (El-Manstrly, 2016). Thus, it is argued that "...value and loyalty coexist for a mutual goal of building a close relationship with customers" (Gallarza *et al.*, 2011, p. 187). Nonetheless, the link between PV and loyalty still has some unexplored areas in terms of dual nature if both concepts. Specifically, in order to understand the interactions between PV and loyalty, it is imperative to consider the individual relative (comparable) cognitive-affective aspects rather than the overall assessment, which can lead to inaccurate findings regarding the relationships. In other words, it is imperative for managers to understand how these PV components (cognitive and affective) operate and relate to the cognitive-affective duality of loyalty. Hence, the inter-variable study focuses on understanding the relationships between the cognitive and affective components of PV and loyalty.

The direct influence of these PV components (cognitive-affective), on attitudinal loyalty (cognitive-affective components), have not yet received much attention in the marketing or consumer behaviour literature. More specifically, analysis of the available literature shows that there is a lack of research into how the cognitive-affective components of PV affects the agreed duality of loyalty (cognitive-affective). Here, behavioural loyalty (the remaining dimension of the tridimensional model of loyalty (Worthington *et al.*, 2009)) is excluded on the grounds of scale comparability. Thus, another research gap is proposed as follows.

RG3: There is a need to explore how cognitive and affective PV has a dual effect on loyalty.

Based on the proposed conceptualisations of each construct, the inter-relationships between cognitive-affective components of PV and loyalty are propositioned in sub-section 3.3.2 (p. 105). Moreover, concurrent to the recent development in loyalty operationalisation,

this thesis follows Han et al. (2008)'s measurement model. Specifically, the cognitive and affective components of loyalty are considered as attitudinal loyalty, in order to gauge the relationship between the cognitive/affective components of both PV and loyalty.

2.5.3. Section summary

The extant literature was reviewed throughout this section to follow the recent developments in loyalty conceptualisations. Although there is a lack of consensus regarding the dimensionality of loyalty, mainstream studies follows the tri-dimensional approach to loyalty. Thus, in accordance with the overarching question for inter-variable perspective, how PV affects loyalty? this thesis concentrates on the cognitive-affective aspects of attitudinal loyalty. By investigating the relationships between PV and loyalty, it is concluded that although previous studies focused on attitudinal loyalty, there is a distinct lack of research on how the specific components of attitudinal loyalty (cognitive-affective) interact with the cognitive-affective components of PV. This thesis concentrates on investigating this potentially complex relationship. To achieve this, previously employed measurement items for loyalty constructs were also reviewed, and the proposed operationalisation of attitudinal loyalty was explored.

2.6. Conclusion

The literature review achieved a threefold purpose of: (1) reviewing the different conceptualisations and operationalisations of PV to develop a more balanced model; (2) understanding the relationship between PV and its behavioural outcomes (specifically loyalty); and, (3) identifying potential research gaps. Based on Gallarza and Gill-Saura (2006) the literature was divided into two broad categories. Firstly, the intra-variable literature was reviewed to investigate the three approaches towards PV, leading to the proposed integrated definition. Next, the dimensionality of PV (following Zauner et al., 2015), based on the three PV conceptualisation (Uni-dimentional, multi-dimentional and higher-order components) and approaches (benefit-costs, means-end and experiential) were discussed. Based on the aforementioned diagnosis, next sub-section then strived to develop a PV conceptualisation and operationalisation using key theoretical models. Summarily, an integrated conceptualisation was developed by extending EVP model, that was further operationalised using PERVAL scale, presenting a robust foundation for the empirical investigations. The research gap identified during this process was then addressed by

incorporating goal-relevance into the 2x2 matrix model. The revised conceptualisation of value combines the strengths of previous definitions of value and all three approaches while overcoming their limitations, thus offering enhanced conceptual rigour.

Secondly, the inter-variables literature was reviewed to investigate the relationships between PV and loyalty. The concept of loyalty was examined, and tridimensional conceptualisation for loyalty was explored. The reasoning behind focusing on attitudinal loyalty in measuring and identifying the key drivers of customer loyalty were discussed. Following this, the relationship between PV and loyalty was explored, more specifically, the relationships between the higher-order cognitive-affective components of PV and attitudinal loyalty. Next chapter presents the conceptual models for this thesis.

Chapter 3. Conceptual Models

3.1. Chapter Overview

> *"That is what learning is. You suddenly understand something you've understood all your life, but in a new way"* (Beins and Beins, 2008, p. 97).

Drawn from the reviewed literature, a theoretical framework was proposed based on the Exclusive Value Principle model (EVP) (Groth, 1994) and operationalised using PERVAL scale (Sweeney and Soutar, 2001), addressing the need for integrated conceptualisation and operationalisation of PV (RG1). However, two more research gaps were identified, namely that the cognitive-affective component was missing in the proposed operationalisation (RG2), and social dimension was unbalanced necessitating the need for further extending the PERVAL scale (RG4). To address these gaps, goal-relevance was proposed as the cognitive-affective component of the 2x2 matrix model (see section 2.4.6.4, p. 74), leading to the modified and extended PERVAL scale and culminating in the proposed 2x2 matrix model of PV concept (see Figure 12, p. 83).

Following this discussion, Section 3.3.2 presents the Intra-variable Conceptual Model for PV, leading to the development of a theoretical proposition (P4). The Inter-variable Conceptual Model for PV and Loyalty focusing on the relationship between the cognitive-affective components of PV and cognitive-affective loyalty is presented in Section 3.3.2, and the subsequent sections 3.3.2.1 explore the underlying rationale propositions (P5 and P6) contained in the model. The constructs of both conceptual models and their proposed relationships, along with the development of the relevant theoretical propositions, are also discussed. A summary of the theoretical propositions is presented with respect to the aims and objectives of the thesis in Section 3.4. Sub-section 3.5 concludes the chapter.

3.2. Research Framework

The central aim of this study is to revisit and extend the existing conceptualisation (EVP model) of PV towards a more balanced 2x2 matrix model and investigate how well the existing PV operationalisation (PERVAL scale) fits into this model (See section 1.3.4, p. 22). Review of the existing literature (See section 2.3, p. 30), shows that the current PV literature lacks a robust conceptualisation of value upon which to base empirical endeavours. Consequently, to fill this research gap (RG1) (see sub-section 2.4.1, p. 57), the research framework for this thesis comprises of two conceptual models: The intra-variable Conceptual model for PV and The inter-variable Conceptual model for PV and loyalty.

The reasons for developing the Intra-variable Conceptual model are twofold. Firstly, PERVAL has long been proven a useful scale for assessing PV, and the applicability of the extended scale in studying the cognitive-affective and internal-external components is worthy of examination, given the lack of research in this area. Secondly, the model incorporates the construct of goal-relevance, to provide a more precise and in-depth understanding of customer's PV evaluations of the benefits regarding the utility of the product in achieving the desired goal.

The Inter-variable conceptual model for PV and loyalty explores the development of loyalty based on the PV derived from the cognitive and affective components. The reasons for proposing this model are twofold. Firstly, studying the interactions of PV and its behavioural outcome (attitudinal loyalty) from a cognitive-affective perspective may aid in more accurately predicting the consumer decision-making process. Secondly, a considerable amount of literature has focused on the drivers of customer loyalty and has highlighted PV as a significant driving force (Chen, 2015). However, scholars call for further investigation of the link between loyalty and PV (Zauner *et al.*, 2015). So, while modelling PV with goal-relevance dimension, the inter-variable conceptual model will also broaden the list of factors that predict the consumer's future loyalty decisions.

3.3. Proposed Models

3.3.1. Phase 1: The intra-variable Conceptual model for PV

"Considerable divergence of opinion exists on how to adequately conceptualise and measure [the] construct [of PV]" (Leroi-Werelds *et al.*, 2014, p. 430). Accordingly, an extended conceptual framework is proposed in this thesis based on the extended 2x2 matrix model derived in section 2.4.6 (p. 57). Consequently, theoretical foundation for this model is the amalgamation of EVP (Groth, 1995), the consumption value (Sheth *et al.*, 1991) and 'the value hierarchy model' by (Woodruff, 1997); operationalised using PERVAL (Sweeney and Soutar, 2001). The critical constructs drawn from EVP (Groth, 1994) are the cognitive and affective higher-order components, each of which is further sub-divided into internal and external components to formulate the 2x2 matrix model (P1). Subsequently, the PERVAL scale (Sweeney and Soutar, 2001) is integrated into the 2x2 matrix model to increase the inherent comprehensiveness of proposed model (P2), followed by integration of goal-relevance as the fifth dimension of PERVAL scale (P 3) (Figure 12, p. 83).

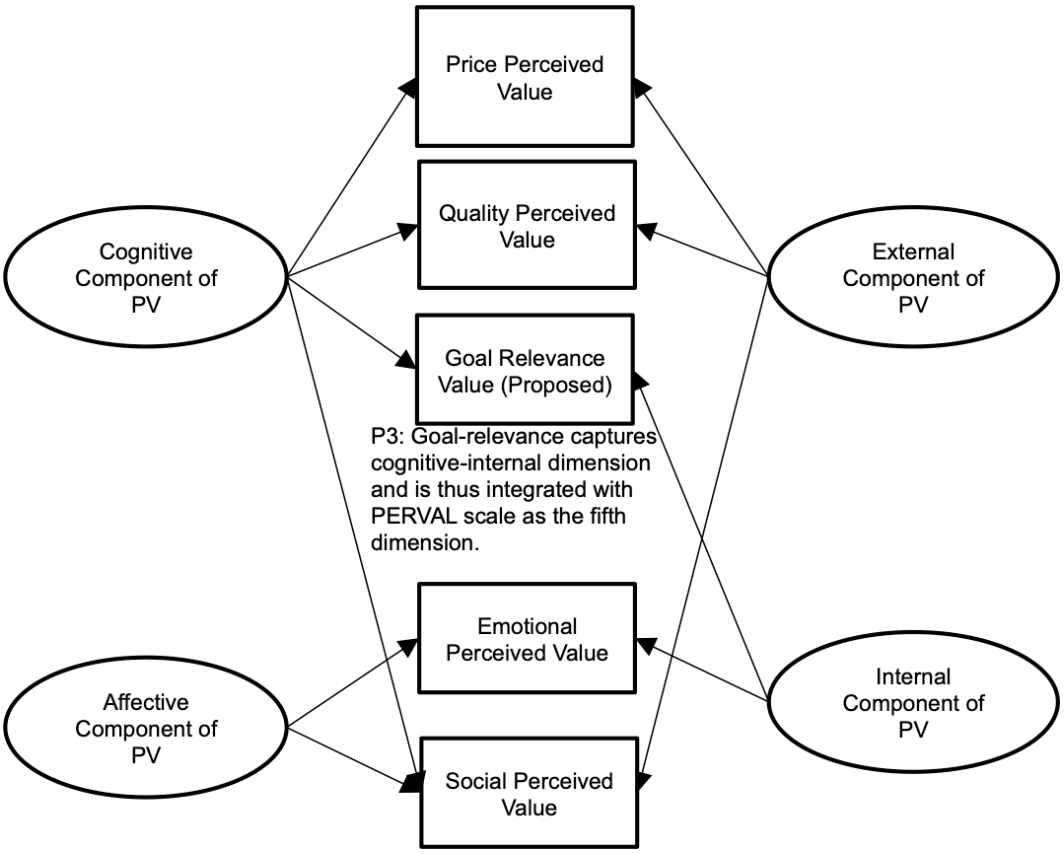


Figure 14: The Intra-variable Conceptual model for PV Conceptualisation and Operationalisation

The rationales for using PERVAL and for integrating Goal-relevance as the fifth dimension, along with the summary of the measurement items used for assessing each of these dimensions are expounded in following sub-section.

3.3.1.1. Why PERVAL?

As noted in section (see sub-section 2.4.4, p. 44), PV has mostly been construed as a multi-dimensional construct when developing a measurement scale for its assessment. Over the past 30 years, research on PV has emphasised the necessity of using a multi-dimensional model for PV assessments. The consumption value framework (Sheth *et al.*, 1991), serves as the foundation for many empirical adaptations of PV scales in various contexts. For example, Sweeney and Soutar (2001) operationalised the framework they developed a scale comprising of 19 measurement items grouped into four dimensions (emotional value, social

value, functional value 1: price/value for money and functional value 2: quality) in the context of product brands (eliminating epistemic and conditional value).

Similarly, Sánchez *et al.* (2006) adapted the PERVAL scale in the tourism context and developed the GLOVAL scale with 24 items grouped into six dimensions: the functional value of the travel agency (installations); a functional value of the contact person of the travel agency (professionalism); the functional value of the tourism package purchased (quality); the functional value of price; emotional value and social value. Similarly, Walsh *et al.* (2014) empirically replicated and reduced the PERVAL scale from 19 items to 12 and 8 items scales for better applicability in the retail market.

The PERVAL scale (Sweeney and Soutar, 2001) has been empirically tested, replicated and validated by various researchers (Sánchez *et al.*, 2006; Wang *et al.*, 2004b). However, it is evident that there is a lack of value measures with psychometric validity (Petrick, 2004; Sánchez *et al.*, 2006) (Section 2.4.7). While more comprehensive, compared to previous measurement scales, it remains that PERVAL explains only a little over half of the total variance of consumption value and product attributes. Statistical analyses in the previous studies indicates that the psychometric properties of the PERVAL scales could be improved substantially. Thus concluding that: (1) before to examining the relationship between the cognitive-affective components of PV and loyalty, there is a need to investigate goal-relevance as an additional dimension and its measurement items; and (2) after exploring the empirical evidence to support the extended PERVAL scale, there is a need to examine the reliability and validity of this scale in the context of this thesis. By adding goal-relevance and its measurement items, as required to maximise the convergent validity, the literature on value is conceptually and empirically enriched.

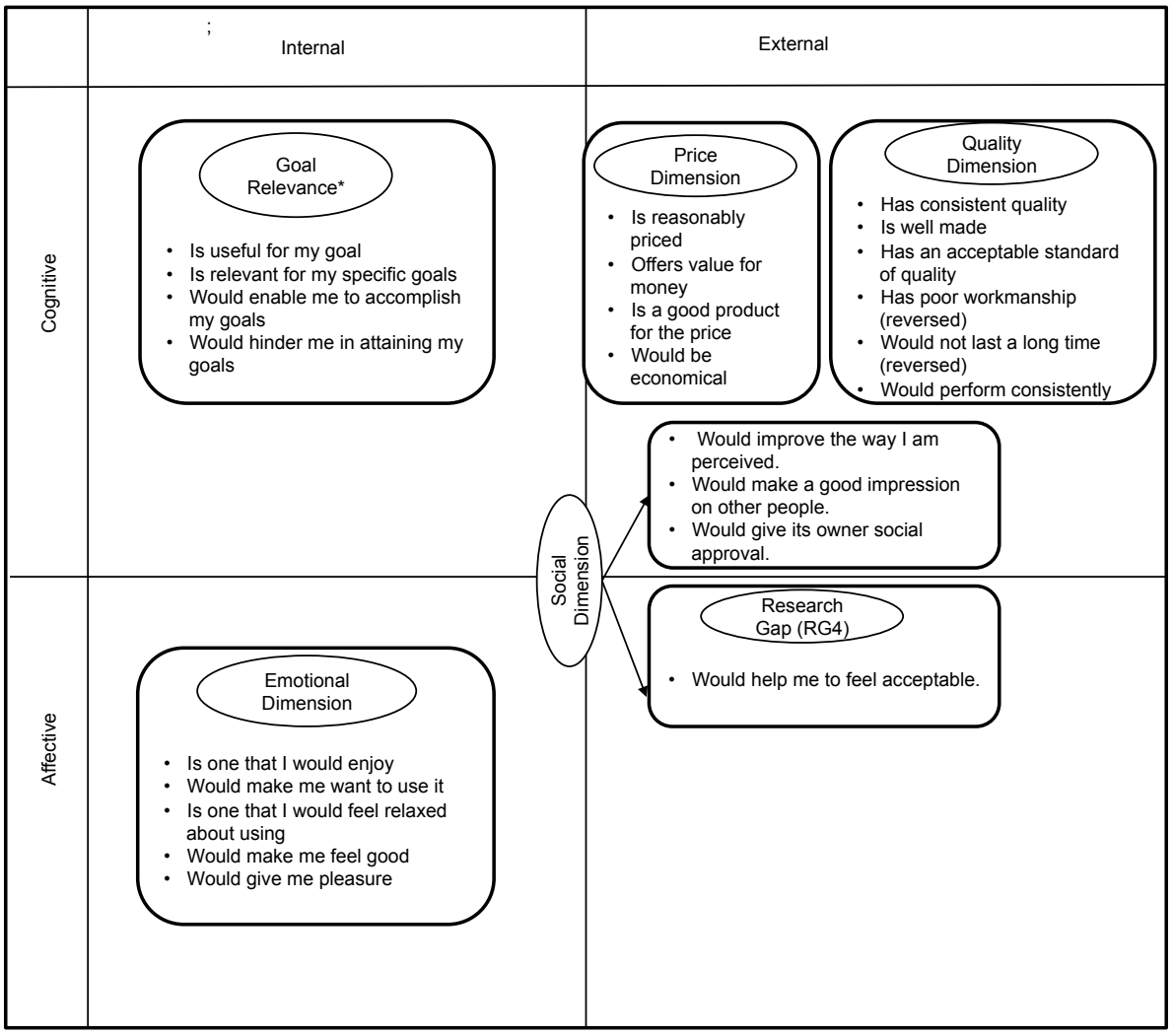
For this thesis, Sheth *et al.* (1991)'s "consumption value" as conceptualised and empirically tested by Sweeney and Soutar (2001), is implemented as it (1) provides a broader scope in understanding consumer perception of the benefit sought; (2) the simplicity of interpretation making PERVAL scale very appealing for managerial implementation; and, (3) the need for extending towards a more balanced scale.

3.3.1.2. Summary of measurement items

The dimensions of the extended PERVAL scale and measurement constructs are summarised in Table 14. However, while categorising these items under their respective dimensions (Figure 12, p. 83), it is noted that the social dimensions consist of three cognitive

and only one affective measurement item and hence a fourth research gap (RG4) is presented.

RG4: There is a need for extending the Social dimension of PERVAL scale by adding two more affective measurement items towards a more balanced dimension.



(* proposed dimension and measurement items)

Figure 15: Identifying Research Gap 4 in 2x2 matrix model

To address RG4 (Figure 15), previous studies based on Sheth *et al.* (1991) were reviewed again to search for two compatible affective, social measurement items that can be adapted into PERVAL scale without loss of content validity and reliability. The review revealed that Sweeney *et al.* (1996)'s study, concerning the early developmental stages of PERVAL scale, provides a summation of measurement items for generic functional,

emotional and social consumption value. Since these initial items were developed during the same project (development of PERVAL scale), this thesis argues that adopting another two affective, social dimensions (see Table 14) from Sweeney *et al.* (1996) will be appropriate. Thus, another research proposition **(**P4**)** is stated as follows.

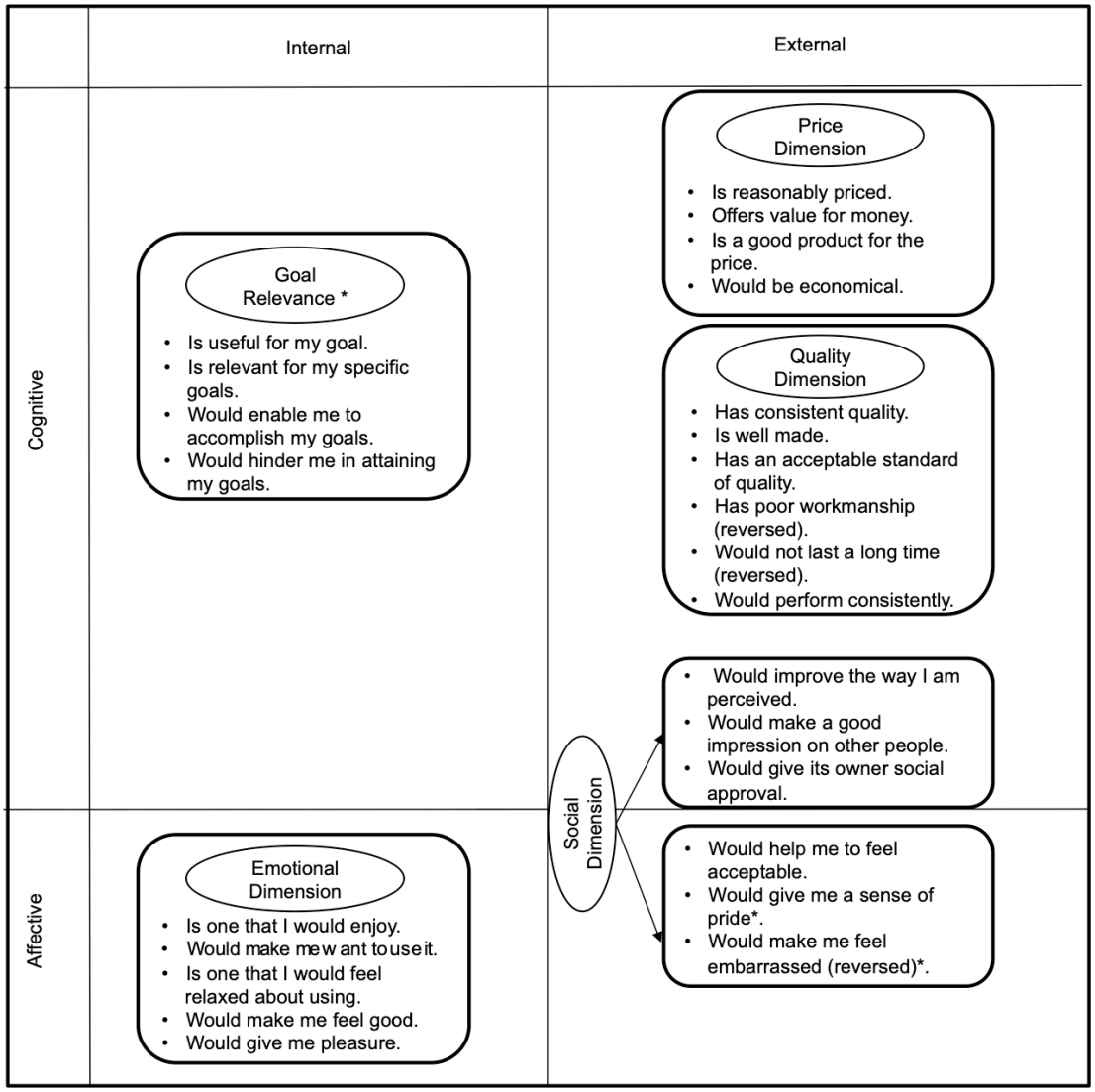
P4: An addition of two more measurement items are required to balance the Social dimension of PERVAL scale.

Measurement Items- Dimension 1: Quality	***Source***
(1) Has consistent quality. (2) Is well made. (3) Has an acceptable standard of quality. (4) Has poor workmanship (reversed). (5) Would not last a long time (reversed). (6) Would perform consistently.	Sweeney and Soutar (2001)
Measurement Items Dimension 2: Emotional	***Source***
(7) Is one that I would enjoy. (8) Would make me want to use it. (9) Is one that I would feel relaxed about using. (10) Would make me feel good. (11) Would give me pleasure.	Sweeney and Soutar (2001)
Measurement Items- Dimension 3: Price	***Source***
(12) Is reasonably priced. (13) Offers value for money. (14) Is a good product for the price. (15) Would be economical.	Sweeney and Soutar (2001)
Measurement Items- Dimension 4: Social	***Source***
(16) Would help me to feel acceptable. (17) Would improve the way I am perceived. (18) Would make a good impression on other people. (19) Would give its owner social approval.	Sweeney and Soutar (2001)
(20)Would give me sense of pride (proposed). (21) Would make me feel embarrassed (proposed, reversed).	Sweeney et al. (1996)
Measurement Items- Dimension 5: Goal-relevance (proposed)	***Source***
(22) Is useful for my goal.	Mohd-Any et al. (2015); Davis (1989); Lai et al. (2010); (Nyer 1997)
(23) Is relevant for my specific goals.	Scherer (1993)
(24) Would enable me to accomplish my goals.	Mohd-Any et al. (2015); Davis (1989); Singala (2006)

Measurement Items- Dimension 1: Quality	*Source*
(25) Would hinder me in attaining my goals (reversed).	Scherer (1993)

Table 14: Measurement Items of extended PERVAL scale.

Table 14 presents the measurement items of extended PERVAL scale for empirical analysis. After incorporating the proposed measurement items for the social dimension, Figure 16 presents the resultant 2x2 matrix model. Assuming that the results of Study 1.1 support 2x2 matrix model (including extended PERVAL scale), this model and the extended scale will be used as the PV assessment scale for Phase 2. After validating the extended PERVAL scale (using the empirical results of Phase 1 supporting the theoretical propositions presented in sections 5.2, p. 150), the relationship between the cognitive-affective components of PV and behavioural intentions in terms of attitudinal loyalty constructs will be examined through the development of a relevant set of theoretical propositions as outlined in section 3.3.2.1.



(* proposed dimension and measurement items)

Figure 16: The 2x2 matrix model

3.3.2. Phase 2: The Inter-variable Conceptual Model for PV and Loyalty

Model development for Phase 2 was influenced by the theoretical and the empirical investigations, that supported the 2x2 matrix model (including extended PERVAL scale). The theoretical framework developed (Figure 14, section 3.3.1, p. 100), formed the foundation for the assessment of loyalty. The results of the empirical analysis (for both, the expert survey and card-sorts technique, see section 5.2) supported and validated the theoretical propositions presented (P1, P2, P3 and P4) and hence the extended PERVAL scale. Consequently, Phase 2 employed the extended PERVAL scale (Table 14) for PV

assessments.

Moreover, as discussed in subsection (see sub-section 2.5.1.1, p. 88), traditionally, loyalty has been evaluated on attitudinal as well as the behavioural level (Dick and Basu, 1994). Attitudinal loyalty is further subdivided into two dimensions; emotional and cognitive (Härtel and Russell-Bennett, 2010). This formulated the basis for the tridimensional model of overall loyalty (see section 2.5.2) (Worthington *et al.*, 2009). This model and the relationship between these three dimensions (namely behavioural, emotional and cognitive) have caused much debate in the literature. The only point of consensus among scholars (Bandyopadhyay and Martell, 2007) is that behavioural loyalty is considered to be most relevant for low-involvement, routinised purchases and attitudinal loyalty is more relevant for high-involvement, hedonic, high-risk purchases (Giovanis and Athanasopoulou, 2017; Russell-Bennett *et al.*, 2007). Given the context of this thesis is the emerging devices market (high-involvement product setting), focusing on attitudinal loyalty is imperative. Thus, for better strategic intervention, Phase 2 focuses on attitudinal loyalty broken down into a 'feeling' component or affective loyalty and a 'thinking' component or cognitive loyalty (Russell-Bennett *et al.*, 2013).

Furthermore, to date, there has been no attempt made to illustrate an integrated framework which would capture multidimensional PV and the attitudinal components of loyalty. Gallarza and Gill-Saura (2006) adopted Holbrook (1996)'s value typology, combined it with the negative aspects of value following the traditional definition of trade-off by Zeithaml (1988) and explored the relations between consumer perceptual constructs such as PV, satisfaction and loyalty. Gounaris *et al.* (2007) conceptualised PV to be product value, procedural value, personnel value, emotional value, social value and perceived sacrifice. They empirically examined the role of the PV in influencing customer satisfaction, loyalty and behavioural intentions by proposing a model similar to Gallarza and Gill-Saura (2006). Also, Ruiz-Molina and Gil-Saura (2008) tried to examine the differential influence of the components of PV on customer attitude and customer loyalty across retail stores. None of these studies, however, examined the two-stage of attitudinal loyalty in relation to the cognitive and affective PV dimensions. Thus, the aim of Phase 2 is *to examine the effect of the cognitive-affective component of the extended PERVAL scale dimensions on its behavioural outcomes, that is, the cognitive-affective components of loyalty.* Figure 17 presents the proposed model for Phase 2. Fundamentally, Figure 16 presents the structural dimension of the effect of PV (the extended PERVAL dimensions) and its behavioural outcomes (cognitive and affective loyalty). The consumers affective PV dimensions (namely,

emotional and social) derived from the purchase of product lead to the development of feelings and attitudes (for instance, satisfaction) towards the product which in turn, affects attitudinal affective loyalty toward the product. Similarly, the cognitive assessments of goal-relevance, price, quality and factors of social value will influence cognitive loyalty.

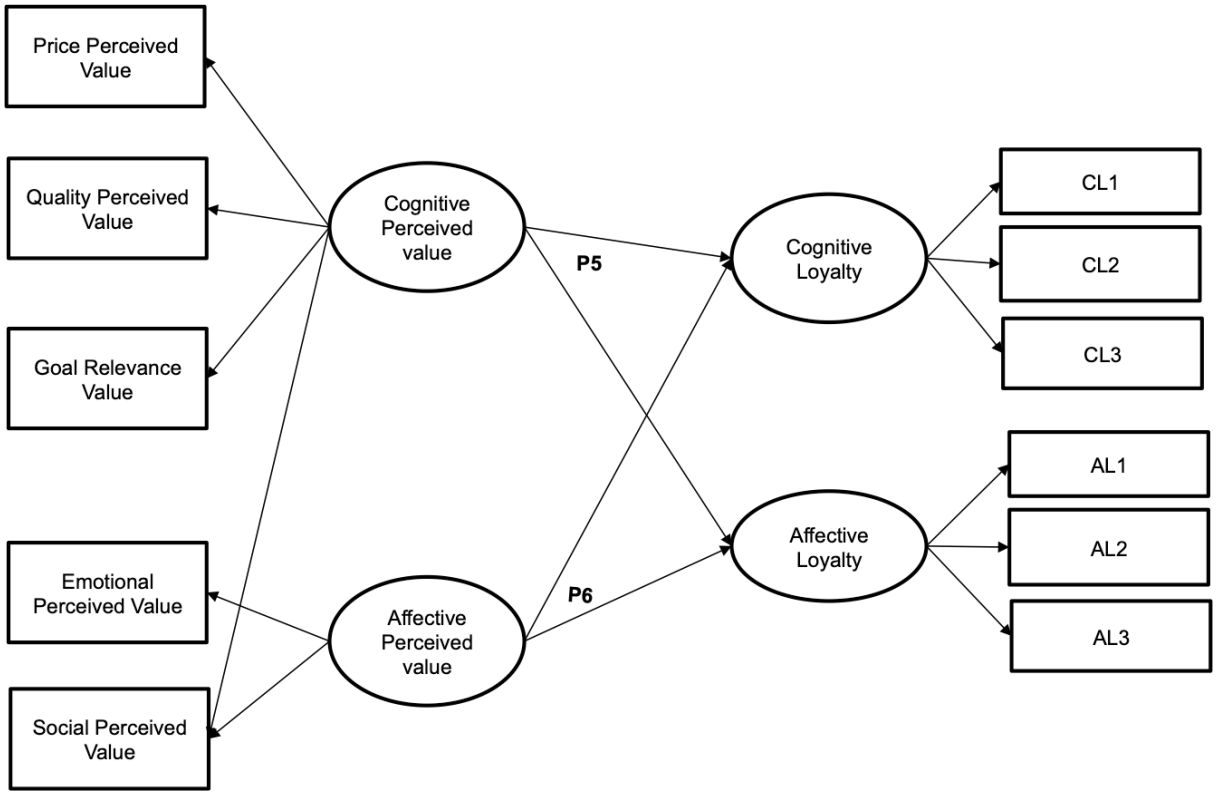


Figure 17: The Inter-variable Conceptual Model for PV and Loyalty

PERVAL is presented to the left of Figure 17, and attitudinal loyalty is to the right of Figure 17 with the uni-dimensional models and measurement items. The relationships between the constructs are highlighted using arrows, and respective propositions are presented accordingly. This model is suggestive of structural relationships among the variables that can be tested with the help of SEM. Moreover, it reflects the theoretical and structural dimensions showing the path structure that considers all covariances.

3.3.2.1. The relationship between Perceived Value and Loyalty

As discussed in sub-section 2.5.2 (p. 94), numerous authors have examined the relationship between PV and loyalty in various contexts (Chen and Hu, 2010; Chen and Tsai, 2008; Gallarza and Gill-Saura, 2006; Kim *et al.*, 2012; Ruiz-Molina and Gil-Saura, 2008; Yang *et al.*, 2004; Yeh *et al.*, 2016). Although PV scales used by these authors are varied, nonetheless, their findings revealed that PV dimensions have a positive impact on loyalty (Chen and Hu, 2010; Chen and Tsai, 2008; Roig *et al.*, 2009). The main PV dimensions empirically examined in these studies are quality (Cronin *et al.*, 2000; Giovanis *et al.*, 2015; Ruiz-Molina and Gil-Saura, 2008), price and emotional value (Wang *et al.*, 2004b), and social value (Gallarza and Gill-Saura, 2006; Wang *et al.*, 2004). Furthermore, these value dimensions relate closely to the description of PERVAL scale as proposed by (see sub-section 2.4.4.3, p. 48). The above dimensions can be classified as tapping into either the cognitive or affective component of PV. To this end, the quality and price dimensions formulate the cognitive part of PERVAL scale, along with goal-relevance dimension (Figure 16, p. 105). Similarly, the affective dimensions of PERVAL consist of social and emotional dimensions (Figure 16, p. 105) (Sweeney and Soutar, 2001). Thus, although previous studies have implicitly explored the relationship of PERVAL dimensions with PV, there is still a need for investigating the impact of proposed cognitive-affective components of PV on loyalty for addressing the RG3 (see sub-section 2.5.2, p. 94).

To explore the aforementioned RG3 and understand the relationship between PV components and loyalty, it it crucial to discern how PV generates loyalty. The extant consumer behaviour literature reveals that overall PV assessments drives the customer's choice behaviour towards generating loyalty (Woodruff, 1997; 1999). Neal (1998) also asserts that PV predicts the customer's choice behaviour which leads to loyalty. He further proposed that customers formulate a hierarchical consideration set of the available choices and tend to select a product based on of their PV evaluations. He further advocates that this process may be conscious (cognitive) or sub-conscious with some emotional (affective) elements. Therefore, the cognitive as well as the affective dimensions of PV can affect the loyalty measurements. As a consequence of this cognitive-affective split, a more meaningful insight might be gained by investigating the differential impact of cognitive-affective PV dimensions on the cognitive-affective components of loyalty.

Considering the differential impact of cognitive-affective split, Gallarza *et al.* (2019, p. 260) observed that 'additional cognitive information' affects loyalty (by enhancing satisfaction). Following this line of reasoning, it can be argued that augmenting the cognitive

component of PV will have a more substantial influence on cognitive loyalty in relation to affective loyalty. Therefore, the following theoretical **proposition (P5)** is presented:

P5: Cognitive components of PV have a more substantial influence on cognitive loyalty as compared to affective loyalty.

Furthermore, emotions have been proposed to be the antecedents of the affective stage of loyalty (Dick and Basu, 1994). These emotions are related to a heightened state of arousal and moods which relate to the emotional dimension of PERVAL scale as it is defined as "the utility derived from the feelings or affective states" (Sweeney and Soutar, 2001). Accordingly, it can be argued that the affective PV component will have a more substantial influence on the affective loyalty measurement as compared to cognitive loyalty. Therefore, another **proposition (P6)** is presented:

P6: Affective components of PV have a more substantial influence on affective loyalty as compared to cognitive loyalty.

Based on the theoretical propositions derived within the theoretical framework and conceptual models, research questions and the hypothesis are developed and proposed in subsequent chapters.

3.4. A Summary of The Theoretical Prepositions

This section summarises the aims and objectives about the theoretical propositions, as discussed in the literature review and conceptual framework.

Aims	*Objectives*	*Propositions*
1. To develop and empirically validate more holistic, integrated PV conceptualisation and its operationalise using existing theoretical frameworks for understanding and analysing the concept of PV.	1. To redefine and extend existing EVP theoretical framework towards more balanced higher-order abstraction.	P1: The cognitive component of PV is conceptualised using both internal and external elements.
	2. To operationalise proposed 2x2 matrix model using an integrated approach and incorporating PERVAL scale.	P2: The PERVAL scale dimensions fit in the 2x2 matrix framework.
	3. To test the convergent validity of the measurement items of PERVAL scale in terms of the cognitive/ affective - internal/ external components.	
	4. To add, recategorize and adjust those measurement items and/or dimensions as required to maximize the convergent validity.	P4: An addition of two more* measurement items is required to balance the Social dimension of PERVAL scale.
2. To explore the role of 'Goal-relevance' in extending the assessment of perceived value, with particular reference to whether and how to extend the PERVAL scale towards a more balanced scale.	5. To develop appropriate constructs and measurement items relating to the, yet unnamed, the cognitive-internal dimension of PV.	P3: Goal-relevance captures cognitive-internal dimension and thus be integrated into PERVAL scale as the fifth dimension.
	6. To empirically investigate whether the construct of 'Goal-relevance' can effectively capture the cognitive-internal dimension and hence be explicitly integrated within the PERVAL scale to achieve a more balanced scale.	
3. To empirically investigate the relationship between PV and loyalty concerning cognitive and affective duality.	7. To investigate the effect of cognitive value dimensions on cognitive loyalty and affective value dimensions on affective loyalty.	P5: Cognitive components of PV will influence cognitive loyalty.
		P6: Affective components of PV will influence affective loyalty.

* Would give me a sense of pride (proposed); and, Would make me feel embarrassed (proposed, reversed).

Table 15: Summary of Theoretical propositions

3.5. Conclusion

This chapter formulates and presents two conceptual models, namely the intra-variable Conceptual model for PV conceptualisation and operationalisation (Figure 14) and the inter-variable conceptual model for PV and Loyalty (Figure 17), to fill the four research gaps identified in this thesis (see sub-section 3.3.4, p. 109). The models are presented separately as they focus on both perspectives (intra and inter); investigating different aspects of cognitive and affective PV about their relationship with attitudinal loyalty. All measurement items used to assess the PV and loyalty constructs, along with various theoretical and empirical arguments governing the expected relationships between the constructs, have also been outlined. Before empirically verifying the proposed conceptual models and developing a hypothesis based on the theoretical propositions (P1 to P6), Chapter 4 elaborates on the research design implemented in this thesis.

Chapter 4. Methodology

4.1. Chapter Overview

This chapter is divided into three sections. Section 4.2 provides an overview of the methodological considerations for this thesis; with the particular focus on justifying the chosen multi-methods research design (mixed-method for Phase 1 and Quantitative for Phase 2). The section begins by clarifying the research philosophy and presents the underlying philosophy for the current thesis. Sub-section 4.2.2 elaborates on deduction, induction and abduction as the main research approaches. Subsequently, an in-depth discussion on methodologies (quantitative, qualitative and mixed methods) is presented. Figure 20 illustrates the research design for the current study and justifies adopting the multi-method approach. Sections 4.3 and 4.4 respectively discuss the methods adopted for Phase 1 and 2, including instrumentation, sampling and data analysis techniques.

4.2. Methodological considerations

Gorard (2013, p. 8) defined research design as "a way of organising a research project or programme from its inception in order to maximise the likelihood of generating evidence that provides a convincing answer to the research questions for a given level of resource". It covers all relevant issues ranging from theoretical and methodological choices, to sampling, data collection and analysis (Blaikie, 2009; Bryman and Bell, 2011; Eriksson and Kovalainen, 2015). Consequently, devising appropriate and well-defined research design is crucial for ensuring valid and meaningful research findings by retaining a strong focus on the research objectives (Ghauri and Grønhaug, 2005).

4.2.1. Philosophical Assumptions

Philosophical assumptions shape research design by determining the type of data required to address the research questions along with the most appropriate data collection and analysis techniques (Saunders *et al.*, 2019). Thus, a well-reasoned and systematic philosophical consideration may aid the researcher to identify appropriate and valid research designs (Creswell, 2009; Saunders *et al.*, 2019). Furthermore, an understanding of philosophy may also increase the effectiveness of research by enabling the researcher to adapt the overall research design in accordance with the knowledge structure or subjects (Saunders *et al.*, 2019).

The term 'research philosophy' pertains to the development of knowledge regarding the worldview of the scholar (Saunders *et al.*, 2019). Researchers have used various terms to describe research philosophy, such as worldview, paradigm, or broadly conceived research methodologies (Creswell, 2009; Mingers, 2001). A research philosophy of social sciences can be considered as a set of assumptions that encompasses three main key concepts: ontology (nature of reality and includes objectivism and subjectivity), epistemology (nature of current acceptable knowledge acquired of particular reality), and methodology (nature of how methods are used for gathering and analysing data) (Guba and Lincoln, 1994; Mingers, 2001; Saunders *et al.*, 2019). Many studies unified these three concepts into an umbrella term: paradigm (Mingers, 2001; Saunders *et al.*, 2019).

Extant literature showcases the varying number of research paradigms, however, "the actual number and their characterisation in terms of underlying dimensions differ between authors" (Mingers, 2001, p. 242). For example, Creswell (2009) defined four main philosophies of knowledge creation, known as post-positivism, constructivism, transformative, and pragmatism. Similarly, (Guba and Lincoln, 1994) proposed four main philosophies: post-positivism, positivism, constructivism and critical theory.

Yet, there is consistent support for at least two philosophies: positivist (empirical, analytical and objectivist) (Mingers, 2001; Saunders *et al.*, 2019) and interpretive (subjective and constructivist) (Harrison and Reilly, 2011; Mingers, 2001). Positivism (also known as post-positivist or empirical science) has been considered as a leading philosophy for more than 400 years (Guba and Lincoln, 1994). It represents the traditional or scientific form of research that supports a deterministic approach (Creswell, 2009). It relies on techniques of observation, experiments and measurement (Saunders *et al.*, 2019). It is also described as reductionistic owing to the fact that intent reduces the ideas into variables and adopts hypothetic-deductive methods to form a hypothesis and research questions to test any theory (Creswell, 2009). Moreover, positivist may also use qualitative methods that follow the same order; starting with theory, formulating a hypothesis and then testing the said hypothesis (Porta and Keating, 2008). Thus, positivist philosophy follows the objective view of reality, aiming to create, measure or explain the knowledge that can be generalised across people, time and place (Harrison and Reilly, 2011, p. 8). The main advantages of implementing positivist paradigm revolve around how quickly and economically, the concepts can be operationalised using questionnaire items. Further, the survey instrument can be easily adapted to different contexts to produce more generalisable results (Bryman, 1984).

The interpretivist paradigm focuses on understanding behaviour rather than predicting it (Harrison and Reilly, 2011). However, several recent studies propositioned and

supported another critical philosophy of pragmatism (Mingers, 2001). From an ontological perspective, pragmatism lies between positivist and constructivism, driven mainly by the research questions and the anticipated consequences (Harrison and Reilly, 2011). According to Patton (2002, p. 72) "being pragmatic allows one to eschew methodological orthodoxy in the factor of methodological appropriateness as the primary criterion for judging methodological quality, recognising that different methods are appropriate for different situations". Thus, pragmatism includes the use of induction (for discovering patterns), deduction (for testing hypothesis) and abduction (for uncovering and relying on most appropriate methods for one's results) (Harrison and Reilly, 2011).

Since the main objective of Phase 2 is to seek confirmation of underlying relationships on the basis of existing theory and validated propositions, this phase adopts positivism (deductive approach). Additionally, the objectives of phase 2 corroborate in the development of hypothesis, using the validated propositions (P1, P2, P3, P4, P5 and P6), concerning the effect of PV on loyalty. These hypotheses need further empirical verification to validate or refute the cause and effect relationship, thus justifying the positivist standpoint. Subsection 4.2.2 discusses the available research approaches and their applicability within the field of study.

4.2.2. Approaches

Research approaches offer specific direction for the process in designing research design (Creswell, 2009). They provide the logic or set of procedures for answering the 'what and why' of the research questions (Blaikie, 2009). There are three main approaches widely used towards the research projects: deduction, induction and abduction. However, all these approaches are dependent on the research questions and the nature of the association between research and theory (Saunders *et al.*, 2019). Moreover, the personal experience and targeted sample population also play a role in selecting the research approach (Creswell, 2009).

Deduction employs theory as a starting point to develop hypothesis that can be tested using appropriate research design (Saunders *et al.*, 2019). According to Hart (2018, p. 122), "It is commonly a statement or theory whose truth or falsity is known in advance of experience or observation (a priori: prior to experience) – referring to instances of reasoning in which the conclusion follows from the premises. Deduction (or inference) can proceed from the general to particular, general to general and particular to particular." (Saunders *et al.*, 2019) devised the following six sequential stages for deductive research:

(1) Propose a hypothesis or a set of hypothesis forming a theory.

(2) Based on extant literature, deduce testable propositions.

(3) Examine these propositions by comparing them with existing theories, to confirm if they offer better insights.

(4) Test the operational hypothesis by collecting and analysing the data.

(5) Examine the outcome of this inquiry, either confirming the theory or indicating the need for modification.

(6) Modify the proposed theory based on results, if necessary.

Thus, deductive approach explains the causal relationships between constructs under investigation by empirically testing the hypothesis (Saunders *et al.*, 2019).

Conversely, the induction approach depends on the analysis of collected data to develop a theory (Saunders *et al.*, 2019). This research process initiates from empirical material, focusing on generating theory (Bryman, 2007) from data, unlike deduction (Saunders *et al.*, 2019). Hart (2018, p. 123) stated that induction is "...commonly a statement whose truth or falsity is made more probable by the accumulation of confirming evidence (a posteriori: based on experience) – referring to instances of reasoning in which statements are made about a phenomenon based on observation of instances of that phenomenon. It consists in arguing that because all instances of a so far observed have the property of b, all further observations of a will also have the property of b." Lastly, the abductive approach develops the research design through an iterative process of deduction and induction (Patton, 2002). Thus, in line with pragmatic philosophy, abductive approach lies somewhere between the induction and deduction continuum (Patton, 2002).

Phase 1 of this thesis aims to explore the inter-dependency of PV components and dimensions, leading to the necessity of employing two studies (quantitative and qualitative). Thus, the abductive approach is suited for phase 1. However, phase 2 aims to establish and explain the impact of PV on loyalty by testing the hypothesis, indicating a need for adopting the deductive approach.

4.2.3. Methodologies

Research methods are usually well-defined sequences of operations that yield predictable results (Mingers, 2001). Mingers (2001, p. 242) defined methodology as "a structured set of guidelines or activities to assist in generating valid and reliable research results." Thus, research methodology is an umbrella term that encompasses the form of data collection, data analysis and the interpretations of the results achieved for the study (Bryman, 2007; Creswell, 2009). There are three main types of research methodologies: qualitative,

quantitative and mixed methods. Each methodology offers a varied starting point, different set of steps and concluding points (Blaikie, 2009). Therefore, the selection of any particular methodology depends on the research problem. Although researchers have identified that, all said methods have certain limitations and using a combination of methods may overcome this problem, the decision for selecting any methodology is based on the philosophical assumptions of the thesis.

Quantitative	***Qualitative***	***Mixed Methods***
• Experimental Designs • Non- Experimental design such as surveys	• Narrative Research • Phenomenology • Ethnographies • Grounded Theory Studies • Case Study	• Sequential • Concurrent • Transformative

Figure 18: Methodological Approaches (Adapted from: Creswell, 2009)

Thus, it can be argued that, the research design outlines the procedure for every research activity by guiding the selection of sources and types of data collection based on various factors like time, cost and hypothesis, to solve the research problem (Blumberg and Frank, 2014). In other words, the research design is a detailed blueprint of any study developed by the integrating chosen research philosophy, strategies and the methods. Thus, final research design can be considered as quantitative, quantitative or mixed, based on the choice of approach used (Creswell, 2014). The following table (16) summarises various research designs available:

	Quantitative	***Qualitative***	***Mixed Methods***
Research Philosophy	Postpositivist	Constructivist/ transformative	Pragmatic
Research Strategies	Surveys and experiments	Phenomenology, grounded theory, ethnography, case study and narrative	Sequential, concurrent and transformative

	Quantitative	*Qualitative*	*Mixed Methods*
Research Design	Experimental designs	Narrative research	Convergent
		Phenomenology	Explanatory sequential
	Nonexperimental designs, such as surveys	Grounded theory	Exploratory sequential
		Ethnographies	Transformative, embedded, or multiphase
		Case study	
Research Methods	Pre-determined	Emerging methods	Both predetermined and emerging
	Instrument based closed ended questions, predetermined approaches, numeric data	Open-ended questions, emerging approaches, text or image data	Both open- and closed-ended questions
	Performance data, attitude data, observational data, and census data	Interview data, observation data, document data, and audio-visual data	Multiple forms of data drawing
	Statistical analysis	Text and image analysis	Statistical and text analysis

Table 16: Summary of Research designs (Source: Adapted from Creswell, 2014)

4.2.3.1. Quantitative vs. Qualitative vs. Mixed Methods

Quantitative research dominates the social sciences and business research literature (Eriksson and Kovalainen, 2015). The main aim of the quantitative methodology is to quantify the data collection and utilising the deductive approach for analysing the relationships between theory and research (Bryman and Bell, 2011). Due to the numerical nature of data collection, quantitative research is easier to replicate and generalise (Saunders *et al.*, 2019).

Moreover, quantitative methodology embodies positivist philosophy by focusing on objective reality (Bryman and Bell, 2011). Phase 2 embodies positivist philosophy and follows the deductive approach. Additionally, an online survey is used as the data collection method, and the primary data collection instrument is a self-administered web-questionnaire. The main focus of data collection in phase 2 remains on investigating and analysing the proposed hypothesis regarding causal relationships between PV and loyalty. More specifically, to investigate whether and how a change in either cognitive or affective components of PV will

produce a change in the cognitive or affective loyalty. Thus, a quantitative approach is better suited for achieving the objectives of phase 2.

A qualitative research methodology emphasises the inductive approach to generate theory (Bryman and Bell, 2011). Yet, due to a lack of generalisability and difficult replicability, qualitative methods are criticised in marketing literature (Bryman and Bell, 2011). This thesis employs qualitative methodology as a part of exploratory Phase 1. This methodology is further explored, with special attention towards card-sorts analysis, in sub-section 4.3.2

Management scholars have also identified and referred mixed methods using different terms, like the third research paradigm, the third methodological movement (Jogulu and Pansiri, 2011), blended research, integrative, multi-method, multiple methods, triangulated studies, ethnographic residual analysis and mixed research (Harrison and Reilly, 2011, p. 8). However, specifically in marketing, two main terms have been used: multi-methods and mixed methods. According to the Handbook of Mixed Methods Research, the main difference between these two terms is that the multi-method involves multiple types of qualitative and/or quantitative methods; whereas mixed methods represent mixing of the two types of data (Harrison and Reilly, 2011, p. 8).

The main arguments in favour of the multi-method methodology are twofold. Firstly, ontologically, the real world consists of plurality in structures leading to the generation of various events. However, each paradigm focuses only on one aspect of a situation, making multi-method research inevitable to capture the richness of the real world effectively. Secondly, research studies are generally considered to be a process with a finite number of phases. Each phase can pose different problems, but research methods tend to be tailored for a single discrete event. Thus, combining different methods becomes more appealing (Mingers, 2001). However, Harrison and Reilly (2011) highlighted the need to distinguish between studies that employ two types of data sets without integration (multi-method) and studies that integrate both data sets effectively (mixed method). With regards to the current study, phase 1 is an exploratory stage with two sequential studies (quan->qual), but phase 2 focuses only on Quantitative method (online survey) for confirmatory research. Thus, although both phases utilise multiple types of methods, yet, only phase 1 involves the mixing of the data obtained; thereby providing justification for employing "multi-method" approach for overall research.

Mixed methods research has increasingly gained popularity since the early 1990s in marketing literature (Creswell, 2009), as it allows the researchers to be "more flexible, integrative, and holistic in their investigative techniques, as they strive to address a range of complex research questions that arise" (Powell *et al.*, 2008, p. 306). Jogulu and Pansiri

(2011) also justified the advantages of using mixed methods to produce better research outcomes in management research. Johnson *et al.* (2007, p. 123) defined mixed methods research as "the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (for instance, use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purpose of breadth and depth of understanding and corroboration." This definition represents an amalgamation of statistical and thematic approaches, reducing the over-reliance on statistical data to explain subjective social occurrences (Jogulu and Pansiri, 2011). The incorporation of qualitative studies provide in-depth insights to generate plausible answers to social phenomena, yet a quantitative approach ensures the validity and reliability of the data (Jogulu and Pansiri, 2011). Such integration of methods can produce benefits such as redirecting studies based on initial results or adding questions to a revised questionnaire for a more systematic data collection (Harrison and Reilly, 2011). Despite such benefits, the mixed methods is employed specially in marketing management (Harrison and Reilly, 2011; Jogulu and Pansiri, 2011).

4.2.3.2. Mixed Methods for Phase 1: The Rationales

Bryman (2006) puts forth a number of rationals for conducting mixed method research (Table 17). The objective for phase 1 is to achieve construct validity for the proposed 2x2 matrix model. To achieve this objective, two studies were designed. Study 1.1 employs a quantitative expert survey to assess the interdependency of PV components and dimensions. However, following this quantitative stage, further 'explanation' is still needed with regard to the 'unexpected results' (Table 17) from study 1.1 (regarding social and emotional dimensions see section 5.2.1, p. 151). Thus, study 1.2 is proposed as a qualitative exercise (card-sorting) that will help in explaining and understanding the findings generated by stage 1. Consequently, Phase 1 follows two rationales proposed by (Bryman, 2006) (Table 17), resulting in a explanatory mixed methods design for phase 1

Rationale	*Description*	*Variant of Mixed Methods*
Completeness	Bringing together a more comprehensive account if both quantitative and qualitative research is employed.	Exploratory, explanatory, or concurrent
Confirm and discover	This entails using qualitative data to generate hypotheses and using quantitative research to test them within a single project.	Exploratory
Context	Qualitative providing contextual understanding coupled with either generalizable, externally valid findings or broad relationships among variables uncovered through a survey.	Exploratory or explanatory
Credibility	Employing both approaches enhances the integrity of findings.	Exploratory, explanatory, or concurrent
Different research questions	Quantitative and qualitative each answers different research questions.	Concurrent
Diversity of view	Combining researchers' and participants' perspectives through quantitative and qualitative research, respectively, and uncovering relationships between variables through quantitative research while also revealing meanings among research participants through qualitative research.	Concurrent or embedded
Explanation	One is used to help explain findings generated by the other.	Explanatory
Illustration	Qualitative to illustrate quantitative findings (putting "meat on the bones" of "dry" quantitative findings).	Explanatory
Instrument development	Qualitative is employed to develop questionnaire and scale items.	Exploratory
Offset	Combining strands offsets their weaknesses to draw on the strengths of both.	Concurrent

Rationale	*Description*	*Variant of Mixed Methods*
Process	Quantitative provides an account of structures in social life but qualitative provides sense of process.	Exploratory or explanatory
Sampling	One approach is used to facilitate the sampling of respondents or cases.	Exploratory or explanatory
Triangulation	Quantitative and qualitative combined to triangulate findings to be mutually corroborated.	Concurrent
Unexpected results	When one strand generates surprising results that can be understood by employing the other.	Explanatory or embedded
Utility	Among articles with an applied focus, the combining the two approaches will be more useful to practitioners and others.	Exploratory, explanatory, concurrent, or embedded

Table 17: Rationales for selecting Mixed Method (Adapted from: Harrison and Reilly, 2011).

4.2.3.3. Variants of Mixed methods

Figure 19 depicts the variants of mixed methods identified in the literature (Creswell, 2009). These methods can be segmented on the basis of equal or dominant weighting, as well as depending on the timing of conducting quantitative and qualitative studies (concurrently or sequential) (Harrison and Reilly, 2011; Jogulu and Pansiri, 2011). In the concurrent mixed methodology, both quantitative and qualitative data collection and analysis are performed simultaneously. However, if equal weight is assigned to both quantitative and qualitative method while merging the data during interpretations or analysis, it is termed as Convergence variant of concurrent mixed methodology (Harrison and Reilly, 2011).

	Concurrent Timing	Sequential Timing
Equal Weighting	Convergence (QUAL + QUAN)	Exploratory (QUAL→QUAN) Explanatory (QUAN→QUAL)
Dominant weighting	Embedded (either QUAL + quan, or QUAN + qual)	Exploratory or Embedded (either QUAL→quan, or quan→QUAL) Explanatory or Embedded (either QUAN→qual, or qual→QUAN)

Notes: "Qual" stands for qualitative
"quan" stands for quantitative
" + " stands for concurrent
" → " stands for sequential
capital letters – "QUAL" and "QUAN" denote high priority
lower case letters – "qual" and "quan" denote lower priority

Figure 19: Variants of Mixed Methods

Conversely, sequential approach lets the researchers perform one study at a time (either quantitative or qualitative), where the second phase of research aids in explaining and interpreting the findings of the first phase. However, it should be noted that, if the qualitative study is performed first (or is assigned higher weight), then the resultant methodology is termed as Exploratory sequential mixed methods (Harrison and Reilly, 2011). Such

methodology is preferred for instrument development as it connects the data between both phases (Harrison and Reilly, 2011). Assuming that a quantitative study is initially performed or given more weightage, the resultant methodology is referred as Explanatory sequential mixed methods, which enable researchers to develop follow-up explanations (Harrison and Reilly, 2011). Whereas unequal weight for either method of data collection (quantitative or quantitative) results in an embedded variant of concurrent or sequential mixed methods (Harrison and Reilly, 2011). Given the objectives of this thesis, Phase 1 is further divided into two studies (quantitative and qualitative), and thus implementing a mixed method design. Furthermore, quantitative data collection (using expert survey) is followed by qualitative (card sorts) exercise, leading towards the explanatory sequential variant of mixed methods for Phase 1.

4.2.4. The Chosen Research Design

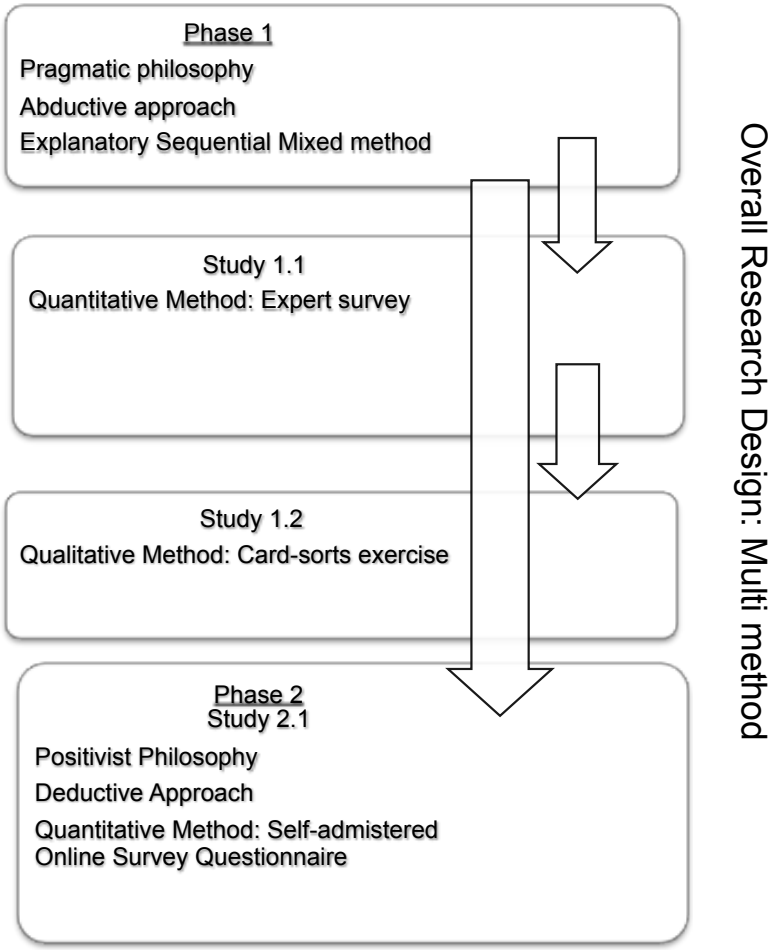


Figure 20: The Research Design

Figure 20 depicts the research design for this study. Following sub-sections will explore the methodologies employed in each phase of this thesis.

- ***Phase 1 (Explanatory sequential mixed method***): The primary aim of Phase 1 is to enrich the PV literature by revisiting the EVP conceptualisation of PV and extending it to the 2x2 matrix model. In order to establish the content validity of the extended PERVAL scale (after integrating goal-relevance) and to investigate the extent to which it fits in 2x2 matrix model, an expert survey (study 1.1) was conducted following the positivist philosophy. The results of this expert survey reveal that there are discrepancies regarding the aforementioned fit. To explore these discrepancies, a qualitative approach was employed: namely card-sorts. Study 1.2, the technique of card-sorts was selected based on the critical review of significant knowledge elicitation techniques (see section 4.3.2.2). The main aim of this study was to explore and verify the construct and convergent validity of the measurement items. The outcome of study 1.2 (card-sorting) resulted in the validation of proposed the 2x2 matrix model of PV. Thus, this qualitative study 1.2 served the explanatory purpose for selecting mixed methods to explain the unexpected results of quantitative study 1.1. Thereafter, the studies research design implement a quantitative phase.

- ***Phase 2 (Quantitative*)**: To address the second research aim of providing an accurate generalizable overview of the relationship between the cognitive/affective components of loyalty and PV, empirical data was collected to statistically analyses the proposed hypothesis. Thus, this phase extended the breadth of enquiry from just classifying the PV measurement items into cognitive/affective and internal/external (to validating the extended 2x2 matrix model), to understanding the effect of cognitive-affective PV dimensions on the cognitive-affective loyalty dimensions. Therefore, this thesis followed both, mixed method (phase 1) and quantitative method (phase2), leading towards a 'Multi-method approach' with slightly more emphasis on Quantitative than qualitative (quan -> qual -> QUAN) (Harrison and Reilly, 2011). Sections 4.3 and 4.4 elaborates on the development of instrumentation, sampling and data analysis techniques for both phases.

4.3. Phase 1: Exploratory Phase

The objective of investigating first and higher order dimensions is to explore the interdependency of PV components and dimensions. In other words, the focus remains on exploring and analysing how well the extended PERVAL scale fits into the proposed 2x2 matrix model (Figure 16, p. 105). This section begins with outlining the sampling process and survey instrument for study 1.1. Subsection 4.3.2.2 explores justification for selecting a card-sorting exercise, followed by sampling and instrumentation for the exploratory study 1.2. Sub-section 4.3.2.5 presents the procedure for implementing card-sorts, data collection, as well as data analysis techniques implemented. The cumulative findings from study 1.1 and 1.2 aid in addressing research propositions P1, P2, P3 and P4, and developing research hypothesis for phase 2.

4.3.1. Study 1.1: Expert Survey (Quan)

The purpose of this phase is to categorise each of the extended PV dimension's measurement items as tapping into cognitive/affective and internal/external components. As such, given that surveys are considered as ubiquitous (Hulland *et al.*, 2018), an expert survey, in the form of an online questionnaire was considered to be the appropriate method. Furthermore, a questionnaire would provide the advantages of higher response rate and speed at minimal cost (Ilieva *et al.*, 2002). Thus, an online questionnaire was administered to categorise the measurement items into cognitive/affective and internal/external components and to determine any unforeseen problems with the contents of the question, language ambiguity, sequencing of questions, the time needed to complete the questionnaire, and/or any other problem encountered by the respondents.

4.3.1.1. Sampling

Since this is an exploratory phase, and the objective does not involve the need to generalise the results, a non-probability convenience sampling is considered appropriate (Blumberg and Frank, 2014). Therefore, the target population for the expert survey mainly included faculties and PhD students from Bangor University. To increase the reliability of the results, a prerequisite for the respondent's selection was that they have experience in purchasing and using a smartphone. Thus, a convenience sample of 10 was employed of this stage.

4.3.1.2. Questionnaire design

Two expert surveys were designed using "Foureyes" (https://getfoureyes.com/) to determine whether, in the respondents' opinion, the measurement items tap into the cognitive or affective and internal or external components of PV. Each survey included three sections. ***Section 1*** covered questions in relation to the phone used, its important features and an open-ended question regarding the goal (see appendix for questionnaire). ***Section 2*** provided the guideline for decision criteria for each of the categories. These guidelines were developed using a set of theoretical assumptions regarding the nature of the affective/ cognitive and internal/external properties as formulated by examining the implicit conceptualisation underlying the procedures used in previous research. The purpose of these guidelines is to ensure the respondent's understanding of the main concepts.

The following explanations (Cognitive/Affective; and External/Internal), along with a couple of examples, were presented for the respondents to classify in the desired category. The survey was designed to relaunch the guideline for decision criteria screen if the respondents had problems in classifying the examples; and if no problems were encountered, the next part of the questionnaire was displayed.

- ***Cognitive and Affective:*** Affect implies emotions and feelings such as love, hate, joy, boredom, anxiety, shame and awe (Sánchez *et al.*, 2006). Concerning value related affective information, it is assumed that an item should illustrate the emotion associated with product assessments and the item should portray emotional responses of product consumption. However, cognition corresponds to information processing activities and is the rational component of consumption decisions (Sánchez *et al.*, 2006). In other words, the cognitive component involves the evaluation of the attributes of the product. In the context of the current study, following criteria are followed to identify items as tapping into the cognitive component: the item describes an overall evaluation of a product, and the item portrays the physical attributes of the product. In terms of affective components, following criteria were used: the item generates emotions like happiness, pride or fear and the item portrays the feelings associated with the product.
- ***External and Internal:*** Groth (1994) defined internal factors as "the factors independent of the opinions, influences, approval, suggestions of others"; that is, internal values imply that the individuals believe that he or she can control value fulfilment. Similarly, Groth (1994) also defined external factors as "the factors of importance because of opinions, influences, approval, suggestions, interaction, and interpersonal relations of or with others"; that is, external values emphasise fulfilment

beyond the control of the individual.

Section 3 of the survey used the extended PERVAL scale measurement items to assess how the respondents categorise the extended PEVAL scale dimensions as tapping into cognitive/affective and internal/external perspectives. The response format included a 5 point Likert Scale. The first survey had the following response structure: Cognitive (1), Slightly more cognitive than affective (2), Don't know (3), Slightly more affective than cognitive (4) and Affective (5). The final section of the survey questionnaire covered general background information, including age and gender. Similarly, the second survey had the following response structure: Internal (1), Slightly more internal than external (2), Don't know (3), Slightly more external than internal (4) and External (5). The survey links were emailed to the respondents.

4.3.2. Study 1.2: Card sorts analysis (Qual)

Study 1.1 (expert survey) resulted in the clear categorisation of cognitive-affective components, but not for the internal, external components. Hence, further testing was required to cross-validate the cognitive/affective components and validate the internal/ external components of the 2x2 matrix model for study 2.1 (Phase 2); thereby providing support for research propositions (P1 to P4). By verifying and incorporating the exploratory results of this stage, the 2x2 matrix model for PV gained validity and reliability. This stage also verified that all the measurement items are loaded appropriately on to the proposed matrix. The objectives of study 1.2 were:

- To test the convergent validity of the measurement items of PERVAL scale in terms of the cognitive/ affective - internal/external component (RO 3).
- To add, recategorize and adjust those measurement items and/or dimensions as required to maximize the convergent validity (RO 4).

Knowledge Elicitation (KE) techniques were considered that could potentially help in performing a sorting exercise. KE techniques can broadly be defined as the process of gathering information from any and all sources, without any restrictions (Harper *et al.*, 2003). The extant literature revealed numerous KE techniques including, but not limited to, Critical decision method, shadowing, limited information task and protocol analysis. Several authors proposed different classifications of these techniques (Cooke, 1994; Hoffman *et al.*, 1995; Hoffman, 1987; Shadbolt, 2005), however, later studies narrowed this classification in to following (Rugg and McGeorge, 2005) (See Appendix B for a detailed categorisation of techniques).

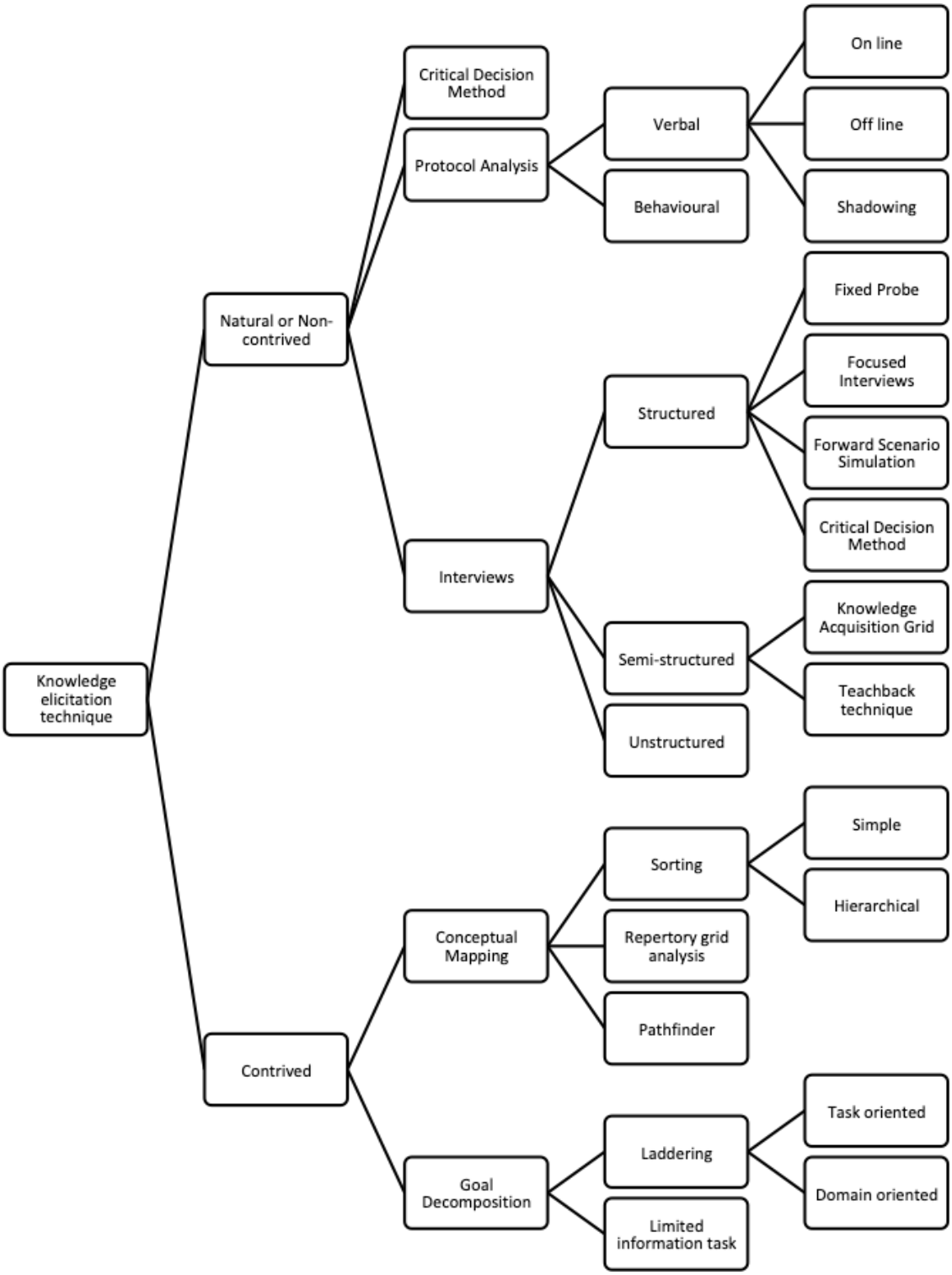


Figure 21: Classification of Knowledge Elicitation (KE) techniques (Adapted from: Shadbolt, 2005).

- ***Why card sorts exercise?***

Card sorts was considered as it is a "common usability technique that is often used to discover users' mental models" (Nielsen and Sano, 1995, p. 180). Card sorting is a

comprehensive and accessible technique for eliciting implicit knowledge, which enables the elicitor to understand the mental models employed by participants for organising and understanding objects/ideas (Nielsen and Sano, 1995). In other words, card sorting is a technique that elicits the categories people use to form mental models and investigate the commonality or differences employed to formulate these categories (Nawaz, 2012). Further research have proven the psychometric validation of card sorting. For instance, Cataldo *et al.* (1970) proposed card sorting maintains good reliability and validity when tested and; both, Fiore and Oser (2000) and Cataldo *et al.* (1970) explored and verified the construct validity of card sorting. Furthermore, Closed card-sorts technique has been reported to measure validity and reliability (Rugg and McGeorge, 2005). So, although some researchers still question the validity and reliability of a card sorting task, for the purpose of this study, the reliability and validity established by past research are sufficient (Harper *et al.*, 2003).

Furthermore, practical advantages, such as ease of administration, ability to sort larger sets of concepts and comfortability of participants in performing tasks (Weller and Romney, 1988), add credence to card sorts. The method provides a simple and appropriate means of eliciting information regarding how a set of concepts can be organised in to categorise. To fulfil the objective of study 1.2; to explore how well the measurement constructs load on one and only one of the components sets, it is deemed that a card-sorts exercise fits into the framework of this study. Sub-section 4.3.2.1 provides a summary of the card-sorting methods. A discussion of the variants of card-sort is presented in sub-section 4.3.2.2. Sub-sections 4.3.2.3 presents an overview of instrumentation, followed by sampling for study 1.2. Moreover, while it is imperative to understand how to select an appropriate technique for any task, and how to use it correctly, there is little to no guidance regarding this in previous literature. There are some partial guides regarding sorting methods (Rugg and McGeorge, 2005), but most of the studies using individual techniques assume previous knowledge of the technique being discussed. Thus, sub-sections 4.3.2.5 and 4.3.2.6 elaborates on the card-sorts procedures for implementation and recording the results respectively. Finally, sub-section 4.3.2.7 describes various data analysis techniques used with card sorting and proposes the method used for this study.

4.3.2.1. Previous studies using card sort exercises

Card sorting has been used as a formal method for KE (Barrett and Edwards, 1995) (see Table 18) to capture the knowledge of how participants categorise and sort concepts. The

end results of a sorting task usually enable the elicitor to pinpoint categories or classes within which the concepts can be classified. A sorting task involves a representation of concepts, in the form of objects, pictures or simple cards with a concept printed on them, which are sorted into relevant categories by experts (Rugg and McGeorge, 2005). Moreover, studies have utilised card sorts in various contexts, including diet assessment and food categorisation (Bostic *et al.*, 2016) and computer science (Faiks and Hyland, 2000). A sample of such studies are summarised in Table 18.

Author	***Aim***	***Domain***
Bostic *et al.* (2016)	Food preparation method classifications.	Food classification
Curran (2005)	To investigated podiatrists' perceptions of expert systems in relation to their perceptions of other diagnostics of diseases through card sorting.	Health industry
Deibel *et al.* (2005)	Introduce a new analysis technique based on a measure of similarity between card sorts.	Software Development
Evans *et al.* (2001)	A study on moderate to high test-retest reliabilities of three KE techniques: card sorting, pairwise relatedness rating, and concept mapping.	Theoretical
Faiks and Hyland (2000)	To understand how users would organize the contents of Gateway Help.	Website design
Harper *et al.* (2003)	Gather rules regarding lighting and develop Team Performance Laboratory–Knowledge Analysis Testing Suite (TPL–KATS-card sort) software.	Lighting for industrial inspection
Katsanos *et al.* (2008)	Study the clustering during the design.	Website design
Kodagoda (2012)	Comparing observations, in-depth interviews, think-aloud techniques and card-sorting methodologies.	Low Literacy Users
Kralisch *et al.* (2006)	A cross-country analysis of Malaysian, Russian, British and German students card sorts for university website.	Website design
Kurniawan and Zaphiris (2003)	To investigate, redesign and improve information architecture of health information website, an open card analysis performed.	Health industry website
Nawaz (2012)	A qualitative analysis of card sorting to see if individual users grouped items according to a thematic classification or a taxonomic classification.	University website classification
Niessen *et al.* (1999)	A study to analyse the cognitive structures aiding air traffic controllers to assess traffic situations.	Air traffic

Author	*Aim*	*Domain*
Olmsted-Hawala (2006)	Reorganising the information content in a Census Bureau website to aid the users' need when searching for information on Census Bureau website.	Website design
Rugg and McGeorge (1997)	Repeated single criterion card sorts analysis.	Theoretical
Satchwell (1997)	In order to assess the effectiveness of flow diagrams in training exercises for complex systems, a card-sorting task was performed.	Industrial education
Smith-Jentsch *et al.* (2001)	A card sort analysis was performed to assess the accuracy of sailor's sorting in regards to experience and rank.	Naval service personnel

Table 18: Summary of Sample Studies using Card-Sorting techniques.

The convergence of card-sorts was performed by (Evans *et al.*, 2001), who found that when different individual completed all three tasks (as required for their research, namely, card sorting, pairwise relatedness rating, and concept mapping), the correlations between outcomes was high, whereas when the same individual performed the same techniques, the correlation between the outcomes was low. Thus, card sorting is not only efficient at knowledge elicitation but it is also a better predictor of performance in comparison to any other techniques (Harper *et al.*, 2003).

4.3.2.2. Variants of Card sorts

The process of card sorting involves participants sorting a deck of cards into either a predetermined set of groups or into groups they create (Bostic *et al.*, 2016). The main variations occur principally with respect to either the object or the sorting procedure (Coxon, 1999). Some variants have been developed and used so extensively, that they almost qualify as separate techniques; they are considered as special cases (Coxon, 1999). These variants of card sorting are selected typically by the goals and interests of elicitors (Harper *et al.*, 2003) and are categorised based on objects, procedures or a special case (Coxon, 1999; Rugg and McGeorge, 1997).

In regards to card sorts based on objects, Coxon (1999) explained that object in a card sorting analysis invariably infers to a card with the name of the entity written or printed on it. Based on how this card is prepared and its contents, object sort is further subdivided in to four categories (see Figure 22), namely: Icon (card with picture, icon or sketch); Prediction (cards use 'descriptions of things' or 'properties asserted about objects in a domain'); Instantiation (double sorting, once with 'descriptions card' and then with 'name card'); and

Overlapping (allows overlap in categories) (Coxon, 1999). Given the objective of study 1.2, it can be argued that since the aim is to categorise measurement items into cognitive/affective and internal/external components, this study would follow the 'prediction' card-sorting method based on the object of the sorting process.

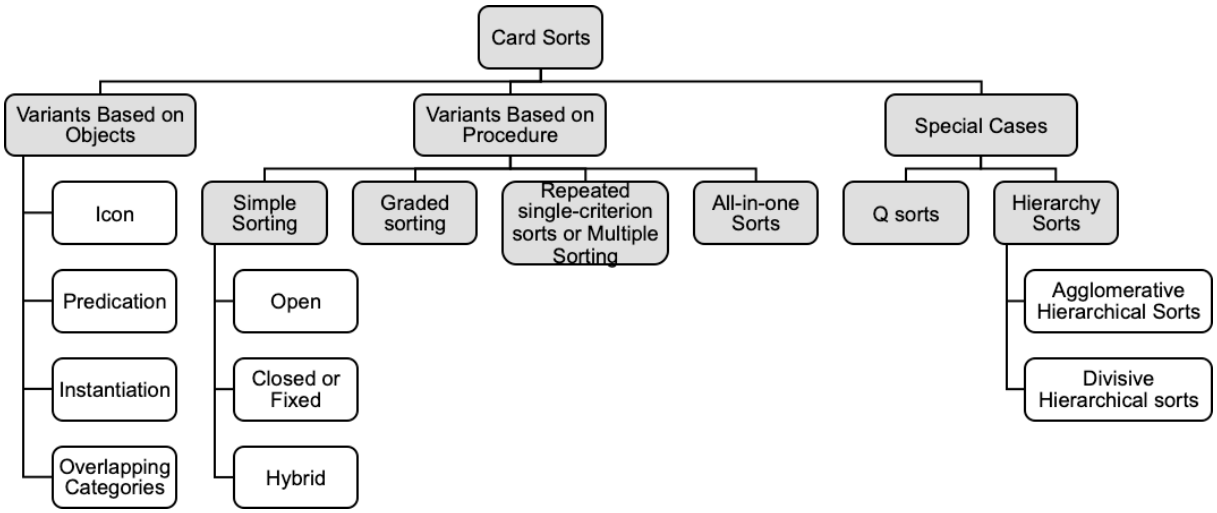


Figure 22: Variants of Card Sorts (Adapted from: Rugg and McGeorge (1997) and Coxon (1999))

Additionally, there are four main categories concerning card-sorts procedure (Coxon, 1999). A simple sort is the most common form of administration for sorting exercise. The process requires the elicitor to prepare a set of index cards (prepared with printed concepts) that can be sorted into several piles by the participants. The elicitor may ask the participants to label the piles and describe their categorisation criteria after the sorting is complete. Studies (see Figure 18, p. 131) have administered other variants of simple card-sorts by using different rules. For example, elicitor may place restrictions on the number of piles that a respondent can make or restrict users by requiring them to sort the cards in pre-defined categories. Based on these rules and restrictions, card-sorts can further be subdivided into three variants (see Figure 22), namely: open, closed and hybrid sort.

Open sorts are characterised by complete lack of restrictions on either the number of categories or number of piles (Rugg and McGeorge, 2005). Conversely, the exercise where the participants are restricted in some manner is known as closed sorts (Rugg and McGeorge, 2005). These restrictions may include pre-defined categories, a predetermined number of categories or restrictive criteria for sorting (Coxon, 1999). Both open and closed sort have been extensively utilised in extant literature (see Table 19).

Author	*Type of Card Sorts*	*Research Approach*	*Research Philosophy*	*Research Method*
Bostic *et al.* (2016)	One open sort and three closed sorts	Mixed Method	Pragmatic	Exploratory study: Descriptive statistics, cluster analysis
Cataldo *et al.* (1970)	Closed sort	Quantitative	Positivist	Deductive method: Closed-ended interview
Chaparro *et al.* (2008)	Open sorts	Mixed Method	Pragmatic	Triangulation
Faiks and Hyland (2000)	Open sorts	Qualitative	Constructivism	Dissimilarity matrix and cluster analysis
Fiore and Oser (2000)	Open sorts	Mixed Method	Pragmatic	Convergent Parallel
Hannah (2005)	Open and Closed sorts	Mixed Method	Pragmatic	Combined Conceptual Analysis and Constant Comparative Method Process
Harper *et al.* (2003)	Sorting	Qualitative	Constructivism	Software development
Kodagoda (2012)	Open sorts	Mixed Method	Constructivism	Emergent Themes Analysis
Kralisch *et al.* (2006)	Open sorts	Mixed Method	Pragmatic	Triangulation
Kurniawan and Zaphiris (2003)	Sorting: Open and Label sorts	Quantitative	Positivist	Exploratory study: Descriptive statistics, cluster analysis
Nawaz (2012)	Open Sorts	Quantitative	Positivist	Triangulation using edit distance, *AMM and **BMM
Olmsted-Hawala (2006)	Open sorts followed by closed sorts	Mixed Method	Pragmatic	Cluster analysis
Rugg and McGeorge (1997)	Item sorts, card sort and label sort	Mixed Method	Pragmatic	Convergent Parallel: Triangulation

*actual merge method (AMM)

**best merge method (BMM)

Table 19: A Summation of Card-Sorts Studies.

While there is little difference in validity between these variants of card sorting techniques, previous works lend support to the suggestion that different card sorting techniques will elicit different types of knowledge (Shadbolt and Smart, 2015). For instance, open sorts usually elicit knowledge that can help in the next stage of data collection (Bostic *et al.*, 2016), while data collected through closed sorts explains consumer's mental categorisations. In this study, the aim is to investigate and understand the categorisation of

PERVAL measurement items into pre-defined categories. Furthermore, the number of categories for each sorting exercise is pre-defined (2), the categories are also pre-defined (cognitive/affective or internal/external), and the criteria for sorting is also predetermined (provided to the respondents in the form of 'guidelines for decisions criteria'). Consequently, it is concluded that, closed card sorts will be an appropriate method for data collection.

Additionally, considering the objective of study 1.2, other sorting variants (for instance, hybrid, repeated single-criterion sorts or multiple sorts, including special sorting methods like Q sorts (see Appendix B for more details), are unsuitable due to a range of reasons including the complex theoretical presupposition to dependence on sophisticated statistical analysis (Rugg and McGeorge, 1997). However, the advantages of a quick and flexible process with ease of administration (Rugg and McGeorge, 2005) associated with closed sort, makes it a handy elicitation tool for exploring and understanding the categorisation proposed in this study (Nurmuliani *et al.*, 2004). Thus, after careful consideration, it is concluded that a 'closed sort' is appropriate for this study.

4.3.2.3. Card-Sorts Instrumentation

The process of card sorts involved a set of index cards, with a set of measurement items that needed to be categorised (Rugg and McGeorge, 1997). That is, all the measurement items of the extended PERVAL scale were numbered and then printed on a label and affixed on index cards. The resultant 25 cards (numbered on the reverse side) were shuffled and used for exercise.

4.3.2.4. Sampling

Sampling guidelines, in regards to closed card-sorts are varied and based on the availability of time and resources (Lantz *et al.*, 2019; Tullis and Wood, 2004). The sample size may vary from four (Nielsen and Sano, 1995; Nielsen, 2004) to as high as several hundred in the published literature (Wood and Wood, 2008). However, a minimum of 10 to 15 is needed for a valid result (Lantz *et al.*, 2019), with minimal increase for higher number of respondents. This card-sorts analysis employed a sample of twelve; six for each sort: cognitive-affective and internal-external, across the span of 10 days. The target population included British nationals, pursuing an undergraduate degree at Bangor University. To increase reliability, a prerequisite that the respondent's had experience in purchasing and using a smartphone. Each individual was paired so that there were six pairs of participants attempting two card sorts sessions; one for each categorisation, cognitive/affective and internal/external.

4.3.2.5. Procedure

Prior to commencing the sorting exercise, participants were informed of the study's topic, aim and objectives. Explanations regarding recording length, confidentiality and data storage were provided to sign the consent sheet. A reminder of prize draw of £20 Amazon gift voucher was also given. The participants were then asked to provide background information as to their current phone models and why they choose that particular handset. Next the pre-defined categories and the guideline of decision criteria's, used for expert survey, was utilised to explain the categories to the participants.

Further instructions were given regarding what is expected and what the respondents could or could not do during the task. The respondents were instructed to use the categories such as 'not sure', 'not applicable', apart from given four categories; and 'to think of the concept behind the words, more than the words themselves' (Faiks and Hyland, 2000). The respondents were also encouraged to ask questions for further clarifications.

The actual sorting tasks were performed in a single session for two participants in a group. Each session was divided into two sorts; one for cognitive/affective and another for internal/external (each lasting 30 minutes). The participants were to discuss and come to a conclusion regarding the placement of each item into different groups. Answers to any specific question were provided throughout the sorting procedure. All measurement items were presented on the 4x5 index card and randomly displayed on a table with a different order per participant group. Participants were asked to think aloud during the entire process, explaining what they were doing and why. Participants were allowed to sort/resort any card at any point in time, and were not required to sort all the cards. Finally, respondents were probed for further information post-exercise, using questions such as:

- Which criteria did you use for categorisation? Which criteria are important in which context?
- Were you able to express your opinions freely and correctly? If not, could you suggest any improvements for this investigation, which would enable you to express yourself more freely and correctly?
- Did you feel any uncertainty concerning the procedure of sorting? (Which?)
- Did you feel any uncertainty during sorting? (When?)
- Were there any items presented, which you feel, do not belong to the targeted domain? (Which?)
- Are there any items that were difficult to categorise? (Which and why?)
- Do any items overlap with respect to the criteria you used for sorting? (Which?

Suggested improvements?)

- Do all items share the same level of abstraction? (Which do not? Suggested improvements?)

After completion of the exercise, a photograph was taken for each individual sort, and a rubber band was placed around each of the individual piles. The sorted cards were assigned scores and recorded on to a "Popular Placements Matrix" on a spread sheet. Each session was recorded using a smartphone voice recorder (password protected), and transcribed for analysis. Participants were asked for permission to archive the transcripts.

4.3.2.6. Data Recording

Although it was possible to ascertain the categorisation by "eye-balling" (measuring without using any tools or techniques) the cards (Nielsen and Sano, 1995), it was more efficient to score the cards so that they are stored, accessed and manipulated electronically by running a statistical analysis. Thus, numeric scores were assigned to each category. For cognitive/ affective sorting exercise: cognitive scored as 1, affective as 2, not sure as 6 and for internal-external sorting exercise: internal was scored as 3, external as 4 and not sure as 5. MS Excel was used to create a "Popular Placements Matrix" workbook, and card numbers were listed sequentially on the row and sorting categories on the column. After the completion of each sorting session, the numeric scores were entered into this Excel workbook, with different worksheet tabs for each sorting session.

4.3.2.7. Analysis Techniques

A range of techniques (quantitative and qualitative) have been developed for analysing card sort data with various authors pursuing different analysis approaches (Deibel *et al.*, 2005), the selection of which is dependent on the goals of elicitor. A simple 'hit-or-miss' analysis approach, where a pair of concepts appearing in the same pile receives 1 and pair that does not appear in the same pile receives 0 ratings. Several other methods predominantly employ statistical techniques such as multidimensional scaling, hierarchical cluster analysis, or pathfinder algorithms (Harper *et al.*, 2003). The four most commonly used techniques (Deibel *et al.*, 2005) are summarised in Table 20.

Analysis method	*Description*	*Example of previous research*
Structural	Quantitative method that looks at the 'shape' of the sort (number and sizes of categories), ignoring the names of categories, criterias, and items.	Lewis and Hepburn (2010)
Item based	Quantitative method examing how often cards/itmes are grouped together (**degree of agreement**), using *Co-occurrence matrices or Popular Placements Matrix* to get the overall agreement by category.	Nawaz (2012) Roth *et al.* (2010) Rugg and McGeorge (1997)
Category based	Qualitative method focusing on category names using *Gist analysis*	Bostic *et al.* (2016)
Superordinate analysis	Using *Cluster analysis*, focus on both the category and the criterion names	Faiks and Hyland (2000)

Table 20: Analysis techniques (Adapted from: Deibel *et al.* (2005)).

In the context of this study, the aim is to analyse which measurement items fall under cognitive/affective and internal/external categories. With this in mind, an *item- based analysis* methodology was deemed suitable. Consequently, the recorded data (see section4.3.2.6) for each sorting exercise was recorded using the *Co-occurrence matrices* method to produce the "Popular Placements Matrix" using MS Excel tools. The results were interpreted using 'the overall agreement by category' measurement (Spencer, 2009). Harper *et al.* (2003) provided the commonly used agreement threshold for categories, to be >50%.

4.4. Phase 2: Quantitative Confirmatory Phase (Online survey)

The main objective of this phase is to investigate the relationship between the cognitive/ affective dimensions of PV and loyalty constructs (and testing the proposed hypothesis developed after addressing propositions P5 and P6 in sub-section 3.3.2.1 (p. 108)). Questionnaire design and layout is outlined in sub-section 4.4.1, along with justification for selecting Amazon MTurk as the data collection platform. Sub-section 4.4.3 described the sampling procedures and the proposed guidelines for sample size assessments. Sub-section 4.3.2.7 elaborates on the analysis procedure conducted with the help of SPSS 24.0 in order to provide a preliminary examination of items. Following this, the validity and reliability measures were elaborated. Additional measurement, development and estimation were performed using Confirmatory Factor Analysis (CFA) through AMOS 24.0. CFA was also

implemented to measure the model's quality assessment to ensure the reliability and validity of each construct. To examine the reliability of empirical data, Cronbach's Alpha is employed to ensure the uni-dimensionality of each measure.

4.4.1. Questionnaire Design

To accomplish the purpose of this study, it is not possible to only use qualitative methods. Survey through questionnaires are considered for this study as they are argued to be a most common and useful tool for gathering information on "what", "who" and "how much/many" questions for a wide variety of topics. Moreover, online surveys are cheaper, quicker and easier to administer as compared to any other means of data collection (Bryman, 2007). A self-administered online questionnaire survey was employed for data collection. The items of the questionnaire were adapted from existing and well-tested scales offered by a comprehensive review of the extant literature (Chapter 3, Table 14, p. 104).

- ***Question Type:*** In respect of the types of questions, there are two broad categories; open and closed questions. Open-ended questions let the respondents reply in their own words using "real world terminology" (Schmidt, 2006), and are appropriate during an exploratory phase. Given, this phase is employing confirmatory analysis, closed questions where the respondent's required to select from the list of responses, are deemed suitable for this phase (see Appendix F for a copy of the questionnaire).
- ***Response Format:*** The questionnaire employed a 5-point Likert scale to record the responses. Likert scales, that requires the respondents to indicate their degree of agreement with or endorsement of series of declarative statements (Schmidt, 2006), have been extensively used in PV and loyalty literature (Giovanis and Athanasopoulou, 2017; Mohd-Any *et al.*, 2015; Sweeney and Soutar, 2001; Tanford, 2016). Response categories generally range from 'strongly agree' to 'strongly disagree' (Schmidt, 2006). The respondents were required to mark their choice on the available 5-point scale (See Appendix F).
- ***Questionnaire Layout:*** Part one of the survey consisted of a combination of closed and open-ended questions. The closed questions were regarding the participant's current iPhone model, the duration of its use, and its most important feature in their opinion. The open-ended question identified the goal by probing the respondent to think what makes their chosen iPhone feature(s) the best feature. Part two of the survey questionnaire was customised to the iPhone model being

chosen in the previous section and focused on testing all major constructs, including PV and loyalty. This section also tested the relationship between the cognitive/affective perspective of PV with attitudinal loyalty. Part three contains questions regarding the demographic characteristics of the respondents, including age and gender. Age was operationalised by asking the respondents to select their age group from a set of pre-determined categories, and gender checking one of the three categories; male, female, or prefer not to answer. The survey took approximately 2 minutes to complete at the end of which, the respondents were directed to copy and paste the survey code provided (from https://getfoureyes.com/ website) into the MTurk dialogue box in order to be imbursed ($0.40) for their participation.

4.4.2. Data Collection and Survey Administration

This online survey was designed using 'Foureyes' (https://getfoureyes.com/) and implemented using Amazon Mechanical Turk (MTurk). Upon agreeing to participate in the survey, the participants were redirected to the online website (https://getfoureyes.com/) for the actual survey. The survey was divided into three parts and commenced with an Information Sheet and then the screening questions on whether or not the respondent owns an iPhone and is a USA resident. Respondents who had failed to selected the screening statements were asked if they would reconsider their selection and select the statements that applied to them. Checking all the screening statements lead the participants to the actual survey. Email and web-based surveys are considered the most lucrative methods for data collection in the field of marketing (Ilieva *et al.*, 2002) with, web-based being more interactive, better displayed and easier to fill in than the email based surveys (Ilieva *et al.*, 2002). In order to administer the web-based survey, MTurk was implemented, as it is the most common source of crowdsourcing of research participants in social sciences (Hauser *et al.*, 2018). Litman *et al.* (2017) observed that MTurk has provided a wide variety of participant recruitment tools for researches to gather behavioural data, with speed and efficacy. Moreover, MTurk has immensely increased the speed of data collection by making the studies instantly available on the online platform for the participants around the world (Litman *et al.*, 2017). Buhrmester *et al.* (2011) also found MTurk platform to be a fast, cheap and reliable data source, which is valid across numerous tasks and countries. According to Hauser *et al.* (2018), the main advantage of MTurk, over other means of recruiting participants, is that the sample consists of financially independent adults used to making more varied purchasing decisions are more similar to a typical consumer than a college

student. Additionally, MTurk also assigns a unique worker's id to individual participants, limiting multiple submissions (Hauser *et al.*, 2018). However, there have been concerns regarding the validity and usability of data collected using MTurk (Ford, 2017; Kees *et al.*, 2017). Hauser *et al.* (2018) asserts that "as long as researchers consider how these issues may affect their MTurk study, take the appropriate measures to assuage them, and report what they did in their manuscripts, then crowdsourcing platforms like MTurk can serve as a rich source data for consumer research." MTurk is this chosen as a data collection platform.

4.4.3. Sampling

Non-probability sampling is favoured for this study, owing to time and cost constraints. Of the four most common techniques of non-probability sampling (Convenience, Judgment, Quota and Snowball) the most widely used technique is convenience sampling (Schmidt, 2006), enabling large response rates (Schmidt, 2006).

4.4.3.1. Product Selection Criteria: Emerging Devices Market

The objective of Phase 1 is to explore PV dimensions. Following the inter-variable perspective, Phase 2 investigates the relationships between PV and loyalty. Given that loyalty has a strong influence on profitability, managing loyalty is a critical challenge for marketers, specifically in relation for emerging devices (Giovanis and Athanasopoulou, 2017). Thus, it is imperative to select a product that could theoretically, not only encompass the dimensions of the extended PERVAL scale in moderately equal fashion but would also be the familiar, everyday product that the sample population would own.

This study focuses on emerging devices or wireless-enabled computing devices. These devices are commonly characterised by ability to provide and support, (1) open software standards and, (2) ability to provide access to wireless broadband (Giovanis and Athanasopoulou, 2017). Emerging devices are integrated in the daily lives of customers (for various features like accessing the internet, clicking pictures) and yet are distinguished from simple utility products to garner quantifiable customer loyalty. Common example of emerging devices are smartphones, notebooks and tablets (Giovanis and Athanasopoulou, 2017). However, among these emerging devices, smartphones receive more than half of all the web traffic (Chaffey, 2020). Furthermore, according to Chaffey (2018), smartphones are considered the most popular in emerging devices globally, with over 3.5 billion active users (out of 5.15 billion unique users) in July 2020 (Chaffey, 2020). This means that over 66% of glob-

al population is a mobile phone user by the end of July 2020 (Chaffey, 2020).

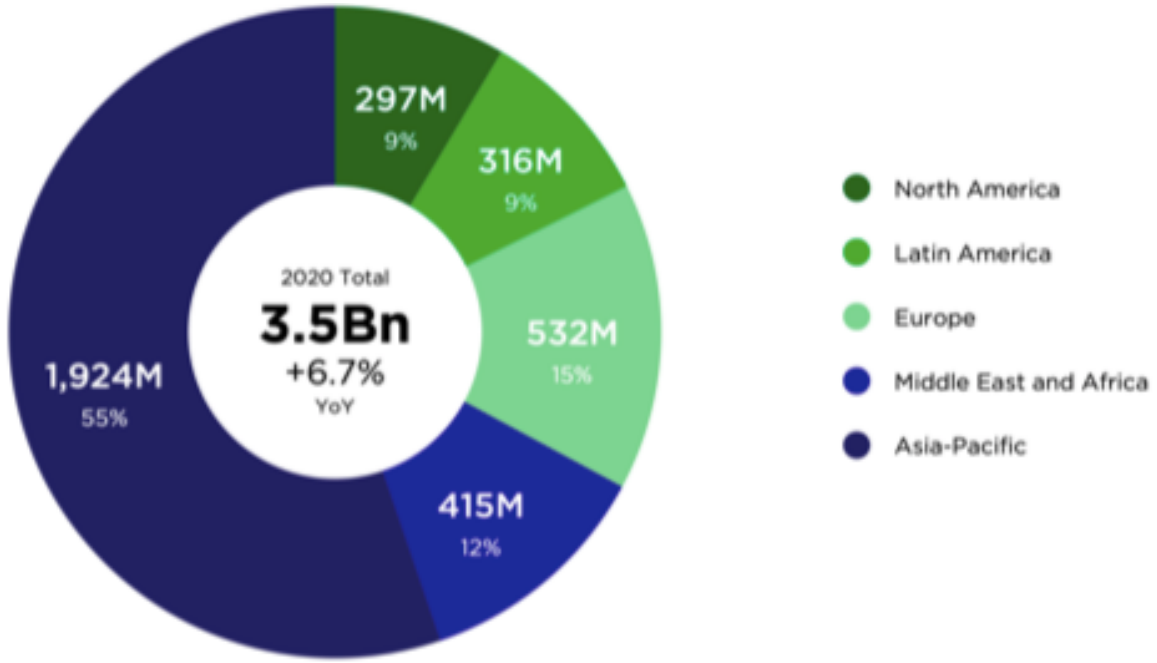


Figure 23: Global smartphone users (active) for 2020 (source: Chaffey, 2020).

The smartphones penetration in North America has reached 60.5% in 2016 (Statista), and by July 2020, the number of active users have risen to 297 million (see figure 23). In this category, Apple sold over 18.7 % of all the new smartphones (based on shipment) in 2012 (O'Dea, 2020a). Although, as shown in figure 24, this figure dropped to 13.9% in 2019, Apple sold over 215.8 million iPhones worldwide (Statista) and maintained its position as the second most valuable brand (first being Amazon) in the world in 2019 (Statista).

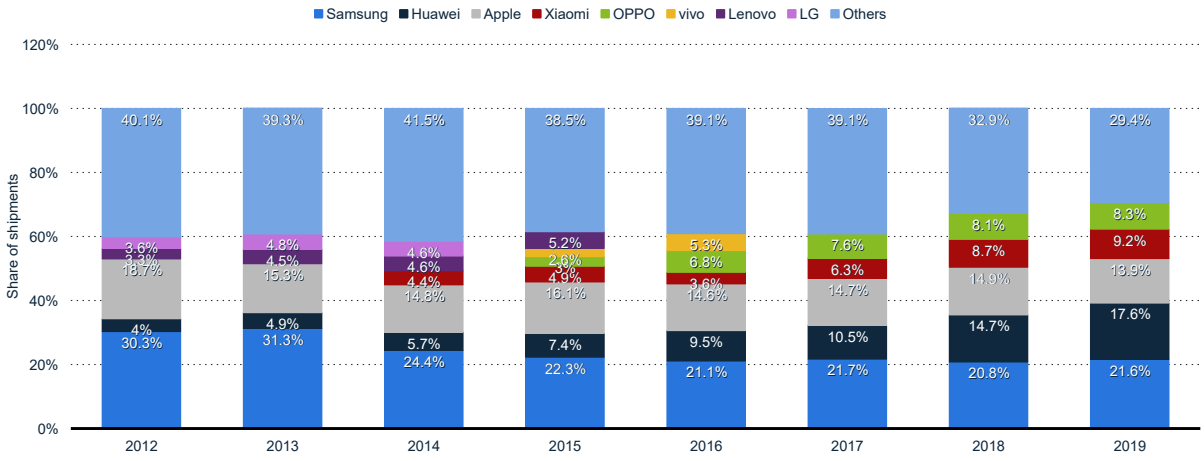


Figure 24: Distribution of Smartphones shipments based on venders (worldwide) from 2012 to 2019 (source: O'Dea, 2020)

Furthermore, the revenue generated by Apple has frequently been considered more than twice of some other technology brands like Google (O'Dea, 2020b). Considering all the products of Apple, iPhone generated over 142.38 billion U.S. dollars (in revenue worldwide) in 2019 (Tankovska, 2020), encompassing almost 60% of total sales share of Apple (see figure 25). The increase in sales shares have contributed in making iPhone the most successful Apple product to date (Tankovska, 2020). Hence, there is constant growth in iPhone users, which leads to a larger target population. Additionally, as described in the literature (Chapter 3, section sub-section 3.3.1.2, p. 101), the iPhone encompass the PV dimensions under investigation. Furthermore, emerging devices are also considered as a high-involvment product (Giovanis and Athanasopoulou, 2017). Thus, the iPhone was chosen as the product for this study.

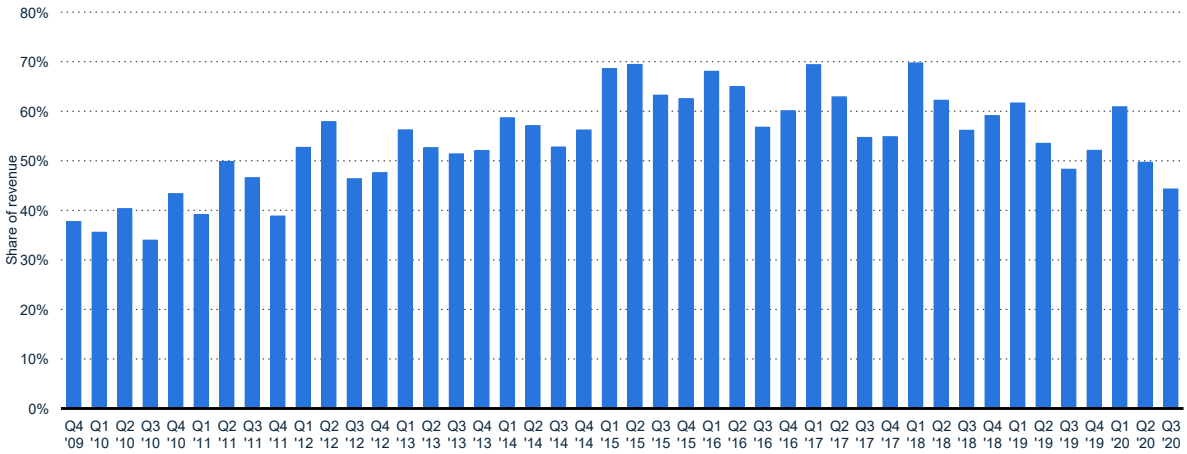


Figure 25: iPhone sales share of Apple's total revenue (worldwide sales) 2009 to 2020 (source: Tankovska, 2020)

4.4.3.2. Sample Selection Criteria

The target population for this study involves iPhone users with using and purchasing experience. A convenience sample of US workers who are iPhone users were recruited using MTurk. The study targeted novices and not experts, given that researching 'mainstream' consumers' perception provides more reliable results for marketing purposes, rather than examining the professional expert. Additionally, in order to accurately examine loyalty, repeat customers would be a more reliable sample population; hence, a screening question added to exclude respondents that were not existing iPhone users.

4.4.3.3. Sample Size

The sample size was determined by using multiple statistical guidelines. In the case of exploratory factor analysis, a more acceptable sample size would have a 10:1 ratio (Hair *et al.*, 2014). For SEM there are various guidelines, for instance, Russell (2002) recommends a minimum of 5 or 10 cases per measurement item, suggesting an ideal sample size of 125 to 250 cases. Boomsma and Hoogland (2001) proposed that for an accurate model fit, a minimum of 100 cases could be sufficient, while (Bentler and Chou, 1987; Bentler, 1990) asserts that 5 cases per factor is acceptable. Thus, a sample of 125 cases would be deemed appropriate for this study. Alternatively, (Anderson and Gerbing, 1984) states that a sample of 150 cases would be considered sufficient for a model with three or more indicator per factor. In line with Russell (2002) a sample size of 125 to 250 cases is deemed appropriate given that there are 25 measurement items in this thesis.

4.4.4. Data Analysis Procedures

The data analysis procedure for this study (2.1) consist of four steps, starting from descriptive analysis to model and hypothesis testing for both, intra and inter-variable perspective (see Figure 26). The statistical software used during this phase is the Statistical Package for the Social Sciences 24.0 (SPSS) and Analysis of Moment Structure 24.0 (AMOS).

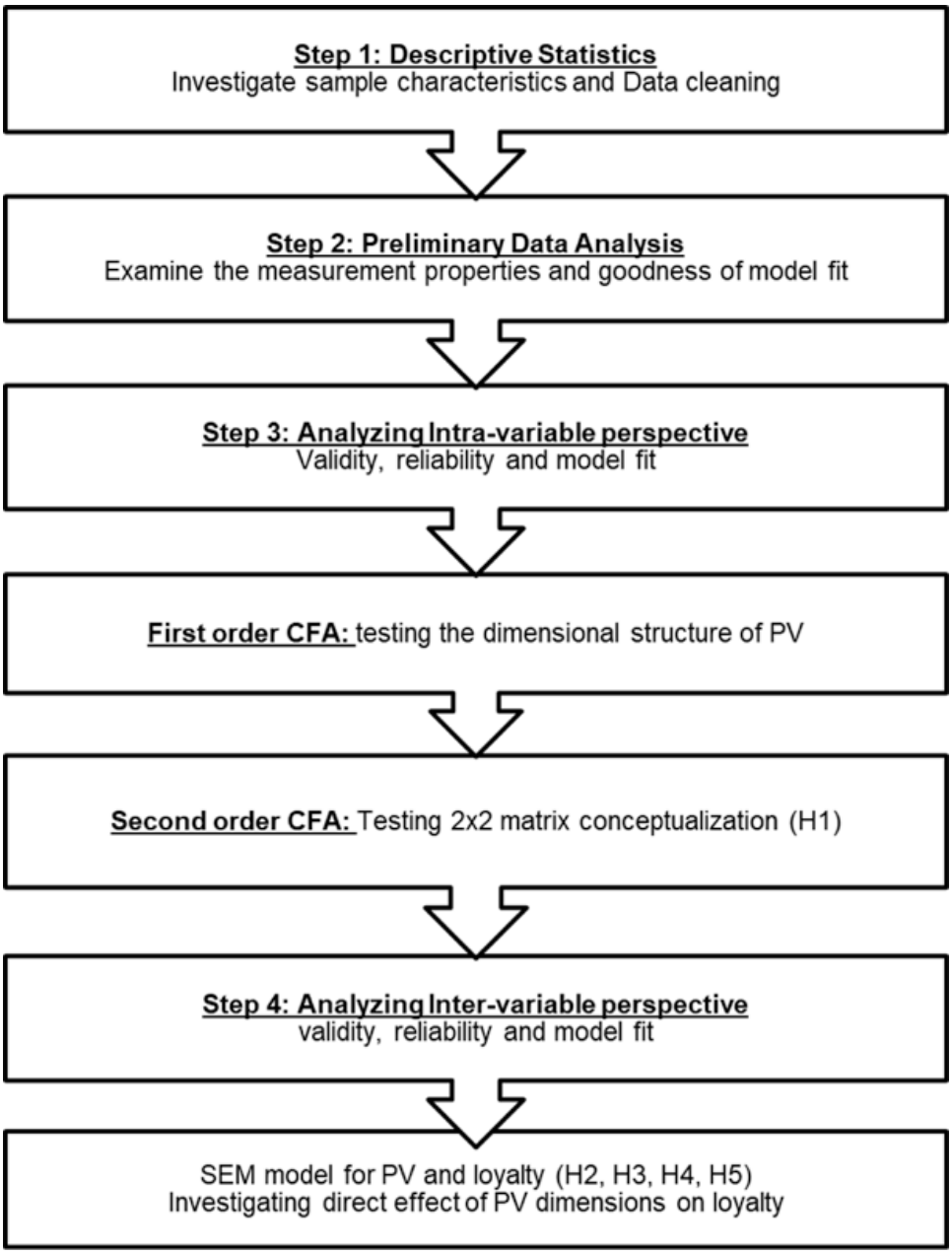


Figure 26: Data Analysis Steps.

4.4.4.1. Step 1: Descriptive Statistics

The descriptive statistics focused on data cleaning and developing sample profiles. To achieve the required useable sample size for further analysis data cleaning procedure involved checking for: correct survey code, duplicate worker IDs, response time, reverse worded items check, long string analysis and USA Residency). Next, preliminary data analysis is performed, and information regarding scale reliability, mean and standard deviation is presented.

4.4.4.2. Step 2: Preliminary Data Analysis

Formal analysis commenced by testing PERVAL scale model fit, that is, the five dimensions of PV scale (quality, price, emotion, social, goal-relevance) explained by cognitive-affective and internal-external factors. To empirically examine the model fit, confirmatory factor analysis was deemed appropriate. To assess the model fit for observed correlations and covariances to the data, several model fit indices are available for implemention (Everitt, 2001). Chi-square goodness-of-fit is the most widely employed criterion for model fitness in PV literature; however, it is argued that it is highly sensitive to sample size, and therefore is not too helpful in determining the goodness of fit on its own (Everitt, 2001). As such, Hu and Bentler (1999 cited in: Russell, 2002) propose a "two criteria" strategy for the assessments of model fit. They recommend the use of the standardised root mean square residual (SRMSR) as the first criteria, to then use one of the several fit indices, including: comparative fit indices (such as, NFI, NNFI, CFI and RMSEA), absolute fit index (such as MFI and Chi-square), indices of proportion of variance accounted (such as GFI and AGFI), degree of parsimony fit indices (such as PGFI, AIC and CAIC) and residual-based fit indices (RMR). Hair *et al.* (2014) recommended the use of a combination of fitness indices from three categories (see Table 21) of model fit. These categories and their level of acceptance are summarised in Table 21.

Name of category	***Name of Index***	***Abbreviations***	***Acceptable level***
Absolute Fit Measures	Chi-square		*p*>0.05
	Goodness-of-fit Index	GFI	>0.80 (Hair et al., 2014)
	Root Mean Square Error of Approximation	RMSEA	Values between 0.05 and 0.08 are deemed acceptable (Hair *et al.*, 2014)
Incremental fit Measures	Adjusted Goodness of Fit Index	AGFI	>0.90 (Hair *et al.*, 2014)
	Comparative Fit Index	CFI	>0.90 (Hair *et al.*, 2014)
Parsimonious Fit Measures	Parsimonious normed fit index	PNFI	Values between 0.06 and 0.09 are deemed acceptable (Hair *et al.*, 2014)
	Akaike Information Criterion	AIC	Values closer to 0 indicates better fit (Hair *et al.*, 2014)

Table 21: Fit Indices (Adapted from: Byrne, 2009)

4.4.4.3. Step 3: Analysing Intra-variable Perspective

Confirmatory Factor Analysis (CFA), a special type of SEM (Ullman, 2001), was employed to explore the intra-variable perspective. The main aim of this step is to explain the correlations or covariances between observed variables and latent variables (Everitt, 2001), that is the higher order components and first-order dimensions of PV. In other words, the CFA analysis showcased how well the hypothesised model 'fit' the observed data (Russell, 2002). This analysis was conducted using AMOS 24 and followed guidelines suggested by Ullman (2001) and Byrne (2009).

Data analysis commenced with a CFA to test whether the extended PERVAL scale conforms to the proposed model (first-order CFA analysis). After achieving the model fit, based on the recommendations provided by Joreskog (1993) (cited in: Byrne, 2009), and establishing the dimensional structure of extended PERVAL scale, a second-order CFA is performed to test whether first-order dimensions are sub-dimensions of second-order factors, namely cognitive-affective and internal-external components. Thus, CFA for testing the 2x2 matrix of PV leads to investigating H1 (sub-section 5.3.3.3). Sub-sections 4.4.4.3.1 and 4.4.4.3.2 respectively, presents the validity and reliability measures, to asses the adequacy of the measurement items of the scale (Bryman, 2007) used in the measuring instrument (online survey) for the intra-variable perspective (Phase 2).

4.4.4.3.1. Validity

Validity is the degree to which a measurement item accurately or correctly measure, and only measures, the intended latent variable or theoretical construct (Schmidt, 2006) with several different types of validity assessments available. ***Content or Face validity*** is the most common, yet most crucial, validation method due to its ease of administration (El-Manstrly and Harrison, 2013; Schmidt, 2006). It is a systematic qualitative evaluation of how well the contents of measurement items represents the real attributes of the construct being captured (Malhotra and Birks, 2007). Content validity is usually achieved through literature review (by carefully selecting the measurement items that have been previously used) and expert's assessment (Schmidt, 2006). Thus, all the measurement scales in the current study were considered to possess content validity as all the measurement items were adapted from the relevant literature that has previously been empirically validated. Furthermore, the results of the expert survey (Phase 1, study 1.1) re-enforce content validity.

Bryman (2007) defines ***construct validity*** as, the extent to which the items measure the content they were supposed to be measuring. Furthermore, convergent and discriminant validity has been adopted as part of construct validity in social sciences (Wu *et al.*, 2014).

Convergent validity (CV) measures how well the observed variables correlate positively to other observed variables for the same latent construct (Wu *et al.*, 2014). El-Manstrly and Harrison (2013) defined CV as the extent to which the measurement items of a specific construct 'converge' or indicate higher proportions of variations in common. CV can be established by ensuring that each parameter estimate (standardised factor loading) is statistically significant (ideally more than 0.50) (Hair *et al.*, 1998) and assessing how strongly or moderately the constructs are correlated with each other. In other words, CV measures whether all the variables identified for one latent construct measures the same underlying construct. Moreover, Cronbach's alpha, composite reliability and AVE also infer convergent validity (Hair *et al.*, 1998). The threshold value of AVE is greater or equal to 0.50.

Discriminant validity (DV) is described as the lack of correlation between two theoretically unrelated latent constructs (Schmidt, 2006), at both, the item level and the construct level (Hair *et al.*, 2014). At the item level, DV is observed by exploring that each observed variable strongly co-relates to its latent construct but not with other latent constructs (cross-loadings) (Wu *et al.*, 2014). However, at the construct level, the discriminant validity is usually established when the AVE values for any two latent constructs is greater than the squared co-relations between them (Hair *et al.*, 1998). Thus, although the results of the expert survey may partially establish the validity of the extended PV scale, further evidence of validity will be provided through the data analysis of phase 2.

4.4.4.3.2. Reliability

Reliability refers to the ability of a scale to produce consistent results by examining the consistency of variables in measuring what they are intended to measure (Schmidt, 2006). In other words, reliability is concerned with the replicability of the results and whether the measures developed for the concept are consistent (Byrne, 2009). ***Item reliability*** is established when the factor loading of the observed variables on the underlying latent construct is greater or equal to 0.70 threshold (Hair *et al.*, 2014). Although a factor loading of 0.60 can be acceptable (when latent construct has a multidimensional scale), any observed variable with less than 0.50 factor loading should be eliminated from the model (provided, this elimination leads to a substantial increase of composite reliability) (Wu *et al.*, 2014). Moreover, the square of standardised factor loading (R^2 value) also predict item reliability (Hatcher and O'Rourke, 2013) and the threshold value for R^2 should be equal or greater than 0.39.

Another popular method for assessing reliability is ***Internal consistency***, which refers to the extent to which, responses are consistent across the scale (Wu *et al.*, 2014).

Cronbach's alpha (α) is commonly used in social sciences to represent internal consistency (Cohen, 1983; Schmidt, 2006). Previous studies have suggested that an alpha value of 0.70 or higher shows acceptable reliability (Hair *et al.*, 1998; Nunnally and Bernstein, 1994). However, Cortina (1993) proposed that an alpha of 0.60 can be considered acceptable for a scale with less than six items.

Composite reliability (CR) is measured by calculating the squared sum of factor loading for each latent variable and sum of the measurement errors for it (see equation 1), overcoming the possible limitation of Cronbach's alpha (overlooking the effects of measurement errors) (Hatcher and O'Rourke, 2013; Wu *et al.*, 2014). A CR value between 0.80 and 0.90 is considered ideal, but it should be greater than 0.69 (Hair *et al.*, 1998, 2014; Hatcher and O'Rourke, 2013).

$$CR = \frac{(\sum_{i=1}^{n} L_i)^2}{(\sum_{i=1}^{n} L_i)^2 + (\sum_{i=1}^{n} e_i)}$$

where CR represent composite reliability, L_i is factor loading for each observed variable and e_i measurement errors for it.

Equation 1: Composite reliability (source: adapted from Hair et al., 2014)

Furthermore, ***AVE*** can also establish construct reliability as it reflects the overall amount of variance in the observed variables (Hatcher and O'Rourke, 2013). The threshold value for AVE to establish acceptable reliability is 0.50 (Hatcher and O'Rourke, 2013).

$$\text{AVE} = \frac{\sum_{i=1}^{n} L_i^2}{n}$$

where AVE represent average variance extracted, L_i is standardised factor loading and *i* is the number of items.

Equation 2: Average Variance Extracted (source: adapted from Hair et al., 2014)

4.4.4.4. Step 4: Analysing Inter-variable Perspective

After testing how well the extended PERVAL scale fit in the 2x2 matrix model of PV (intra-variable perspective of Phase 1, studies 1 and 2) and establishing the structure of PV scale (phase 2, inter-variable perspective), the next stage of data analysis focused on the inter-variable perspective to test the remaining hypothesis. The inter-variable conceptual model (Figure 17, p. 107), differs from previous literature, in that, this thesis focus on identifying possible differential effects of PV dimensions (cognitive/affective) on different types of loyalty

(cognitive-affective). Furthermore, this conceptual model also addresses the call for future research on PV-loyalty links (Zauner *et al.*, 2015).

To analyse the inter-variable conceptual model, SEM was employed. The SEM analysis has been consistently gaining interest in social sciences and is an extensively used analysis procedure (Russell, 2002). It has immense potential for theory development as it takes a confirmatory (hypothesis testing), rather than exploratory approach, to assess and modify theoretical models (Bryman, 2007; Russell, 2002). SEM can also provide explicit estimations of measurement errors (Byrne, 2009), and simultaneously allows a test for hypothesised relationships (Ullman, 2001). After establishing the validity, reliability and goodness-of-fit for the SEM model, the results of this modelling will be used to test the remaining hypothesis (H2, H3, H4 and H5).

4.4.5. Summary

This chapter outlines the methodology employed. The research process commenced with phase 1, study 1.1 (an online expert survey) to investigate the proposed 2x2 matrix model. Sampling and survey implementation was also discussed. Based on the results of the expert survey, a qualitative phase (phase 1 study 1.2) was employed to expound on the convergent validity of the 2x2 matrix (sub-section 4.3.2). In subsequent sub-sections, the applicability of card sorts test was discussed, and justification for implementing a closed card sorts method was presented. A brief review of data collection and recording procedures, along with the analysis techniques, were also presented.

Phase 2 begins by discussing questionnaire design, with a particular focus on the justification of using MTurk as a data collection platform. Sub-section 4.4.3, elaborated on the sampling procedure and justifications for proposed sample size. In the last sub-section, the details regarding the data analysis tools/ techniques/ methods for hypothesis testing were summarised.

In Chapter 5, both conceptual models of PV will be empirically examined, to investigate the reliability and validity of proposed conceptualisation and operationalisation of PV. The main aim will be to explore and deepen the understanding of PV construct by validating the higher order conceptualisation and extended PERVAL scale. Moreover, the empirical results of Phase 2 will provide support for inter-variable relationships between the cognitive-affective components of PV and loyalty.

Chapter 5. Results

5.1. Chapter Overview

In this chapter, the results for the Explanatory Phase 1 (study 1.1: expert survey and study 1.2: card sort exercise) and Phase 2 (study 2.1: formal hypothesis testing using Amos and SPSS for the intra and inter variable perspectives) are discussed more broadly and the implications are presented. Section 5.2.1 elaborates the findings of the expert survey performed to validate the 2x2 matrix model of PV (see Figure 16, p. 105). Next, the results obtained through card sorts analysis are presented; followed by recommendations for modifications of the conceptual model for further data collection and analysis during the confirmatory phase. Furthermore, various research propositions introduced during this thesis are addressed, and as the hypotheses developed (sub-section 5.2.3) for further analysis during confirmatory phase 2. The next phase (sub-section 5.3) begins with a descriptive analysis of the data, followed by preliminary data analysis to assess the measurement properties. Sub-section 5.3.3 discusses the intra-variable and inter-variable perspective of PV. The procedure for confirmatory analysis is presented, and the final sub-section 5.3.4 discusses the results of CFA and SEM analysis in order to test the proposed hypothesis presented in sub-section 5.2.3. The chapter concludes with a summary of empirical findings.

5.2. Phase 1: Exploratory Phase

Following the theoretical review, two conceptual frameworks and six research propositions were developed for this thesis (see Table 15, p. 110). The first conceptual framework (Figure 14, p. 100) follows the intra-variable perspective, which defined PV in terms of four higher order components: cognitive, affective, internal and external; and five first-order dimensions: price, quality, emotional, social and goal-relevance. This section deepens this 2x2 matrix conceptualisation by describing the findings from the first phase of the empirical analysis. The results of study 1.1 provide support for higher order components but need further exploration to confirm the categorisation of first-order dimensions; namely, specifically social, price and goal-relevance. The findings of study 1.2 provide support for the proposed 2x2 matrix and extended PERVAL scale operationalisation and thus, provide evidence for P1, P2, P3 and P4. This last sub-section 5.2.3 will summarise the recommendations for the next phase of empirical analysis and development of research hypothesis based on research propositions.

5.2.1. Study 1.1: Expert Survey

Following the sampling process outlined in sub-section 4.3.1.1, the survey achieved response rate of 80% (8 out of 10 email invitations sent resulted in completed surveys). The data collected was entered in MS Excel for analysis. The main aim of this phase was to test the convergent validity of categorising measurement items of the extended PERVAL scale into the cognitive-affective and internal-external components and to verify the proposed 2x2 matrix (Figure 16, p. 105). In order to assess the convergent validity, the measurement items for each dimension were individually categorised by the survey respondents as tapping either into cognitive/affective or internal/external components. In what follows, the results for the categorisation of each dimension are presented.

5.2.1.1. Quality Dimension

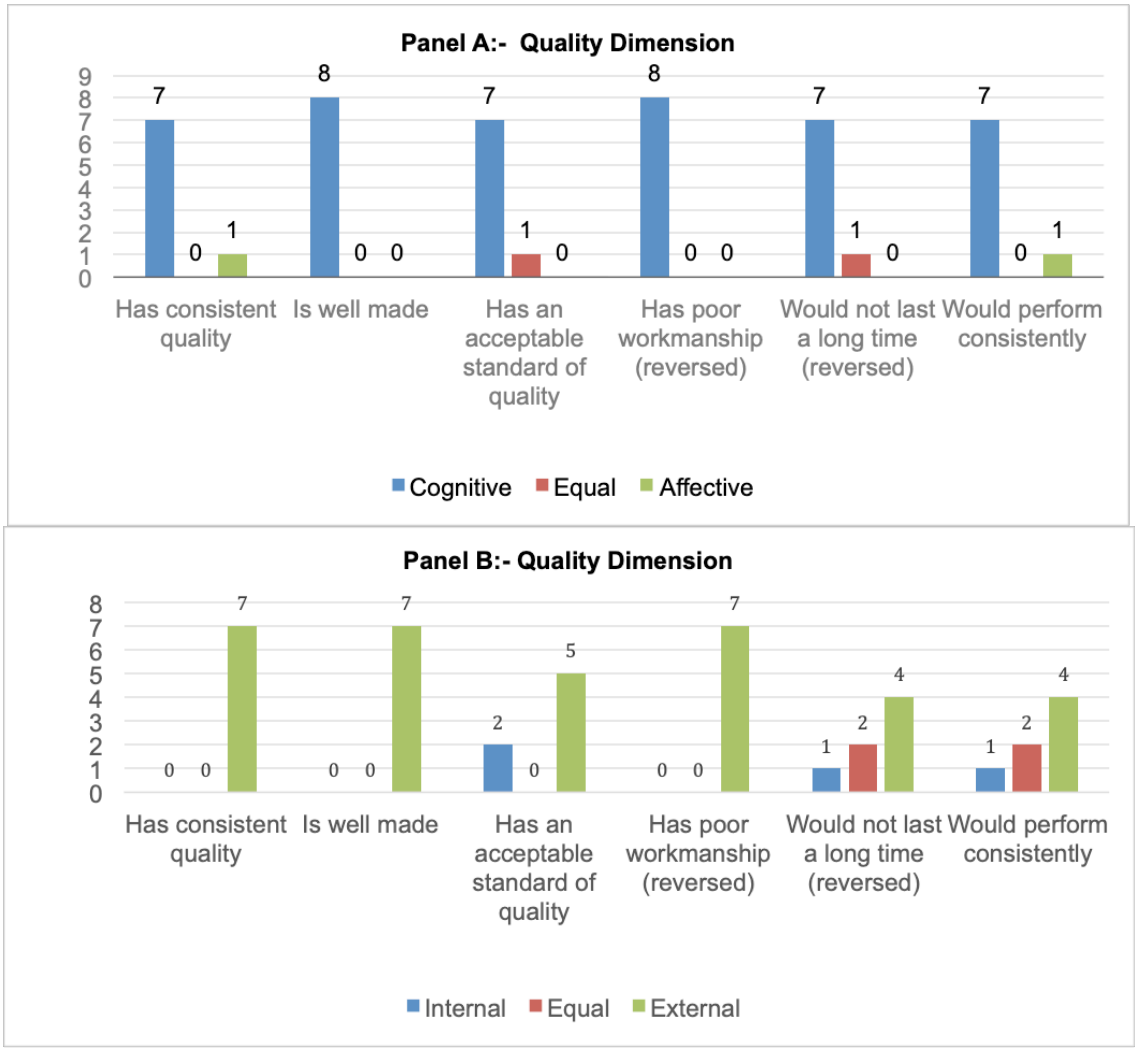


Figure 27: Quality Dimension Categorisation (Panel A: Cognitive vs Affective; Panel B: Internal vs External).

In line with the proposed 2x2 matrix (Figure 16, p. 105), the survey results (Figure 27, Panel A) indicate that, 91.7% of the respondents stated that all six measurement items for Quality tap into cognitive component, and 70.83% classified these items as tapping more into the external component (Figure 27, Panel B). However, as presented in Figure 27 (Panel B) only four out of six items were predominantly categorised as external. These last two measurement items; namely: 'Would not last a long time', and 'Would perform consistently', need further exploration as nearly 40% respondents did not consider these measurement items as external. Thus, there is a need for further investigation.

5.2.1.2. Price Dimension

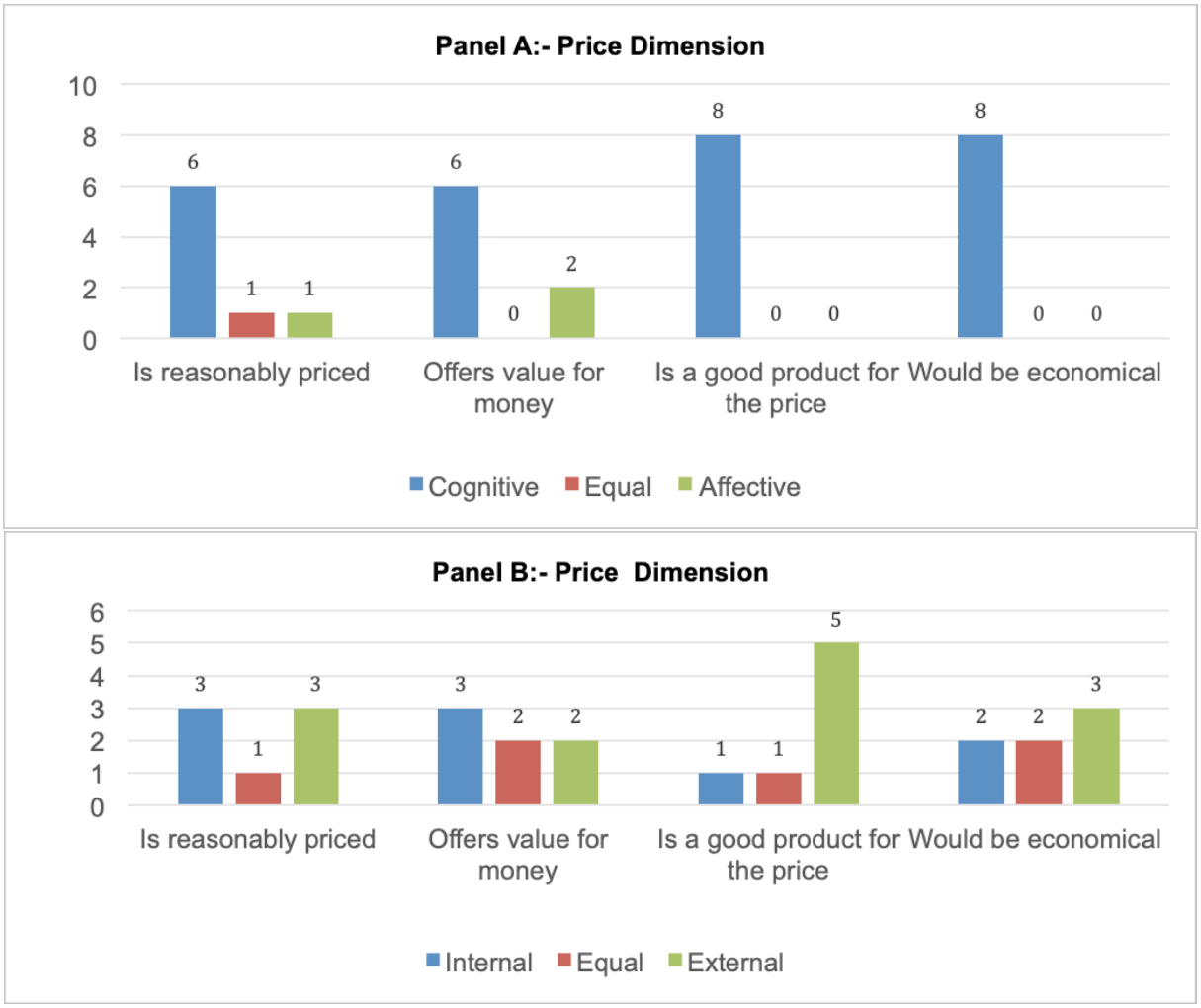


Figure 28: Price Dimension Categorisation (Panel A: Cognitive vs Affective; Panel B: Internal vs External).

As presented in Figure 28 (Panel A), 87.5% of respondents classified Price as tapping into the cognitive component. Additionally, only two measurement item namely: 'Is good for the price', and 'Would be economical', are predominantly categorised as external (Figure 28, Panel B). 40.62% of respondents considered the Price measurement items as tapping more into the external component, whereas 28.12% considered price dimension as leaning towards internal and 18.75% were unsure of the classification. Also, measurement item (namely, 'Is reasonably priced') has been classified as equally internal and external (Figure 28, Panel B). Thus, it can be concluded that the majority of respondents reached a consensus on classifying Price dimension as tapping more into the external component. However, another confirmatory test is needed to ensure the overall classification for Price.

5.2.1.3. Emotional Dimension

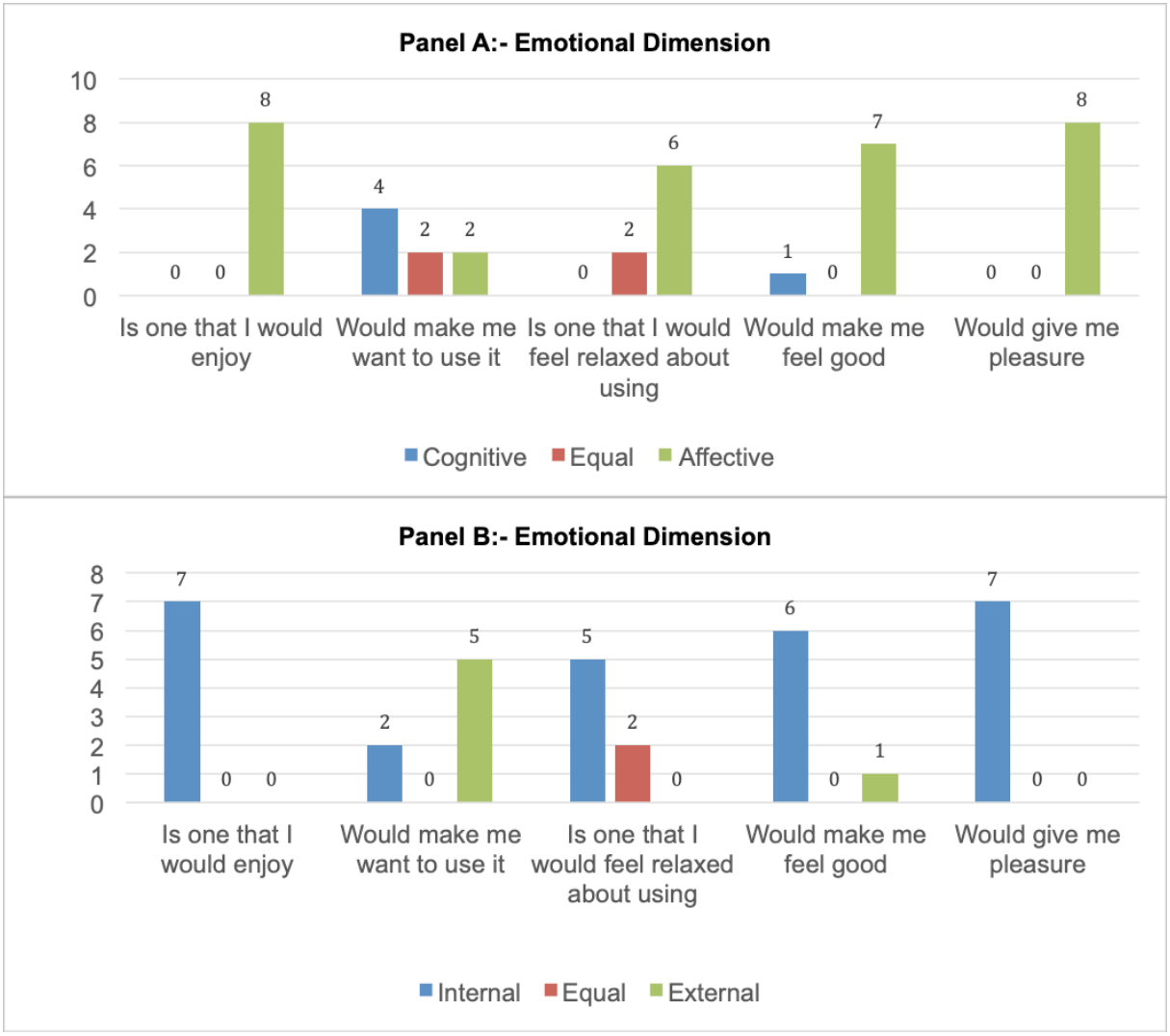


Figure 29: Emotional Dimension Categorisation (Panel A: Cognitive vs Affective; Panel B: Internal vs External).

According to the intra-variable conceptual model (Figure 14, p. 100), Emotional dimension are grouped under the affective-internal component. 77.5% of respondents categorised emotional dimension as tapping into the affective component (Figure 29, Panel A). Two of the five measurement items namely: 'Is one that I would enjoy', and 'Would give me pleasure' were captured as affective by the respondents. Moreover, 67.5% of respondents identified Emotional dimension as tapping into the internal component (Figure 29, Panel B). Although, four out of five measurement items were predominantly classified as internal, yet one item namely: 'Would make me want to use it', was classified as external and cognitive rather than affective (Figure 29, Panel A and B), and thus needs further testing.

5.2.1.4. Social Dimension

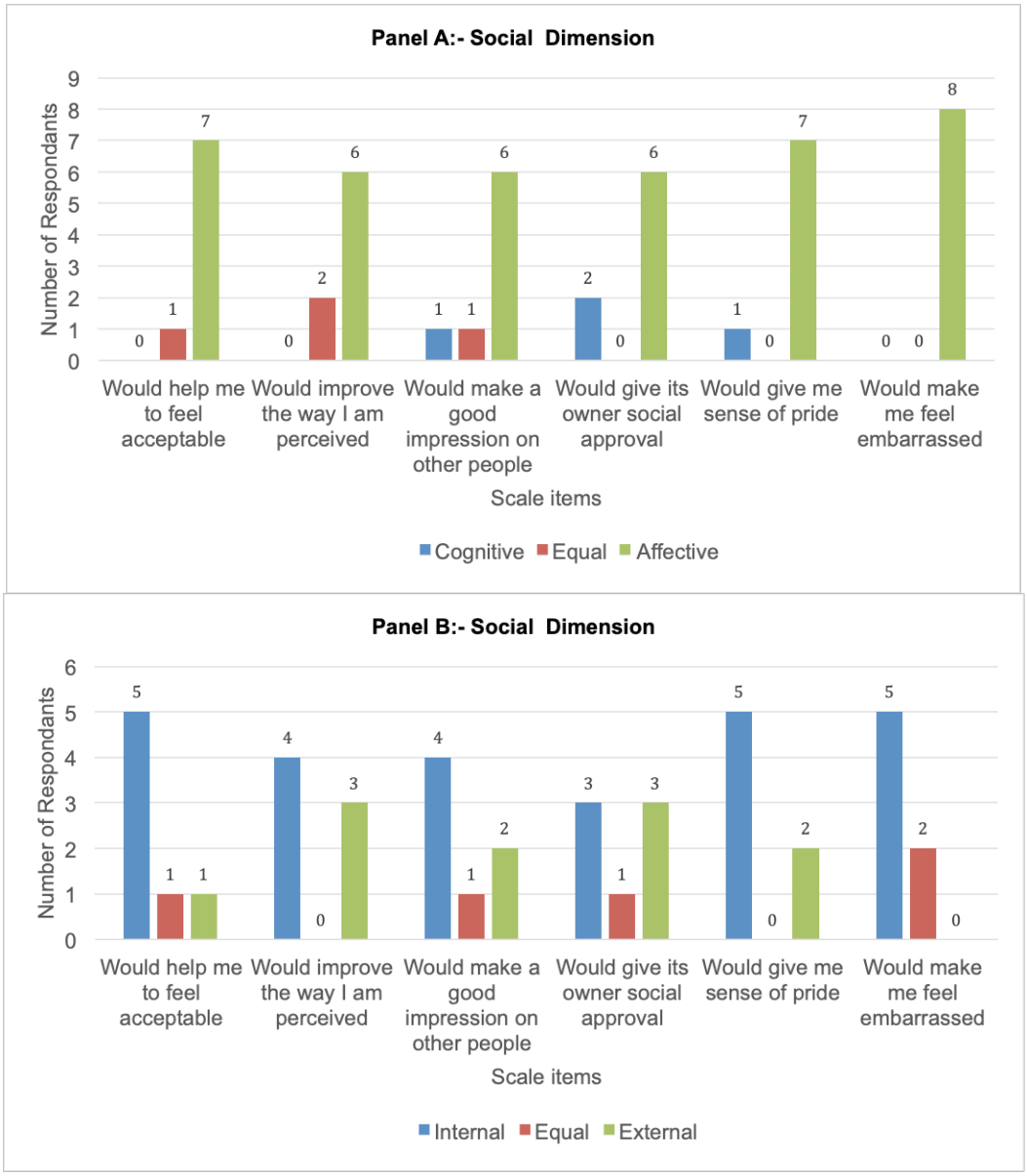


Figure 30: Social Dimension Categorisation (Panel A: Cognitive vs Affective; Panel B: Internal vs External).

Another exception was the measurement items pertaining to the social dimension. The conceptual model proposed that three of the four measurement items namely: 'Would improve the way I am perceived', 'Would make a good impression on other people', and 'Would give its owner social approval', for the Social dimension belong to cognitive rather than affective category (Figure 15, p. 102). To address the gap (R3) identified in sub-section 3.3.1.2 (p. 101), two more affective measurement items, 'Would give me a sense of pride' and 'Would make me feel embarrassed' (adapted from Sweeney *et al.* (1996), reversed), were added to balance the scale and extend the social dimension (P4). However, the survey results indicate that the measurement items for the Social dimension were categorised as

predominantly tapping into the affective component (83.34%); thereby indicating that there is no cognitive-affective split (Figure 30, Panel A). In regard the internal-external components (Figure 30, Panel B), 54.16% of respondents associated the Social dimension with internal component and 22.9% with an external component, leading towards a possibility of a similar split between the internal and external components. Furthermore, the measurement items namely, 'Would give its owner social approval', has been classified as equally internal and external (Figure 30, Panel B). Thus, the findings of expert survey point towards a similar split in the social dimension, but across the internal-external components, rather than the expected cognitive-affective split; thereby indicating a need for further testing.

5.2.1.5. Goal-Relevance Dimension

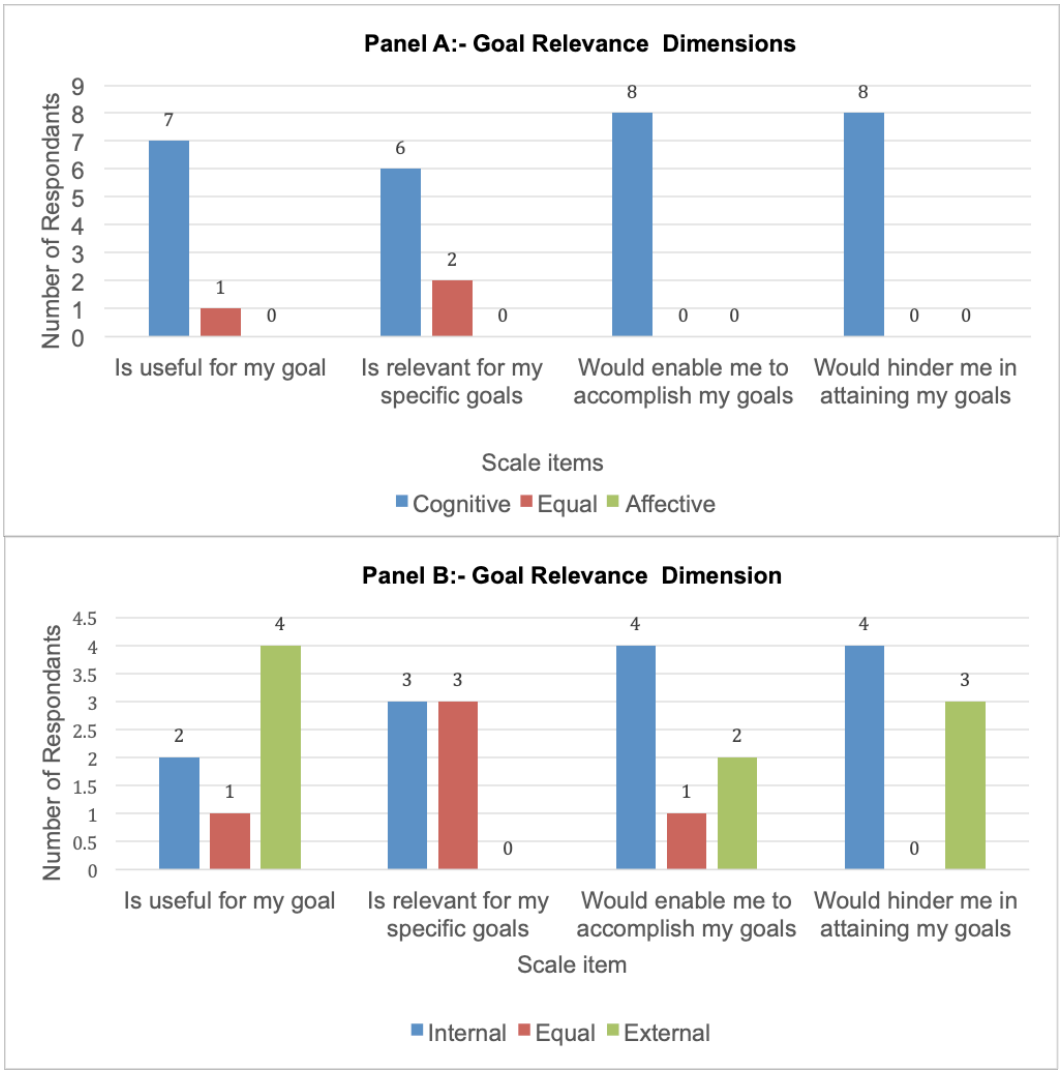


Figure 31: Goal-Relevance Dimension Categorisation (Panel A: Cognitive vs Affective; Panel B: Internal vs External).

The proposed dimension, 'Goal-relevance' was propositioned (P3) to be a predominantly cognitive and internal, in order to fill the identified research gap (see sub-section 2.4.6.4, p. 74). The survey results support this proposition (Figure 31, Panel A and B) as the measurement items of the Goal-relevance were categorised as tapping into the cognitive component by 90.65% of the respondents (Figure 31, Panel A). Also, 40.65% respondents classified it as tapping into internal component whereas, 28.12% considered it as external, and 15.6% responded as unsure (Figure 31, Panel B). Specifically, one of the four measurement items namely, 'Is useful for my goals', has been classified as predominantly external. A further measurement item namely, 'Is relevant for my specific goal', has been classified as internal by only half of the respondents. Thus, it is imperative to put Goal-relevance through further testing to achieve clear categorisation.

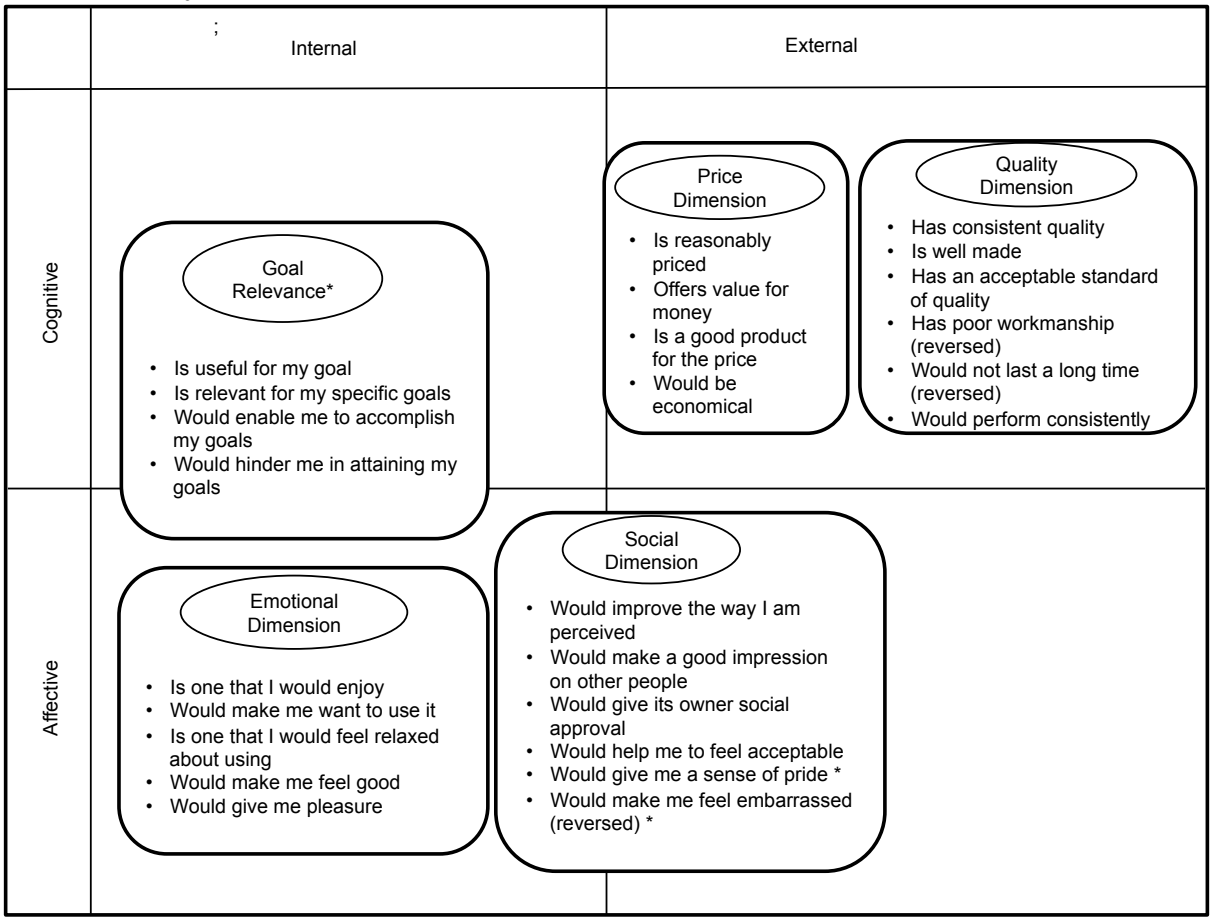
5.2.1.6. Summary findings from Expert survey

It is noted that the results of expert survey support the higher-order components of PV, thereby supporting P1 (that is, the cognitive component of PV is conceptualised using both internal and external elements), however, in regards to first-order dimensions of PV, following concluding remarks are made:

- Quality and Price dimensions were categorised as cognitive-external, yet Price needs further testing.
- The Emotional dimension was categorised as tapping into affective-internal perspective.
- The Social dimension was categorised as affective-internal, however, there is a possibility of internal-external spilt that needs to be further examined.
- Goal-relevance was categorised as tapping into cognitive- internal; however, there is the possibility of internal-external spilt, that needs to be further examined.

Accordingly, the proposed conceptual framework (see Figure 16, p. 105), was then modified (as shown in Figure 32, below) based on the findings of study 1.1 (expert survey). This modified conceptual framework for 2x2 matrix model (Figure 32) presents the Social dimension as tapping into internal and external components. Furthermore, the possibility of Goal-relevance dimension tapping into internal, as well as external, component is also represented (Figure 32). Consequently, it is argued that a more comprehensive test is required to provide a better understanding and a more clear classification for Price, Goal-relevance and Social dimensions, leading to exploratory analysis. Following a review of the literature (see sub-section 4.3.2, p. 127), a card-sorts analyse was performed employing

intra-variable conceptual model for PV (see Figure 14, p. 100). The next section presents the results of study 1.2.



* proposed dimension and/or measurement items

Figure 32: 2x2 matrix modified based on the results of Expert survey.

5.2.2. Study 1.2: Card sorts

The findings from study 1.1 (expert survey) improved the understanding of proposed model by providing valuable support for the existence of higher order components and categorisation of the extended PERVAL scale dimensions (first order) into aforementioned components. The objective of study 1.2 (card-sorting exercise) is to further refine the proposed 2x2 matrix conceptualisation and deepen the understanding of PV construct. This is achieved by reconfirming the fit of extended PERVAL scale into proposed 2x2 matrix and exploring the relative categorisation of Price, Goal-relevance and Social dimensions.

Thus, following the methodology outlined in sub-section 4.3.2.5 (see p. 135), a closed card-sorting exercise is performed. The participants were divided into six groups: each consisting of 2 British national undergraduate students of Bangor University (see section 4.3.2.4, p. 134 for detail). The exercises resulted in two forms of data; qualitative data included participant comments (audio recorded and transcribed) and quantitative data including a closed card sort exercise using a Popular Placements Matrix (see section 4.3.2.6, p. 136 for detail).

5.2.2.1. Participants comments

The card-sorting exercises yielded quantitatively analysable data that captured changes in participants' perceptions across categories. The potential for error was minimised by ensuring that these exercises were administered with minimal variation enhancing the reliability of the results. The exercises were very well received by the participants with some explicitly stating the exercises were more intriguing than surveys or interviews. For instance, participant B stated "this has really got [his] mind pumping". Participant A stated that "...surveys become tedious after some time. However, this exercise did kept me on my toes throughout". Similarly, Participants C expressed that "...it was a new experience to stop and think about each statement on the card in order to sort it rather than just selecting one of the multiple choices".

5.2.2.2. Results

The closed card-sort exercises were performed as a set of two single criteria sorts sequentially for each group (see sub-section 4.3.2.5 for detail). For each sorting task, participants first classified all the cards into either (but not both) cognitive or affective components. Similarly, second sorting task involved sorting the same cards into either (not both) internal or external components. Initially, few groups placed some cards in 'not sure'

category, but by the end of the sorting exercise, every group has re-categorised all the cards into one of the higher order components. This implies that all the measurement items for extended PERVAL scale tap into the higher order components; thereby supporting P2 (that is, the PERVAL scale dimensions fit in the 2x2 matrix framework). The data for each sort was recorded into "Popular Placements Matrix" (see Table 22).

			1st Sort (% out of 100% within first sort)			*2nd Sort (% out of 100% within second sort)*		
Card no		***Card name***	***Cognitive***	***Affective***	***ns***	***Internal***	***External***	***na***
Quality	1	Has consistent quality	100%			12%	88%	
	2	Is well made	100%				100%	
	3	Has an acceptable standard of quality	88%	12%		26%	74%	
	4	Has poor workmanship	88%	12%			100%	
	5	Would not last a long time	100%				100%	
	6	Would perform consistently	100%				100%	
Price	7	Is reasonably priced	88%	12%			100%	
	8	Offers value for money	100%			12%	88%	
	9	Is a good product for the price	88%	12%		26%	74%	
	10	Would be economical	100%			26%	74%	
Emotional	11	Is one that I would enjoy		100%		100%		
	12	Would makes me want to use it	38%	62%		62%	38%	
	13	Is one that I would feel relaxed about using	12%	88%		88%	12%	
	14	Would make me feel good		100%		100%		
	15	Would give me pleasure		100%		100%		
Social	16	Would help me to feel acceptable		100%		62%	38%	
	17	Would improve the way I am perceived	26%	74%		38%	62%	
	18	Would make a good impression on other people	12%	88%		38%	62%	
	19	Would give its owner social approval	12%	88%		38%	62%	
	20	Would give me sense of pride		100%		88%	12%	
	21	Would make me feel embarrassed		100%		74%	26%	
Goal-Relevance	22	Is useful for my goal	100%			88%	12%	
	23	Is relevant for my specific goals	100%			88%	12%	
	24	Would enable me to accomplish my goals	88%	12%		88%	12%	
	25	Would hinder me in attaining my goals	100%			62%	38%	

Cards with high agreement (> 50%)

Cards with low agreement (< 50%)

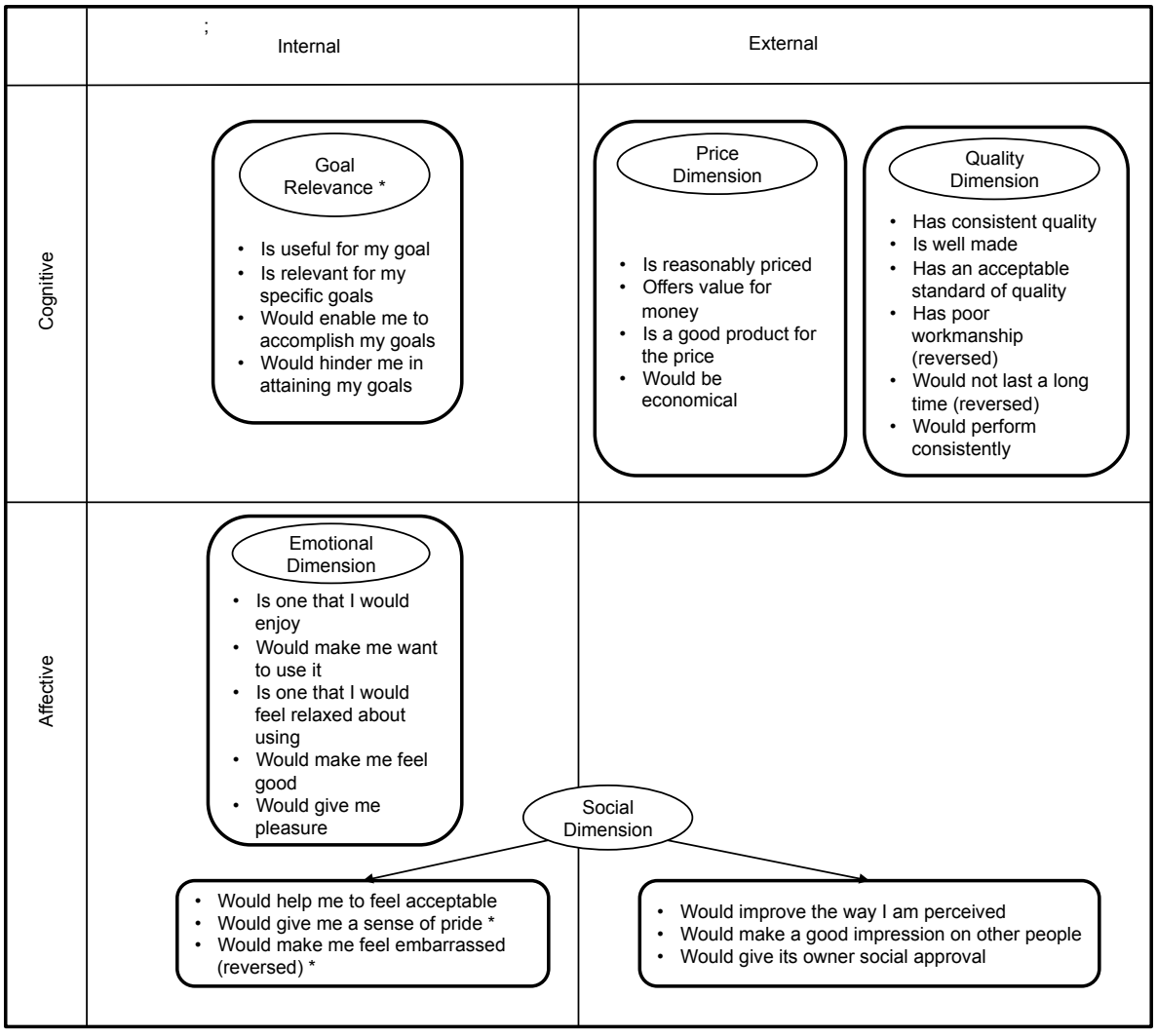
Table 22: Card-Sort Analysis using popular placement matrix.

The popular placement matrix (Table 22) reveals that each of the measurement items exhibit majority grouping with an overall agreement of over 50% (the threshold agreement as stated by Harper *et al.* (2003)). All the measurement items of proposed dimension of Goal-relevance were sorted into the cognitive-internal category, conforming to the results of study 1.1 (expert survey, see sub-section 5.2.1.6, p. 157). Consequently, (P3- Goal-relevance captures the cognitive-internal dimension and is thus integrated into PERVAL scale as the fifth dimension) is supported by these findings. Furthermore, it should be noted that no spilt was observed between internal-external categories, except for the measurement item, '(25) Would hinder me in attaining my goals', showing 62% of agreement in the internal category, which exhibit only slightly better agreement in relation to external category (38%). Thus, this measurement item will need further analysis in Phase 2.

The cognitive-external category consisted of measurement items belonging to Price and Quality, further confirming the findings of study 1.1 (see sub-section 5.2.1.6, p. 157). Further, all the measurement items referring to the Emotional dimension were notably sorted into the affective-internal category with majority agreement. however, the measurement item '(12) Would makes me want to use it' only shows 62% of agreement, needing further validation in Phase 2.

The Social dimension was sorted predominantly as an affective component, conforming to the findings of study 1.1 (see sub-section 5.2.1.6, p. 157). It should be noted that the measurement items pertaining to Social dimension were initially proposed as tapping into cognitive component (see sub-section 3.3.1.2, p. 101), but both studies (expert survey and card-sorts) in Phase 1, categorised these items as affective. Therefore, Social dimension will be categorised as tapping into affective component for Phase 2. Moreover, as evident in Table 22, a split between internal and external categories is observed (as proposed by the findings of study 1.1, sub-section 5.2.1.6, p. 157). Three measurement items ('(17) Would improve the way I am perceived, (18) Would make a good impression on other people, and, (19) Would give its owner social approval') of Social dimension were categorised as tapping into the external category, conforming to initial conceptual model (see sub-section 3.3.1.2, p. 101). Also, remaining three items ('(16) Would help me to feel acceptable, (20) Would give me sense of pride, and (21) Would make me feel embarrassed') tap in to internal category. However, as evident in Table 22, these measurement items exhibits only slightly better agreement in relation to internal-external split (62% compared to 38%). Consequently, it can be argued that there is a need for further examination of Social dimension's internal-external split in Phase 2. Furthermore, it should also be noted that the measurement items remain balanced, the spilt pertains to internal-external component,

rather than the expected cognitive-affective component. This implies that although the additional two social measurement items (adapted from Sweeney *et al.*, 1996), initially added to balance the cognitive-affective components (P4), remains relevant for balancing the Social dimensions in terms of internal-external components. Thus, although P4 is partially supported, there is no need to modify the proposed extended PERVAL scale for further confirmatory analysis (Phase 2). So, the proposed intra-variable conceptual model for PV conceptualisation (2x2 matrix model) is adjusted to portray this change (Figure 33, see below).



* proposed dimension and/or measurement items

Figure 33: Modified 2x2 matrix model in accordance with the Card-Sorts results.

5.2.3. Conclusion from Phase 1 and Hypothesis development

Phase 1 empirically deepens the theoretical conceptualisation of PV (Figure 33). This was done with two studies. Study 1.1 (expert survey) found evidence for the apriori assumption about the existence of internal-external elements of cognitive component, providing evidence in support of research proposition 1 (P1), and thereby supporting the proposed higher-order PV conceptualisation (2x2 matrix model). Moreover, the categorisation of extended PERVAL scale dimensions into the higher order components was also explored. However, the results were inconclusive for Goal-relevance, Price and Social dimensions, prompting the need for more exploratory research. The results of study 1.2 (closed card sorting) were conclusive in categorising all the first-order dimensions as tapping into higher-order components of PV (P2). In other words, study(s) 1.1 and 1.2 pointed to the relevance of higher order and first-order PV conceptualisation and operationalisation (2x2 matrix model) thereby providing support for propositions 2 (P2). Thus, the empirical results of phase 1 provide evidence that the dimensions of PERVAL scale, load on either cognitive Or affective and internal Or external components. That is, Price and Quality load on cognitive and external factors, whereas, Emotion load on affective and internal factors. However, the card sorting results for Social dimension indicated that social dimension is equally split between internal-external components (rather than cognitive-affective as propositioned (P4)). Thus, a split between Social affective internal (3 items) and Social affective external (3 items) is recommended for phase 2.

Furthermore, the results of study 1.2 imply that goal-relevance dimension taps into the cognitive and internal components of PV. Thus, Goal-Relevance dimension fulfills research gap (RG2) for cognitive internal dimension (see sub-section 2.4.6.3, p. 65). Moreover, as indicated by the result of study 1.2, Goal-relevance should be explicitly included as the fifth dimension of PERVAL scale, thereby providing evidence supporting (P3). A further recommendation for phase 2 is to cross-validate P3.

Consequently, the resultant modified 2x2 matrix model is adopted as the foundation for modifying the intra-variable conceptual model for PV. Figure 33 presents the modified inter-variable conceptual model for PV and loyalty for the second part of Phase 2 (inter-variable perspective).

5.2.3.1. Hypothesis Development for Intra-variable Perspective

The main aim is to cross-validate the proposed higher-order conceptualisation and operationalisation of PV (2x2 matrix model) and further explore the interrelationships between different PV components and dimensions. This model is developed by adopting the

integrated approach to PV, and thus should be able to provides new insights into different components of PV and their inter-relationships (see sub-section 3.3.2.1, p. 108). The proposed 2x2 model complements the Holbrook (1999)'s typology, in the respect that it provides a better understanding of PV operationalisation in terms of well-replicated PERVAL scale, and provides additional insights into cognitive-internal dimension using Goal-relevance. Based on aforementioned observations, the findings of phase 1 and P3 indicating that Goal-relevance captures the cognitive-internal component of PV, the following hypothesis is presented.

H1: Goal-relevance will capture the cognitive-internal dimension of PV.

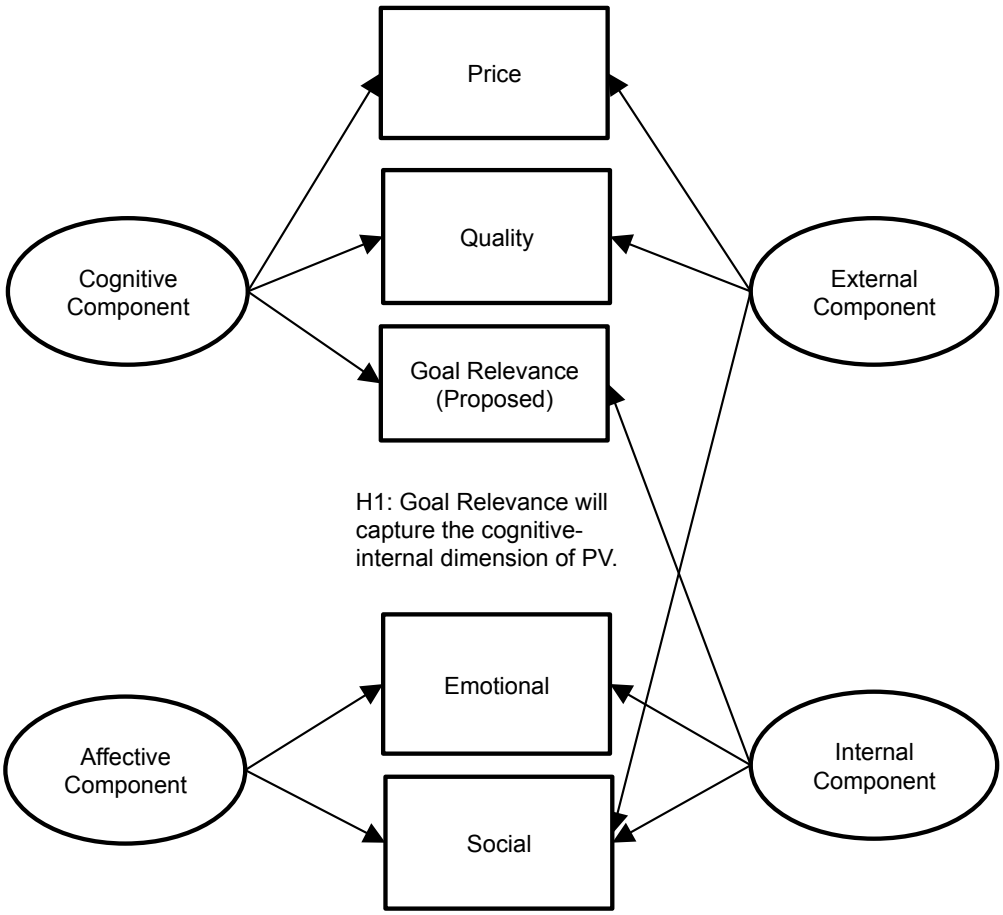


Figure 34: Intra-variable Conceptual Model for hypothesised PV conceptualisation and operationalisation.

Figure 34 presents an updated conceptual model for the intra-variable perspective. A summary of the hypothesis derived from the aims, objectives and propositions for the intra-variable perspective of PV presented in Table 23.

	RG1			***RG2***		***RG4***
Research Gap	1. There is a lack of comprehensive and practically sound PV conceptualisation and operationalisations, robustly derived from an integrated definition; that focuses on, both, the various PV components and their interrelations, to provide a more holistic PV model that captures the multifaceted conceptual richness of the construct.			2. There seems to be a gap in terms of cognitive-internal dimension of PV.		4. There is a need for extending the Social dimension of PERVAL scale by adding two more affective measurement items towards a more balanced dimension.
Aim	1. To develop and empirically validate more holistic, integrated PV conceptualisation and its operationalise using existing theoretical framworks for understanding and analysing the concept of PV.			2. To explore the role of 'Goal-relevance' in extending the assessment of perceived value, with particular reference to whether and how to extend the PERVAL scale towards a more balanced scale.		
Objective	1. To redefine and extend existing EVP theoretical framework towards more balanced higher order abstraction.	2. To operationalise proposed 2x2 matrix using integrated approach and incorporating PERVAL scale.	3. To test the convergent validity of the measurement items of PERVAL scale in terms of the cognitive/ affective - internal/external component.	5. To develop appropriate constructs and measurement items relating to the, yet unnamed, the cognitive-internal dimension of PV.	6. To empirically investigate whether the construct of 'Goal-relevance' can effectively capture the cognitive-internal dimension and hence be explicitly integrated within the PERVAL scale to achieve a more balanced scale.	4. To add, recategorize and adjust those measurement items and/ or dimensions as required to maximize the convergent validity.
Proposition	**P1:** The cognitive component of PV is conceptualised using both internal and external elements	**P2**: The PERVAL scale dimensions fits in the 2x2 matrix framework		**P3**: Goal-relevance captures cognitive-internal dimension and thus be integrated in PERVAL scale as fifth dimension		**P4**: An addition of two more measurement items is required to balance the Social dimension of PERVAL scale.
Hypothesis	Exploratory analysis (Phase 1)			**H1**: Goal-relevance will capture the cognitive-internal dimension of PV		

Table 23: Summary of the Hypothesis for the Intra-variable Perspective

5.2.3.2. Hypothesis development for Inter-variable Perspective

After cross-validating the 2x2 matrix and testing H1, phase 2 will investigate the structural dimensions of PV; proposed extended PERVAL scale's dimensions, and the effects of these PV dimensions on the behavioural outcome, loyalty. In other words, the inter-variable perspective (confirmatory study) will focus on testing the relationships between cognitive-affective components of PV and attitudinal loyalty (cognitive-affective). To identify these causal relationships among cognitive-affective dimensions of PV and loyalty, four more hypotheses were developed on the basis of past literature, extended PERVAL scale and research propositions 5 and 6.

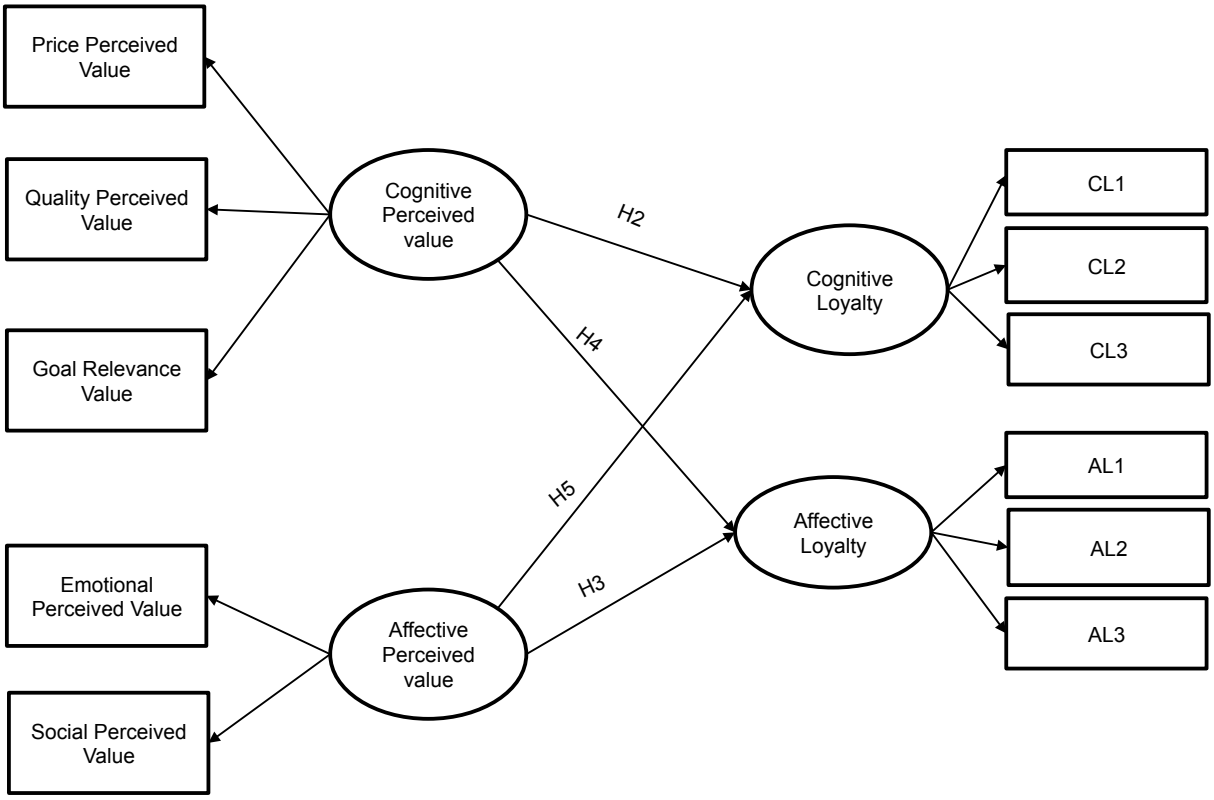


Figure 35: Inter-variable Conceptual Model for hypothesised PV and Loyalty relationships.

Based on a review of the literature (see sub-section 2.5.2, p. 94), it is argued that PV dimensions (Functional value price, Emotional value, Social value and Functional value service) have a significant positive and direct impact on loyalty (Chen and Hu, 2010; Pura, 2005; Roig *et al.*, 2009). Moreover, according to (Neal, 1998), both cognitive and affective components of PV influences attitudinal loyalty assessments. This implies that, the cognitive components of PV would positively influence cognitive as well as affective part of attitudinal loyalty. Consequently, although P5 postulates that only cognitive PV dimensions will influence cognitive loyalty, this thesis hypothesises a relationship between cognitive PV and

both components (cognitive and affective) of loyalty.

H2: Cognitive component of PV will positively influence cognitive loyalty.
H4: Cognitive component of PV will positively influence affective loyalty.

Considering the three cognitive first-order dimensions of PV, based on the above hypothesise 2 and 4, it is argued that each of these individual dimensions (Price, Quality, Goal-relevance) will also influence cognitive-affective loyalty. Research demonstrates that the Price has a significant positive influence on loyalty (Wiedmann *et al.*, 2007). For instance, Sweeney and Soutar (2001)'s definitions of Price dimension capture the essence of Functional value price as portrayed by Roig *et al.* (2009), who argued that PV has a strong positive influence on loyalty. Similarly, Wang *et al.* (2004a) hypothesised a positive effect of Functional value (Quality and Price) on loyalty. However, in regards to Goal-relevance, extant PV literature reveals that goal-relevance has been implicitly incorporated in PV measurements as a part of functional dimension using terms like 'usability' (Wiedmann *et al.*, 2007), 'ease-of-use', 'utility value' (see sub-section 2.4.6.4, p. 74). In general, these dimensions capture the usability of a product based on how well it achieves the goal to satisfy consumer needs (Wiedmann *et al.*, 2007). In the context of this thesis, Goal-relevance captures this sub-dimension of functional value explicitly as a fifth dimension. Based on these discussions, H2 and H4 can further be explored as following sub-hypothesis.

H2a: Goal-relevance dimension will positively influence cognitive loyalty.
H2b: Price dimension will positively influence cognitive loyalty.
H2c: Quality dimension will positively influence cognitive loyalty.
H4a: Goal-relevance dimension will positively influence affective loyalty.
H4b: Price dimension will positively influence affective loyalty.
H4c: Quality dimension will positively influence affective loyalty.

Additionally, considering the affective component of PV, it is argued that Emotional value arises through emotion, fun or enjoyable product attributes (Holbrook, 1999), and these affective PV assessments have a positive influence on affective loyalty (Dick and Basu, 1994; Wang *et al.*, 2004a). Further empirical findings of several studies supports this view (Animashaun *et al.*, 2016; Chen and Hu, 2010; Wang *et al.*, 2004a). Similarly, Gallarza and Gill-Saura (2006) conceptualised Social value as a combination of esteem and status value of Holbrook (1996)'s typology. In the context of the current thesis, Sweeney and Soutar

(2001)'s Social dimension capture the essence of Social dimension as discussed by Gallarza and Gill-Saura (2006). Following this line of reasoning, extant literature review and P6, the following hypothesis and sub-hypothesis are presented.

H3: Affective component of PV will positively influence affective loyalty.
H3a: Social dimension will positively influence affective loyalty.
H3b: Emotional dimension will positively influence affective loyalty.

It is also be hypothesised that affective dimensions will have influence on cognitive loyalty. Thus, the following hypothesis and sub-hypothesis are presented.

H5: Affective component of PV will positively influence on cognitive loyalty.
H5a: Emotional dimensions will positively influence cognitive loyalty.
H5b: Social dimensions will positively influence cognitive loyalty.
Table 35 provides a summary of main aims, objectives and hypothesis for this thesis.

Aim	*Objective*	*Proposition*	*Hypothesis*	
3. To empirically investigate the relationship between PV and loyalty, concerning cognitive and affective duality.	7. To investigate the effect of cognitive value dimensions on cognitive loyalty and affective value dimensions on affective loyalty.	P5: Cognitive components of PV will influence cognitive loyalty.	H2: Cognitive component of PV will positively influence cognitive loyalty.	H2a: Goal-relevance dimension will positively influence cognitive loyalty.
				H2b: Price dimension will positively influence cognitive loyalty.
				H2c: Quality dimension will positively influence cognitive loyalty.
			H4: Cognitive component of PV will positively influence affective loyalty.	H4a: Goal-relevance dimension will positively influence affective loyalty.
				H4b: Pricedimension will positively influence affective loyalty.
				H4c: Quality dimension will positively influence affective loyalty.
		P6: Affective components of PV will influence affective loyalty.	H3: Affective component of PV will positively influence affective loyalty.	H3a: Social dimension will positively influence affective loyalty.
				H3b: Emotional dimension will positively influence affective loyalty.
			H5: Affective component of PV will positively influence on cognitive loyalty.	H5a: Emotional dimensions will positively influence cognitive loyalty.
				H5b: Social dimensions will positively influence cognitive loyalty.

Table 24: Summary of hypothesis for the Inter-variable Perspective.

5.3. Phase 2: Confirmatory Phase (Online Survey)

The objective of this phase is was twofold. Firstly, focusing on the intra-variable perspective, the results of confirmatory analysis (using first order and second order CFA analysis) provide support for the modified 2x2 matrix model, along-with the extended PERVAL scale operationalisation; thereby confirming the need for incorporating Goal-relevance as a fifth dimension (H1). Secondly, focusing on the inter-variable perspective, to explore the relationships between the cognitive and affective components of PV and loyalty (H2-H5).

The following section comprises of four main parts. Firstly, sub-section 5.3.1 presents the descriptive findings, starting from data cleaning steps involved, to establishing the sample size, sample characteristics and demographic information. The data were analysed using IBM SPSS Statistics to help organise and compute the data in an accurate way. Secondly, preliminary data analysis is presented in sub-section 5.3.2, to establish the validity and reliability of the extended PERVAL scale. Thirdly, sub-section 5.3.3 presents the first and second order CFA, thereby establishing the higher-order abstraction of proposed 2x2 matrix model. Moreover, the first hypothesis (H1) is also tested based on the empirical results of second order CFA. Lastly, sub-section 5.3.4, presents the results related to formal hypothesis testing for the inter-variable perspective. The conceptual model is modified in accordance to the results of intra-variable perspective (in terms of modified extended PERVAL scale) and the results for the SEM analysis are presented, followed by the results of formal hypothesis testing. The sub-section concludes with a summary of the findings.

5.3.1. Descriptive findings

Comrey and Lee (2013), recommends a minimum of 5 or 10 cases per measurement item; this thesis has 25 measurement items, resulting in a sample size that is ideally between 125 to 250 cases. Data collection was performed using MTurk (see Chapter 4, sub-section 4.4.2, p. 139) and took place from 16th to 31st March 2017, targeting 250 respondents. During the first round, the survey was closed on 17th March 2017 due to acquiring a total of 250 responses. However, after closer inspection and data cleaning, it became evident that a number of responses did not meet one or more of the pre-set criteria (sub-section 5.3.1.1), 58 responses were considered usable from the first round (see Table 25). Thus, in order to obtain the appropriate sample size for SEM analysis (as discussed in section 4.4.3.3, p. 143), the survey was re-opened from 21st to 31st March 2017. To prevent the same respondents from filling the survey twice, worker ids were traced and matched with the already acquired data, and any repeat responses were rejected during the process of 'accepting/rejecting hit'. This 2nd round resulted in 218 responses.

5.3.1.1. Data Cleaning

This thesis has employed a sequential multiple hurdle approach (developed based on Curran, 2016). The procedure included the following steps:

- *Step 1. Correct Survey Code:* The online survey produced a six-digit survey code once the survey was successfully completed. The respondents were required to enter this code in the space provided. Once the batch was completed, the MTurk survey codes were matched to the ones generated by Foureyes to check whether the survey was fully completed or not. This aided in removing incomplete responses quickly and effectively; a total of 28 responses were rejected.
- *Step 2. Duplicate Worker IDs:* All MTurk respondent had a unique worker ID, reported in the results downloaded from MTurk. These worker IDs were matched with already collected data, and any repeat responses were rejected, citing 'you can fill this survey once only; this step resulted in a total ten rejection.
- *Step 3. Response time:* In line with Huang *et al.* (2012), who assert that the cut of 2 second per item, the minimum response time was limited to 1 minute 30 seconds. Responses that went over more than 4 hours were also rejected. A total of 95 surveys were rejected.
- *Step 4. Reverse worded items check:* The original PERVAL scale has three reverse items and one more reverse item was added as a part of proposed dimension Goal-relevance. Checking responses of such items resulted in 50 surveys being rejected.
- *Step 5. Long string analysis:* Given the fact that the length of an unbroken sequence depends on the specific scale used, this thesis implemented the guidelines put forward by Curran (2016). He postulated that the string of consistent responses, to be analysed, be equal to or greater than half the length of the total scale. This analysis resulted in 276 surveys, 9 of which were rejected.
- *Step 6. Check for USA Residency:* The aim for using MTurk was to attain a US sample (see sub-section 4.4.3.2, p. 142). However, a number of respondents did not belong to this intended group. Despite the fact that respondents answered "Yes" to the screening statement: I am a currently a US resident, there were respondents whose Internet protocol (IP) address (using tracking provided by MTurk) was tracked to Asia and other European countries. Although such responses might be useful for a cross-country analysis, for the purposes of this thesis, they were considered as invalid, a total of 94 surveys were rejected, leaving a sample size of 182.

Table 24 presents a breakdown of completed and usable surveys based on the above six steps.

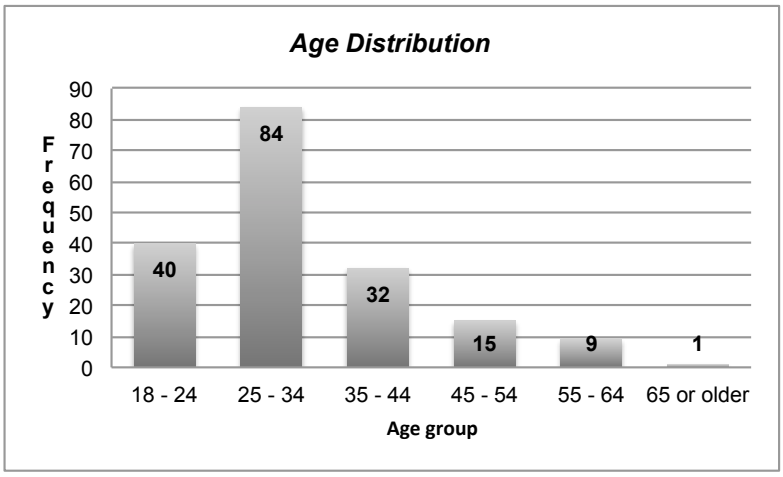
Steps	*I Batch*	*II Batch*
Total Completed	250	218
Data Cleaning Steps	Removed	Removed
1. Correct Survey Code	26	2
2. Duplicate Workers IDs	3	7
3. Response Time	36	59
4. Reverse Wording Item Check	31	19
5. Long String Analysis	5	4
6. US Resident	91	3
Total	192	94
Total Useable Survey	58	124

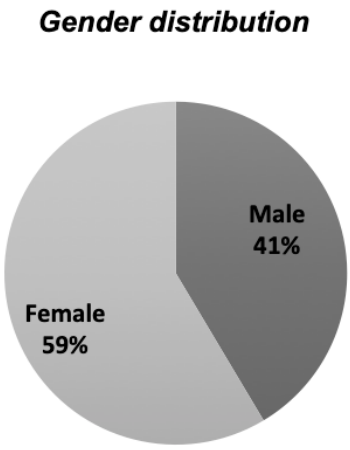
Table 25: Response breakdown for each batch.

The resultant 182 usable survey form the sample size for this study. Since Boomsma and Hoogland (2001) indicated that for an accurate evaluation of model fit, a minimum of 100 cases is required, the current sample size is considered as suitable for further analysis. Moreover, if the sample size is estimated in terms of the number of parameters or factors tested (25 factors for this study) (Bentler, 1990; Tanaka, 1987), the current sample size is considerably larger than the minimum required (124 for the current study). Thus, data was deemed suitable for SPSS analysis.

5.3.1.2. Sample Description

Figure 36 presents the demographic characteristics of the effective sample. The sample population consists of 59% female respondents. Also, most of the respondents belong to the 25-34 age group (46.1%). Minority groups represented in this sample consisted of respondents in and above the age group 55+ years.





Panel A: Distribution of Age across the sample. Panel B: Gender across the sample.

Figure 36: Demographic Characteristics of the sample

5.3.2. Preliminary Data Analysis

To test item reliability of extended PERVAL scale, this thesis will assess the Coefficient alpha or Cronbach's alpha (α) and using CFA analysis (Table 26) to generate CR and AVE values (see sub-section 4.4.4.3, p. 146 for details). The standard deviation and central tendency (mean) for all the variables are also summarised in Table 26. These variables include 25 measurement items of the PERVAL scale dimensions (Price, Quality, Emotional, Social and Goal-relevance). Firstly, Cronbach's coefficient alpha (α) value, the commonly used measure for examining internal consistency and scale reliability in cross-sectional studies (Cohen, 1983) is examined for each dimension. The α value of 0.70 or higher indicates an acceptable level of internal consistency (Hair *et al.*, 1998). The α value for extended PERVAL scale dimensions is reported in Table 26.

The six item scale measuring the quality dimension of PV adopted from Sweeney and Soutar (2001) have the reliability coefficient (α) of 0.859. However, after CFA analysis for intra-variable perspective, one item; 'Would not last a long time (reversed)', was removed from the scale, and hence, the alpha coefficient (α) for the Quality dimension increased from 0.859 to 0.872, indicating an increase in internal consistency of the dimension.

Price dimension was measured using a four item scale adopted from Sweeney and Soutar (2001). The alpha coefficient (α) for Price was 0.852. Emotional dimension was measured via the emotional sub-scale of Sweeney and Soutar (2001) PERVAL scale, and the five items used yielded an alpha coefficient (α) of 0.916.

The Social dimension was measured by adapting four items from Sweeney and Soutar (2001), and two items from Sweeney *et al.* (1996). The resultant six item scale measuring Social dimension had an alpha coefficient (α) of 0.849. However, in accordance to

the results of CFA analysis, another measurement item; 'Would make me feel embarrassed (proposed)', was removed from extended PERVAL scale hence improving the alpha coefficient (α) from 0.849 to 0.913.

Lastly, the Goal-relevance was measured using four items. Each of these were adopted from various different studies (see Table 8, p. 110) including Davis (1989), Lai *et al.* (2010), Mohd-Any *et al.* (2015), Nyer (1997), Scherer (1993), and Sigala (2006). The resultant four-item scale has the alpha coefficient (α) of 0.719. However, by deleting one item, 'Would hinder me in attaining my goals', from this sub-scale led to a significant increase in alpha coefficient (α) from 0.719 to 0.881.

Thus, it is concluded that, each dimension revealed a high level of internal consistency (α ≥ .70; Hair *et al.* (1998)) and all five dimensions had achieved more than the threshold value for Cronbach's alpha coefficient (α), indicating that the scale has acceptable internal consistency and is deemed reliable. Furthermore, by deleting three items, the overall Cronbach's alpha coefficient improved, increasing from 0.908 to 0.98, increasing the internal consistency of the scale.

Finally, the correlation coefficients between the main constructs were calculated (see Appendix G), as recommended by Hatcher and O'Rourke (2013). These correlations indicate the strength of the interrelationship between the constructs. Kline (2005) argued that high correlation coefficients (>0.85 threshold) implies that the constructs are measuring the same concept. Although all the correlations were significant, the results of the descriptive analysis suggest that all variables were low to moderately correlated, with correlations ranging from -0.204 to 0.75. Therefore, the multi-dimentionalilty the extended PERVAL scale can be assured.

Scale		Items (see Figure 37)	Mean	SD	Cronbach's Alpha
Quality	(1) Has consistent quality	Q1_Ext_Cog	1.76	0.938	0.859 (**0.872)
	(2) Is well made	Q2_Ext_Cog	1.64	0.834	
	(3) Would not last a long time (reversed)*	Q3_Ext_Cog	1.88	0.92	
	(4) Has an acceptable standard of quality	Q4_Ext_Cog	1.71	0.909	
	(5) Would perform consistently	Q5_Ext_Cog	1.77	0.928	
	(6) Has poor workmanship (reversed)	Q6_Ext_Cog	1.62	0.85	
Price	(7) Is reasonably priced	P1_Ext_Cog	2.69	1.149	0.852
	(8) Offers value for money	P2_Ext_Cog	2.2	1.016	
	(9) Is a good product for the price	P3_Ext_Cog	2.15	0.989	
	(10) Would be economical	P4_Ext_Cog	2.82	1.219	
Emotional	(11) Is one that I would enjoy	E1_Int_Aff	1.81	0.909	0.916
	(12) Would make me want to use it	E2_Int_Aff	1.74	0.763	
	(13) Is one that I would feel relaxed about using	E3_Int_Aff	1.66	0.767	
	(14) Would make me feel good	E4_Int_Aff	1.85	0.859	
	(15) Would give me pleasure	E5_Int_Aff	1.87	0.948	
Social	(16) Would help me to feel acceptable	S1_Int_Aff	2.58	1.036	0.849 (**0.913)
	(17) Would improve the way I am perceived	S2_Ext_Aff	2.78	1.095	
	(18) Would make a good impression on other people	S3_Ext_Aff	2.46	1.054	
	(19) Would give its owner social approval	S4_Ext_Aff	2.61	1.049	
	(20) Would give me sense of pride (proposed)	S5_Int_Aff	2.49	1.101	
	(21) Would make me feel embarrassed (proposed, reversed)*	S6_Int_Aff	1.71	0.938	
Goal-Relevance	(22) Is useful for my goal	G1_Int_Cog	1.65	0.818	0.719 (**0.881)
	(23) Is relevant for my specific goals	G2_Int_Cog	1.7	0.873	
	(24) Would enable me to accomplish my goals	G3_Int_Cog	1.61	0.77	
	(25) Would hinder me in attaining my goals (reversed)*	G4_Int_Cog	2.2	1.361	

*items deleted after initial analysis
** Cronbach's Alpha after Modification
SD: standard deviation

Table 26: Scale Reliability

5.3.3. Intra-variable Stage: Value scale psychometric properties

This sub-section presents the results regarding formal hypothesis testing process for the dimensional structure of the extended PERVAL scale. Having examined the validity and reliability of the measurement items, the analysis in this stage will concentrate on gaining insights into the intra-variable perspective and validating the proposed 2x2 matrix and the multi-dimensional extended PERVAL scale based on intra-variable conceptual model (Figure 34, p. 164).

To test the dimensional structure and analyse latent constructs, this thesis follows the two-step approach recommended by Anderson and Gerbing (1988). In the first step, a CFA model was developed and tested using 'model generating' framework for strategic testing (Anderson and Gerbing, 1988) in order to achieve an acceptable model fit. For the second step, the CFA model was modified to become an SEM model that represented the relationship between cognitive-affective PV and cognitive-affective loyalty. At this stage, all latent constructs were allowed to correlate freely to test whether the PERVAL scale measurement constructs conforms to the proposed model, using the 'model generating' framework for strategic testing (Anderson and Gerbing, 1988). In other words, after rejecting the initial (theoretically derived) model for CFA analysis (Figure 37) based on their psychometric properties, the model was modified and re-estimated several times to achieve a better fit. After achieving the best fit and concluding the dimensional structure of PERVAL scale, second-order CFA was employed to test the applicability of the proposed conceptual model. In what follows, hypothesis H1 was tested and reported.

5.3.3.1. First-order CFA: Hypothesised Model Analysis

Based on the conceptual model proposed (Figure 34, p. 164), a measurement model for CFA analysis was developed. This model represents the relationship between the number of factors and the manifest indicator variable that measures these factors. In the current intra-variable stage, five latent variables correspond to five dimensions of PERVAL scale: Price, Quality, Emotional, Social and Goal-relevance. Each of these five variables is measured using at least three factors or measurement items. The resultant CFA model is displayed in Figure 37.

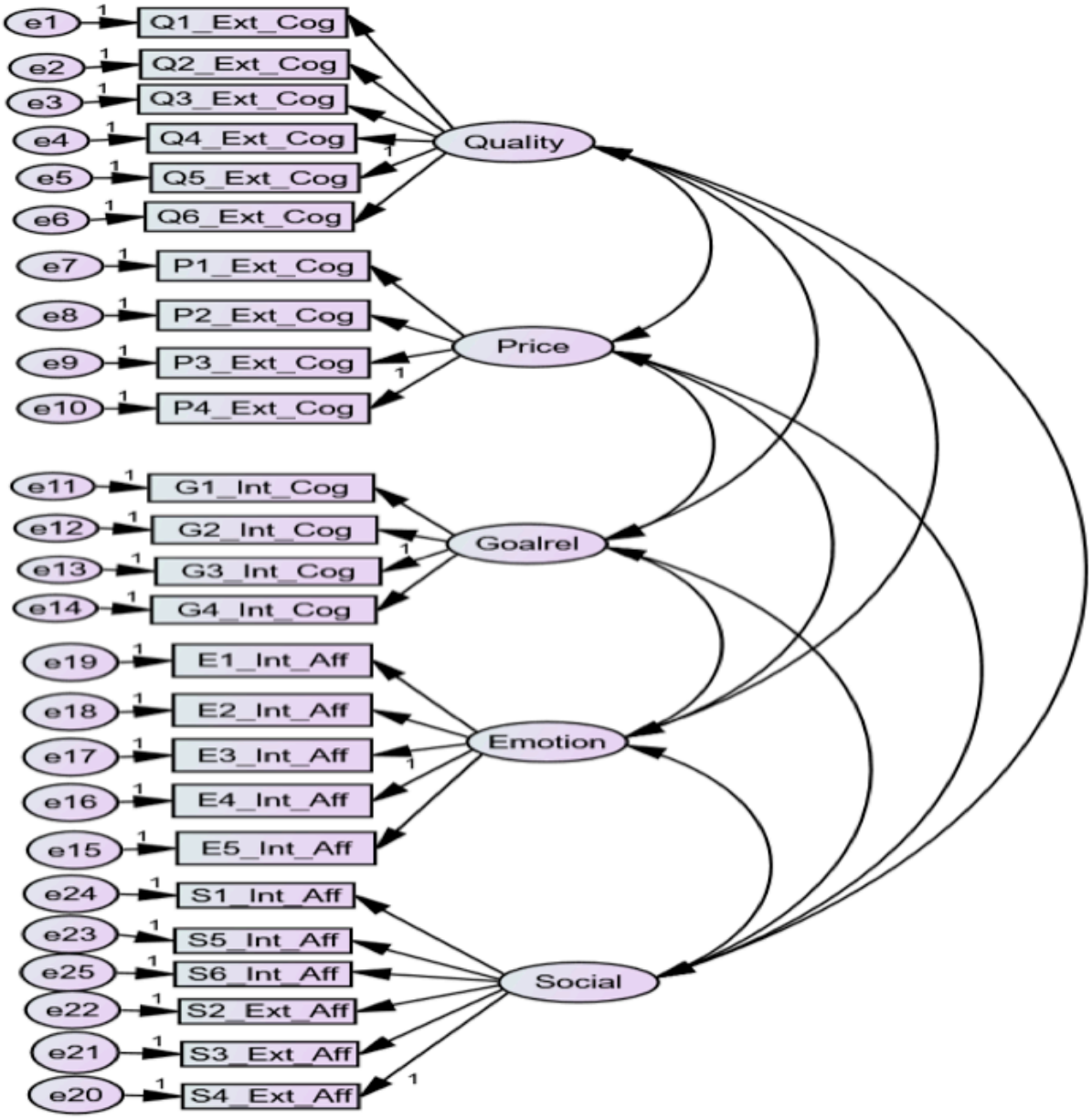


Figure 37: CFA Model for extended PERVAL scale

Using CFA, the fitness indices were assessed, along with the factor loading for every item (see sub-section 4.4.4.2, p. 145). The correlations between individual latent constructs were also computed and the results obtained for this model are presented in the Figure 38.

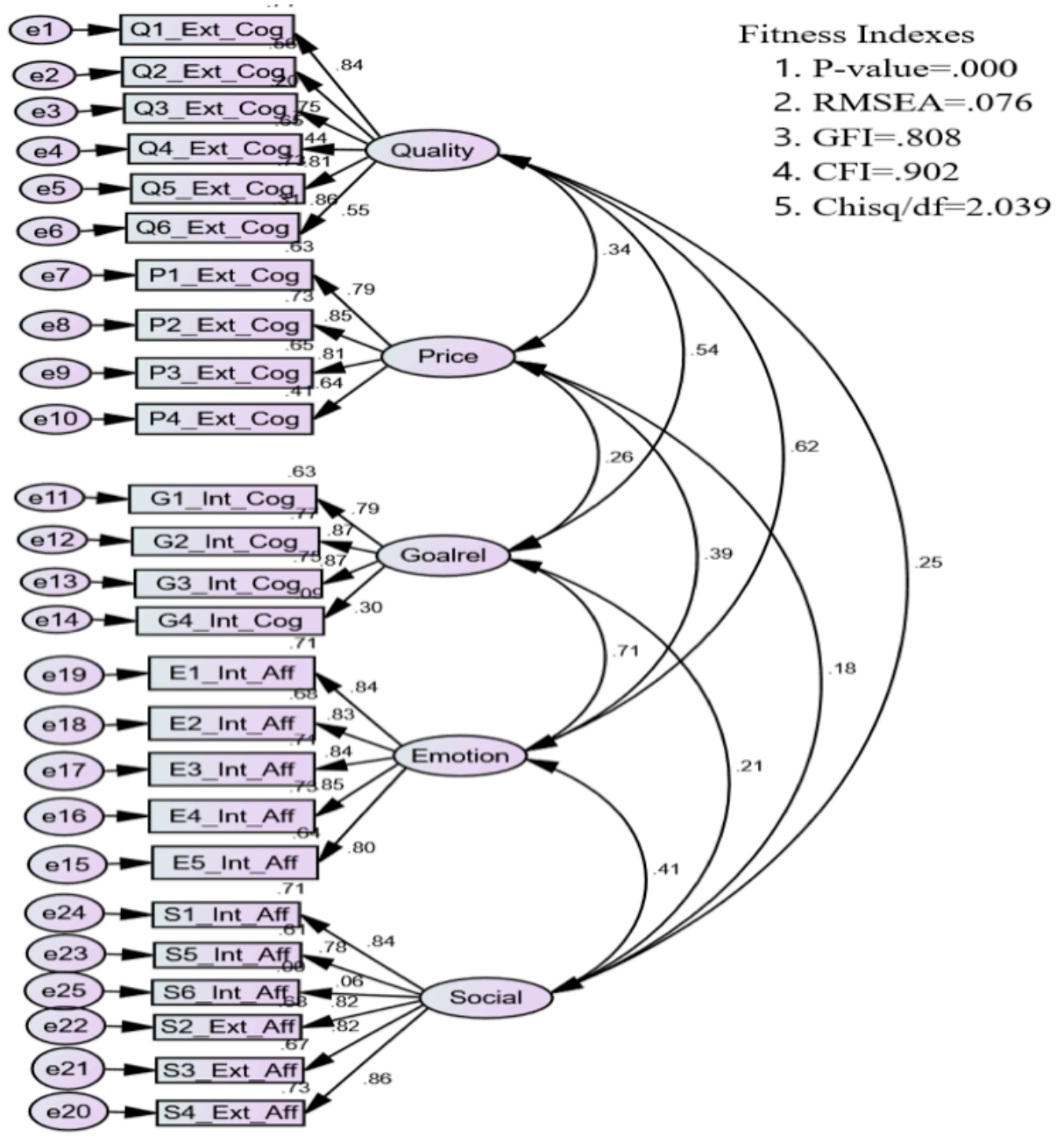


Figure 38: Output of CFA for extended PERVAL scale analysis.

Examination of CFI, GFI and RMSEA values indicate that the overall structure of the model fits the data. Moreover, the current RMSEA value of 0.076 falls between the fair model fit value of 0.055 and 0.08 (MacCallum *et al.*, 1996) signifying that further analysis can be implemented with greater confidence. The next step was to modify the model in order to achieve better model-fit. Bentler and Chou (1987) propose it is safer to drop parameters, without significantly affecting the model-fit, than to add new parameters. Thus, the factor

loadings for each variable, indicating the statistical significance of its associations with other variables, were examined and it was found that there were three variables below the threshold of 0.50 (Q3_Ext_Cog, 'Would not last a long time (reversed)', - from quality), G4_Int_Cog, 'Would hinder me in attaining my goals'- from goal-relevance), and item S6_Int_Aff, 'Would make me feel embarrassed (proposed)'- from Social). It should be noted that all three items were 'reverse worded' items, which may have lead to more noise in the data for these three items. Thus, to justifiably modify the current model, these three non-significant items were deleted, and a new model was run. The results indicated that certain fitness indexes (for instance, GFI) that are still below the required level even when the factor loading for all items is above 0.50. Thus, there is a possibility of item redundancy, which can be examined by inspecting the Modification Indexes (MI). Table 27 indicates a portion of MI for the pairs of correlated errors:

Covariances			***M.I.***	***Par Change***	***Comments***
e16	<-->	e15	15.377	0.086	Correlation between Measurement error of Emotion
e10	<-->	e7	26.225	0.29	Correlation between Measurement error of Price
e1	<-->	e11	19.6	0.103	Correlation between Measurement error of Goal-Relevance and Quality

Table 27: The Modification Indexes for first-order CFA of PERVAL scale.

According to Table 27, there are multiple large MIs that indicate item-redundancy and substantial misfit in the model. Since it is predicted that, a significant reduction in Chi-square occurs when a parameter is freely estimated for a MI value of 3.84 or above (Hair *et al.*, 1998), thus it is argued that to improve the overall model, some paths should be added based on the MI information and theoretical support (Hair *et al.*, 1998a; Kline, 2005). In regards to the current model, the error terms for two items of Emotion dimension and error terms for two items of Price dimension are greater than 10. Thus, it is argued that the CFA model should be modified by adding paths, between the pairs of error terms, to depict this higher level of correlation between them. However, although the error terms e1 and e11 also share MI>10, these error terms represent two different dimensions of the scale (unlike e16 and e15 or e10 and e7, which are part of the same dimension), and thus cannot be correlated. Consequently, the CFA measurement model is one more time modified to reflect the correlation between error terms of emotion as well as price, but not between Quality and Goal-relevance. This final model is presented in Figure 39.

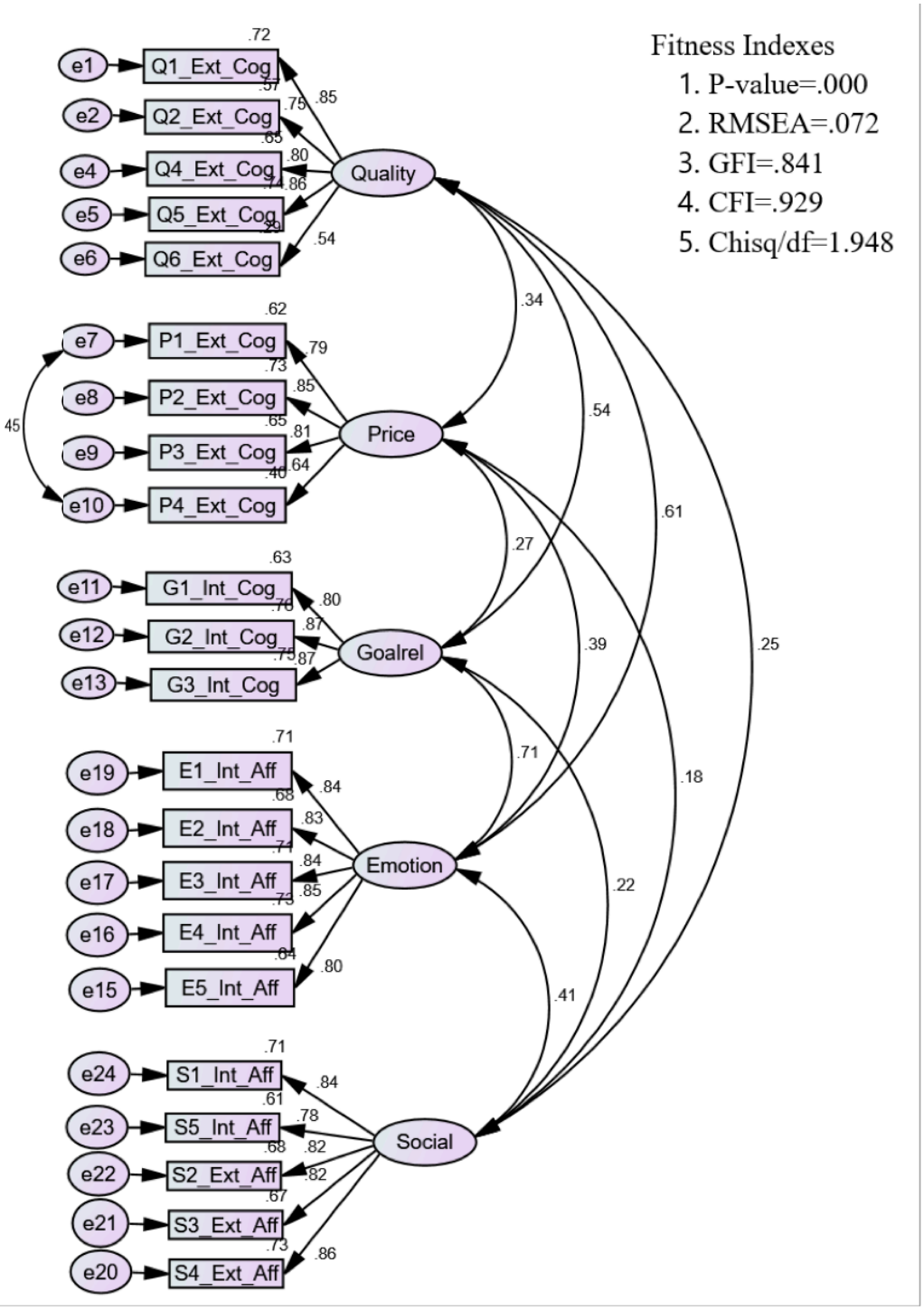


Figure 39: Output of modified CFA extended PERVAL scale analysis.

Having adapted the model based on the modification indices, the fitness indexes for the model have been improved (Figure 39). Further, all factor loadings are statistically significant, providing support for convergent validity. The results for this model are summarised in sub-sections 5.3.3.1.3.

5.3.3.1.1. Assessing Reliability

Reliability refers to the consistency of the measurement upon repeated assessment (Hatcher and O'Rourke, 2013) as discussed in section 4.4.3.3 (p. 203).

- *Item Reliability (IR):* IR is measured by the factor loading and the threshold value is greater or equal to 0.70 (Wu *et al.*, 2014). The R^2 value, the square of standardised factor loadings, also indicate item reliability (Hatcher and O'Rourke, 2013) and should be greater than 0.39 as obtained during CFA analysis. For the first hypothesised CFA model (Figure 37, p. 177), the factor loading and the R^2 value, for Q3_Ext_Cog (from Quality), G4_Int_Cog (from Golrel) and item S6_Int_Aff (from Social), fall short of the required threshold level and thus one removed to increase the item reliability. However, even after the item reduction (Figure 38, p. 178), the model's modification indices (MI) still indicated the need for further modifications (see Table 27, p. 179) in terms of on additional path to increase item reliability. However, after modifying the model according to aforementioned MIs, the final CFA model (Figure 39, p. 180) does possess relatively high indicator reliability.
- *Composite Reliability (CR):* CR values refer to the internal consistency for a multiple item scale (see sub-section 4.4.4.3.1, p. 146) and should be greater than 0.69 (Hatcher and O'Rourke, 2013; Wu *et al.*, 2014). CR calculations for all constructs in the final CFA model exceeds the expected 0.69, with a minimum of 0.840 (See Table 24) indicating that the internal consistency for all variables measuring each dimension (Price, Quality, Social, Emotional, Goal-relevance) is relatively high.
- *Average Variance Extracted (AVE):* The AVE of each construct was more than the expected 0.50, meeting the criterion to guarantee that more valid variance is explained than errors (Fornell *et al.*, 1996).

Construct	*Item*	*Factor Loading*	*CR (Above 0.6)*	*AVE (Above 0.5)*
Quality	Q1_Ext_Cog	0.85	0.876	0.591
	Q2_Ext_Cog	0.75		
	Q3_Ext_Cog	Deleted		
	Q4_Ext_Cog	0.8		
	Q5_Ext_Cog	0.86		
	Q6_Ext_Cog	0.54		
Price	P1_Ext_Cog	0.73	0.84	0.575
	P2_Ext_Cog	0.89		
	P3_Ext_Cog	0.82		
	P4_Ext_Cog	0.55		

Construct	*Item*	*Factor Loading*	*CR (Above 0.6)*	*AVE (Above 0.5)*
Emotion	E1_Int_Aff	0.86	0.914	0.68
	E2_Int_Aff	0.83		
	E3_Int_Aff	0.85		
	E4_Int_Aff	0.82		
	E5_Int_Aff	0.76		
Social	S1_Int_Aff	0.84	0.914	0.68
	S2_Ext_Aff	0.82		
	S3_Ext_Aff	0.82		
	S4_Ext_Aff	0.86		
	S5_Int_Aff	0.78		
	S6_Int_Aff	Deleted		
Goalrel	G1_Int_Cog	0.8	0.884	0.718
	G2_Int_Cog	0.87		
	G3_Int_Cog	0.87		
	G4_Int_Cog	Deleted		

Table 28: Factor loading, reliability and related information for first order CFA of PERVAL scale.

5.3.3.1.2. Assessing Vallidity

Bagozzi (1981, p. 376) suggest that "convergence in measurement should be considered a criterion to apply before performing the causal analysis because it represents a condition that must be satisfied as a matter of logical necessity". Thus, Convergent Validity (CV), for this stage, was achieved by ensuring that the fitness indexes met the required level (Figure 39) and the AVE values exceeded 0.50 (Table 28).

Next, Discriminant Validity (DV) is measured. At the construct level, this thesis utilises, the 'Variance Extracted Test' to test DV. In this test, AVE value for each of the two latent constructs should be greater than the squared co-relation (structural path coefficient) between them (Hair *et al.*, 1998). Alternatively, the square root of AVE (see Table 29) is compared with the correlation between the latent constructs and DV is displayed if the square root of AVE is greater than the correlations between them. For the current CFA model, these requirements were met for all pair of constructs, as the square root of AVE (see Table 29) is greater than the correlation between each factor. These results support that each construct in the model is conceptually and empirically distinct from each other.

Construct	Quality	Price	Emotion	Social	Goalrel
Quality	**0.77**				
Price	0.37	**0.76**			
Emotion	0.62	0.4	**0.82**		
Social	0.25	0.16	0.39	**0.82**	
Goalrel	0.54	0.29	0.72	0.22	**0.85**

Table 29: Discriminant Validity

5.3.3.1.3. Conclusion

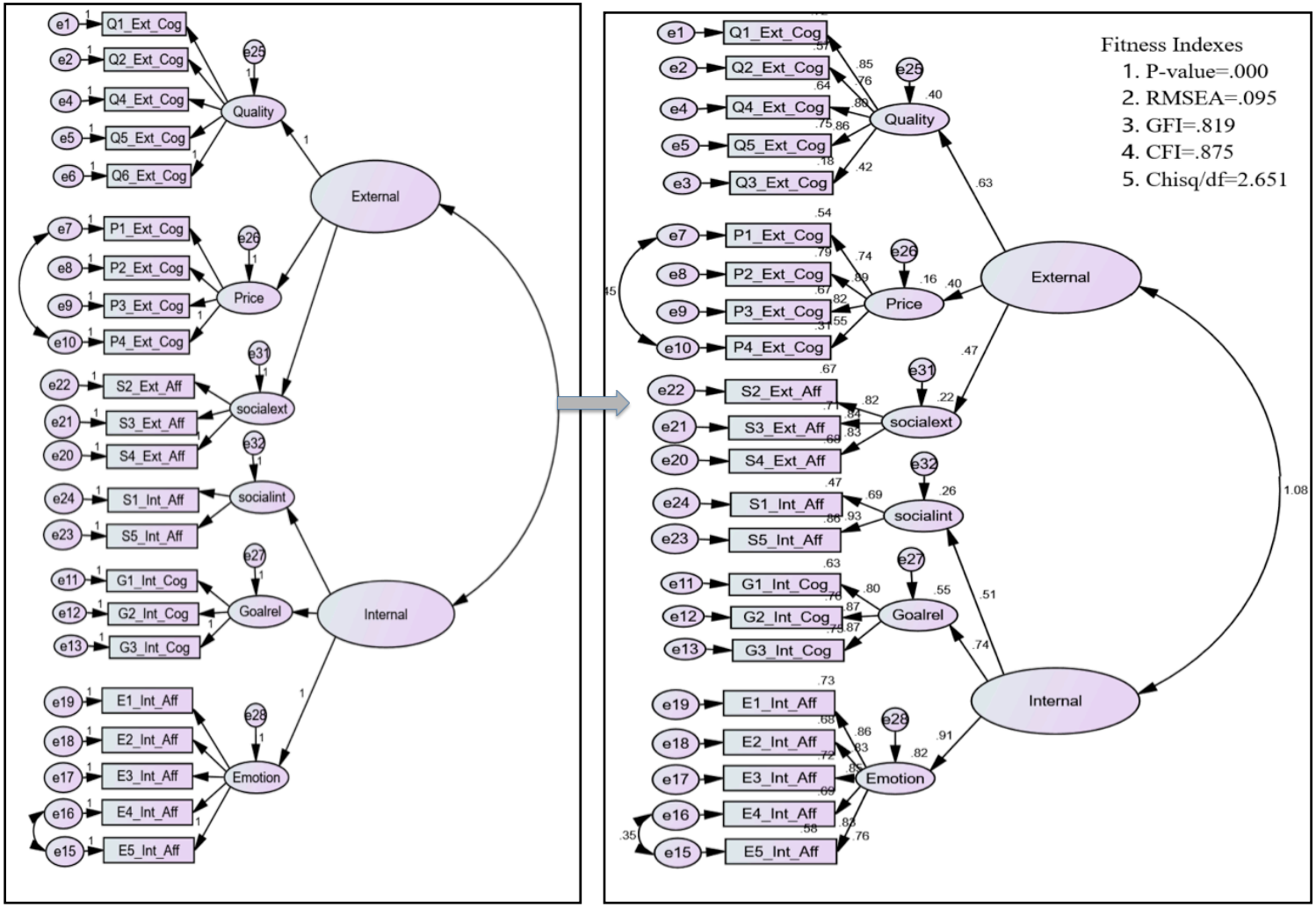
Formal analysis commenced by testing PERVAL scale model fit, that is, the five dimensions of PV scale (Quality, Price, Emotion, Social, Goal-relevance) explained by cognitive-affective and internal-external factors. To empirically examine the model fit, confirmatory factor analysis model was deemed appropriate. For the final model, an acceptable level of the model fit was achieved in accordance to Anderson and Gerbing (1988) who proposed a "two criteria" strategy for the model fit assessment. Firstly, the goodness-of-fit indices were reported, namely comparative fit indices (CFI), absolute fit index (Chi-square), indices of the proportion of variance accounted (GFI), and parsimony index (RMSEA). According to the ideal threshold values (see Table 21, p. 145), the value of 0.947 is acceptable for CFI and a value of 0.860 is acceptable for GFI, along with RMSEA value of 0.063. As such the modified first-order CFA (Figure 39, p. 180) was tentatively accepted as the final measurement model. Secondly, CR (see Table 28, p. 182) for all five dimensions of PERVAL demonstrated internal consistency and acceptable level of AVE. For estimating DV, further analysis resulted in Table (Table 29, p. 183), which presents all five dimensions as having adequate DV. The aforementioned results provide support for retaining the final model as the final measurement model, of intra-variable stage, for further analysis.

5.3.3.2. Second Order CFA: Internal/External

Based on the proposed 2x2 matrix (see sub-section 5.2.3.1, Figure 34, p. 164), the PERVAL scale dimensions tap into the cognitive or affective and internal or external paradigms. In order to assess this proposed influence, a second order CFA was designed. Chang and Dibb (2012) stated that a second-order CFA model could be explained as a first-order model with added constraints on its correlation patterns. Thus, the CFA model hypothesises a priori that:

- PV can be explained by five first-order factors (Price, Quality, Emotion, Social and Goal-relevance) and two second-order factors (Internal and External).
- Each measured item has a non-zero loading on the first order factor it was designed to measure and zero loadings on the other four first-order factors.
- Covariation among the five first-order factors is adequately explained by their regression on the second order factors, thus no double-headed arrows linking first-order factors in the hypothesised model.

Moreover, a residual error term is also added to each first level factor to account for the error in predicting the first order factors from the second order factor. So, a second order CFA model is developed, as presented in Figure 40.



Panel A: The CFA model.

Panel B: The output of CFA model.

Figure 40: Second-order PERVAL scale as tapping into the internal/external paradigm and its output post CFA analysis.

As presented in Figure 40, Price, Quality, Emotional, Social and Goal-relevance form the first-order factors, along with internal and external forming the second-order factor. Given that the fitness indices for this model do not meet the required level as recommended by the literature (see Table 21, p. 145) and the factors loadings are also below the threshold of 0.5 (with the exception of Emotion, Goal-relevance and Quality), the MI were examined to identify the correlated items. The summary of MI for the measurement model are presented in Table 30.

Covariances			***M.I.***	***Par Change***	***Comments***
e32	<-->	e31	106.031	0.626	Correlation between residuals of socialint and socialext
e24	<-->	e31	39.317	0.31	Correlation between Measurement error of socialint and residual of socialext
e24	<-->	e20	32.883	0.234	Correlation between Measurement error of socialint and socialext

Table 30: Modification Indices (MI) for Second order CFA of internal-external components.

Table 30 presents a very high correlation between e31 and e32, along with two more error terms for these items. This leads to the conclusion that socint and socialext are not separate components meaning that the Social dimension is not divided into internal and external components as suggested by the results of card sorts analysis. Consequently, further CFA analysis was performed where social dimension was modelled in two ways: as split into internal-external components; as completely tapping into internal component and as completely tapping in to external component (see Appendix H for detail). The results of these CFA analyses revealed that Social dimension completely taps into external components. Thus, the measurement model for CFA is modified to reflect this change.

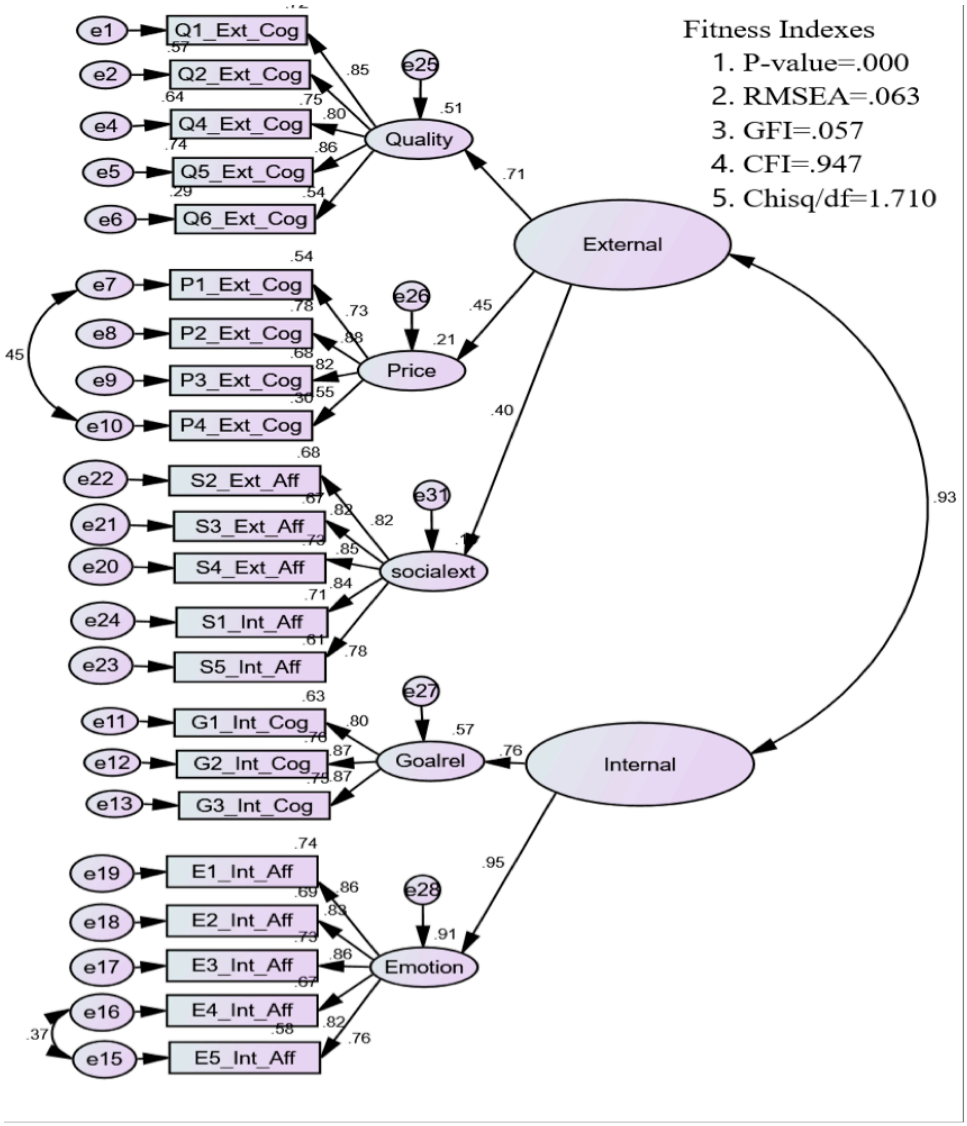


Figure 41: Output of modified second-order CFA for Internal-External Components of PV.

The fitness indexes, presented in Figure 41, achieved the required level after the modification is made. Based on this model, it is clear that all the items have a significant and meaningful loading with their respective first-order factors. Additionally, all first order factors have a significant and meaningful path to second order factors. Thus, it is concluded that this model (Figure 41) supports the existence of internal and external as second-order factors and they accurately capture common variance among the five dimensions of PERVAL scale.

Based on the better model fit, and the minimal MIs, it is concluded that the second order model shown in Figure 41 is optimal in representing the external-internal paradigm of PV.

5.3.3.3. Second order CFA: Cognitive/Affective

The next step is to examine the cognitive and affective components using the second order CFA. For this step, the modified model for PERVAL scale dimensions is used, and the social dimension is not represented as two separate dimensions. The model for this analysis and its output is presented in Figure 42.

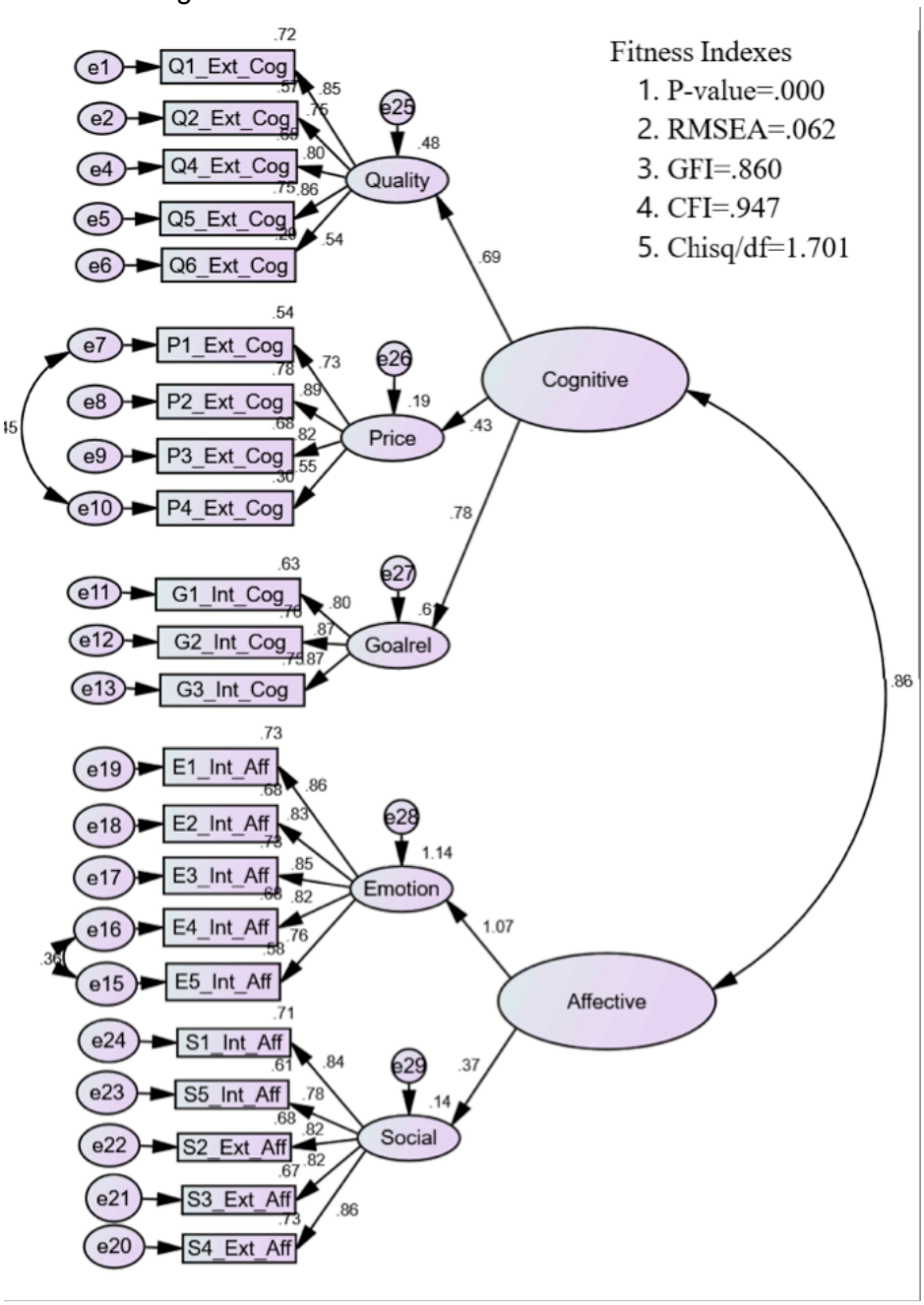


Figure 42: Output of modified second-order CFA for Cognitive Affective Components.

As presented in Figure 42, the fitness indexes have achieved the required level for good model fit, although factor loading for Price and Social are below the threshold of 0.5. Thus, no item deletion and modification is required, it is concluded that all items have a significant and meaningful loading on the first order factors, five PERVAL scale dimensions. Further, the first order factors had significant and meaningful paths to second order factors. Similar to the previous model for internal-external paradigm (Figure 41, p. 187), the results of this model (Figure 42) also suggest that the cognitive and affective factors act as second-order factors and capture common variance among the five PERVAL scale dimensions.

5.3.3.3.1. H1 hypothesis

As discussed in section 5.3.1, H1 proposes that Goal-relevance would fulfill the research gap identified by the 2x2 theoretical model. In other words, Goal-relevance will capture the cognitive-internal dimension of PV. After careful analysis of second order CFA for the internal-external paradigms (Figure 41, p. 187), it is concluded that Goal-relevance has a statistically significant and meaningful path to the internal perspective and thus it is considered to reflect the internal second-order factor. Moreover, the results of second order CFA for the cognitive-affective paradigms (Figure 42, p. 188) also suggests that Goal-relevance has a statistically significant and meaningful path towards cognitive factor and thus, it is considered to reflect the cognitive-internal factor; thereby supporting H1.

5.3.3.3.2. Section Summary

One of the objectives of the intra-variable perspective analysis is to re-examine and confirm that the measurement scale for PV constructs with five dimensions (proposed extended PERVAL scale) still holds. In sub-section 5.3.3.1, the extended PERVAL scale was statistically verified using CFA. Moreover, the 2x2 theoretical framework was also verified by adhering to the following steps:

The major fit indices were observed, and min level for each fit index was achieved for every CFA model tested (CFA for testing uni-dimensionality of extended PEVAL scale, second-order CFA for testing the cognitive-affective paradigm and second-order CFA for internal-external paradigm).

- Each model was satisfactory in its goodness-of-fit for each model.
- Composite reliabilities for the latent factors exceeded 0.70.
- Variance extracted estimates for each factor exceeded 0.50.

- Discriminant validity was demonstrated using the 'Variance Extracted Test' for both, the cognitive-affective and internal-external paradigms. (Hatcher and O'Rourke, 2013)

Based on the above, the second order CFAs were further analysed to support H1. The next step is to apply SEM to build on and modify the CFA model for predicting the relationships between cognitive-affective PV and cognitive-affective loyalty constructs. Following sub-sections will elaborates on the SEM procedure and presents the results of the hypothesis testing.

5.3.4. Inter-Variable Stage: structural model

This section elaborates on the procedure and results of SEM to assess the relationship between loyalty and PV. The conceptual model for this inter-variable perspective is presented in Figure 43 (based on Figure 35, p. 166).

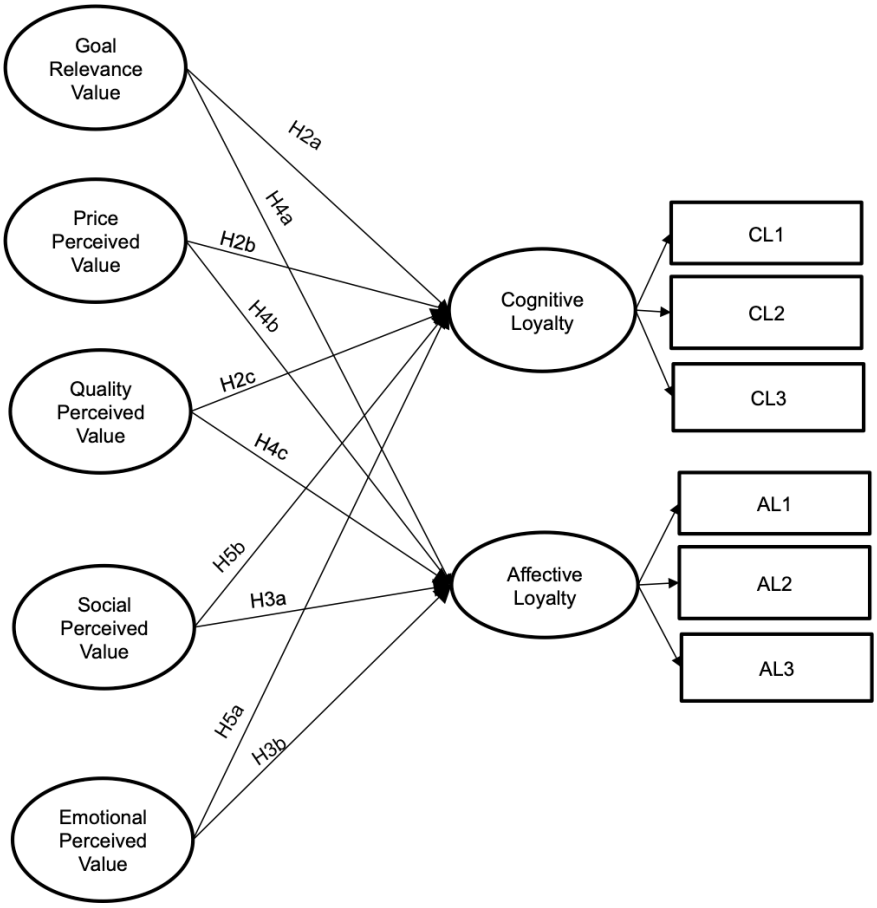


Figure 43: Conceptual model for SEM analysis following Inter-Variable Perspective. \

Based on the conceptual model (Figure 43) and CFA findings from Intra-variable perspective (see Figure 42), a SEM model was developed to test the hypothesised relationships between cognitive PV and cognitive loyalty, along with affective PV and affective loyalty. Figure 44 presents the SEM model for inter-variable analysis of relationships between both constructs.

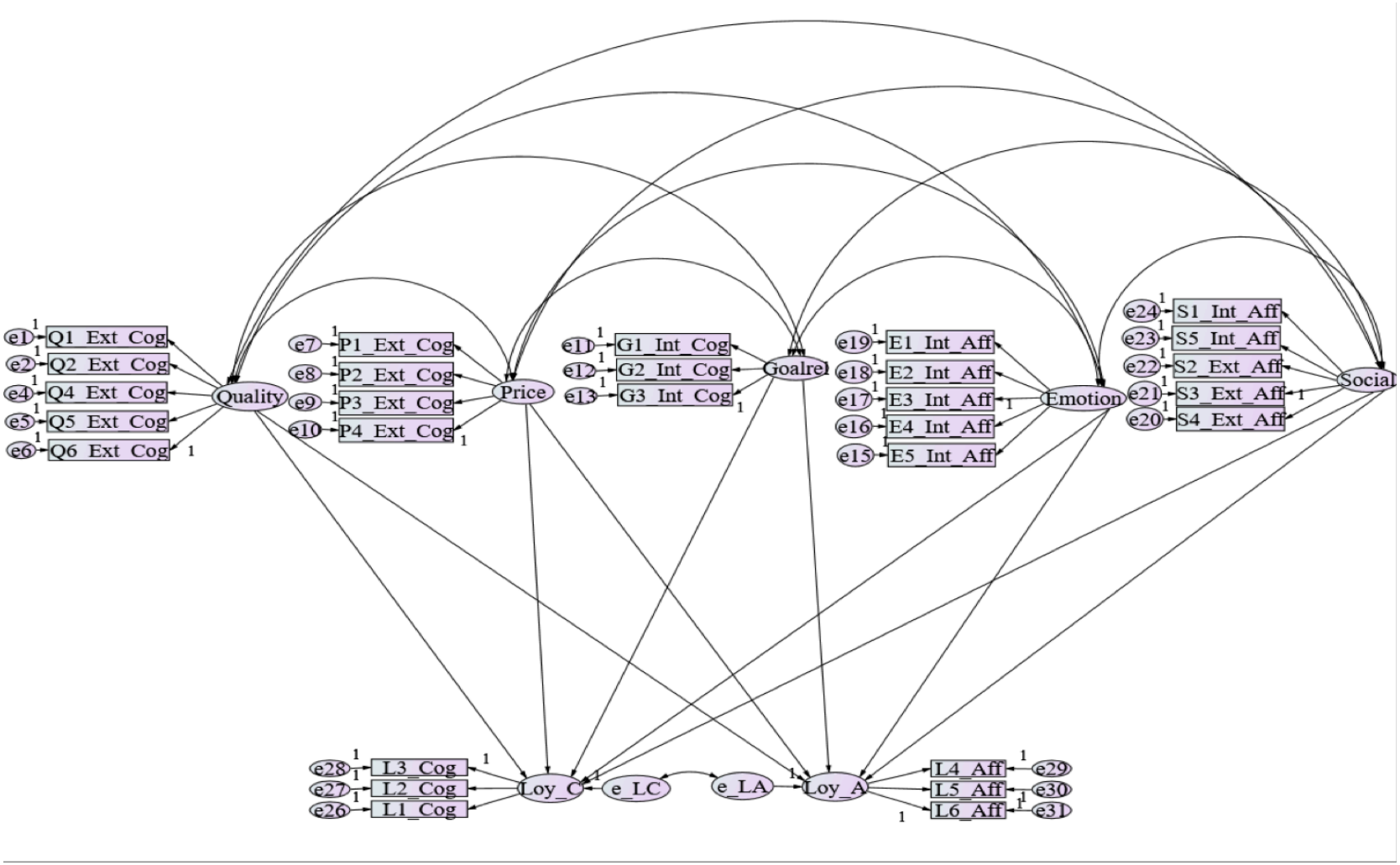


Figure 44: SEM model for analysing the Inter-Variable Perspective.

As presented in Figure 44, SEM analysis will focus on how the cognitive PV dimensions affect the cognitive and affective loyalty dimensions; and how the affective PV dimensions will affect the cognitive and affective loyalty dimensions, thereby testing hypothesis H2, H3, H4 and H5. Specifically, the direct effects of the proposed dimension, Goal-relevance, will also be tested in order to examine the impact of Goal-relevance on cognitive loyalty and hence the need to incorporate Goal-relevance in the overall PV assessments.

5.3.4.1. Hypothesized Model Analysis

Keeping in mind the conceptual model (Figure 43, p. 191), the final CFA model (Figure 39, p. 180) was employed as the extended PERVAL scale for PV evaluations. Thus, this model (Figure 44) represents the relationship between the five PERVAL scale dimensions (Price, Quality, Emotional, Social and Goal-relevance) and the cognitive-affective loyalty. Each of the cognitive and affective loyalty factors has three measurement items. The results of SEM analysis are presented in Figure 45.

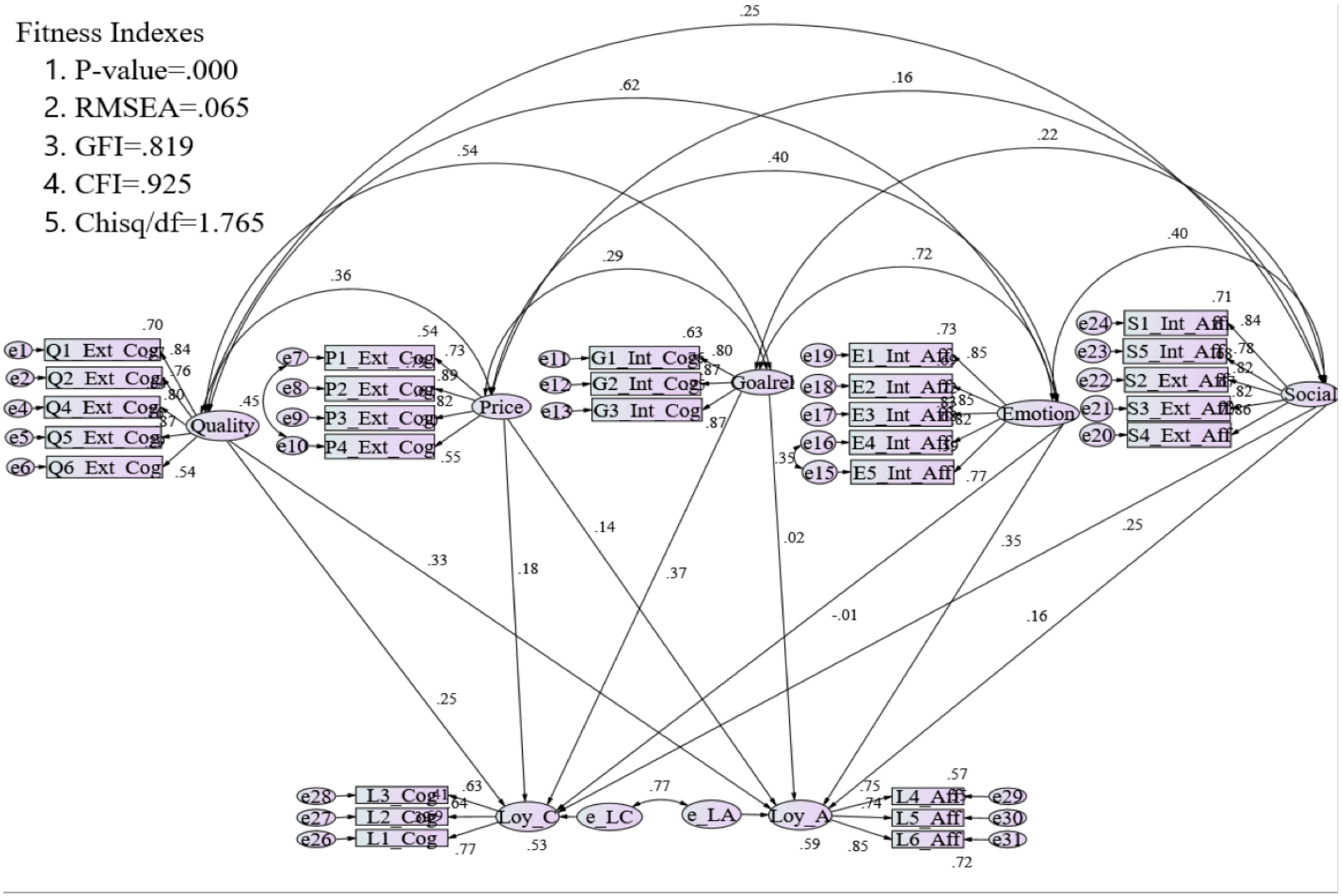


Figure 45: The output of SEM model for Inter-Variable Perspective.

Factor loading for each factor is significant and the output (see Figure 45) presents the initial analysis of CFI, GFI and RMSEA suggesting an acceptable model fit. The results of CFA output were examined to find the most appropriate modifications that would improve the model fit. After careful consideration of the MI (summarised in Table 31), it was concluded that a correlation path should be added between the error terms of measurement item for affective loyalty. Here, the correlated error terms signify items with llikely overlapping meaning for the respondents. However, it should also be noted that such correlated error terms, within construct, would not corrupt the meaning of the construct, only accounting for possible redundancy regarding two survey items that were perceived as overlapping by respondents.

Covariance			***M.I.***	***Par Change***	***Comments***
e30	<-->	e31	12.011	0.225	Correlation between measurement error of affective loyalty
e29	<-->	e30	13.732	-0.232	Correlation between measurement error of affective loyalty
e27	<-->	e30	27.888	0.556	Correlation between measurement error of cognitive and affective loyalty

Table 31: Summary of MI for SEM.

After the aforementioned modification was made, the SEM model was modified to show this change in the path diagram. The output of this SEM analysis (see Figure 46) showed that the model fit with data was improved with all factor loadings being statistically significant and meaningful. With all the indices demonstrating a good fit, any other modifications may overcomplicate the model. The, the next step is to test the remaining hypothesis.

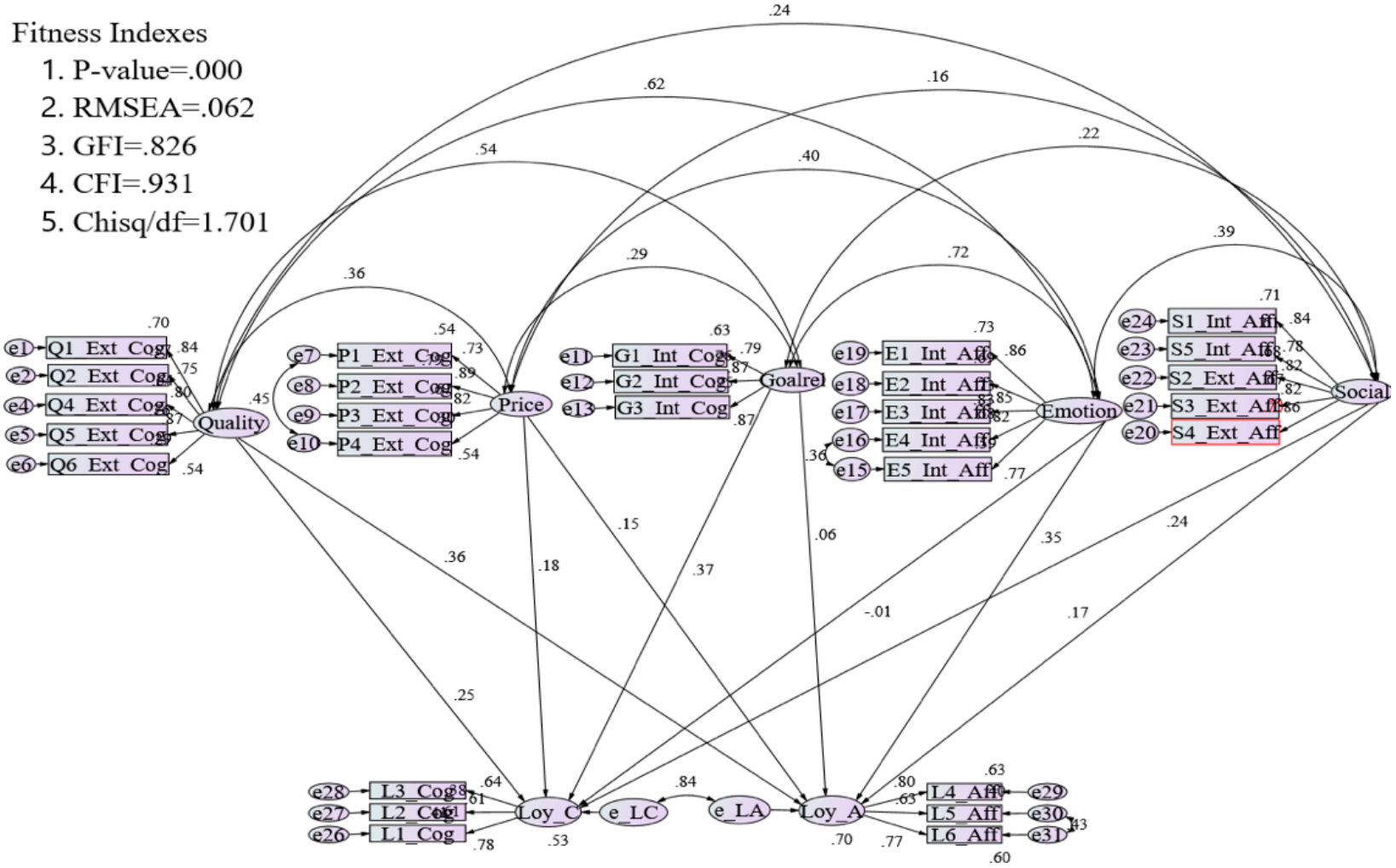


Figure 46: SEM output for Modified model.

5.3.4.2. Hypothesis testing for Inter-Variable Perspective (H2, H3, H4 and H5)

The hypothesised model (Figure 46, p. 196) was found significant (χ^2/df = 1.710, p < .05), but other fit indices (CFI = .931, RMSEA = .062, GFI = .826) demonstrated an acceptable fit, with statistically significant paths; and no further model re-specifications were required. It is concluded that the hypothesised relationship in the conceptual model (Figure 43, p. 191) can be tested using SEM analysis. The empirical results of SEM analysis are summarised and presented in Table 32.

Hypothesis		***Standardized Path Coefficient (β)***	***Direct Effect***	***S.E.***	***C.R.***	***P value***
H2a	Loy_C <--- Goalrel	0.371	0.561	0.189	2.973	0.003**
H2b	Loy_C <--- Price	0.179	0.272	0.132	2.055	0.04*
H2c	Loy_C <--- Quality	0.246	0.539	0.234	2.304	0.021
H3a	Loy_A <--- Social	0.166	0.216	0.092	2.355	0.019*
H3b	Loy_A <--- Emotion	0.354	0.587	0.204	2.884	0.004**
H4a	Loy_A <--- Goalrel	-0.061	0.107	0.181	0.59	$0.555^{(NS)}$
H4b	Loy_A <--- Price	0.147	0.26	0.131	1.99	0.047*
H4c	Loy_A <--- Quality	0.362	0.923	0.251	3.675	***
H5a	Loy_C <--- Emotion	-0.008	-0.011	0.199	-0.057	$0.954^{(NS)}$
H5b	Loy_C <--- Social	0.242	0.272	0.094	2.886	0.004**

* P < 0.05.; ** P < 0.01; *** P < 0.001

Table 32: Summary of direct SEM analysis

H2 examined the relationships between cognitive PV dimension (Goal-relevance, Price and Quality) and Cognitive Loyalty. It states that Cognitive component of PV will positively influence cognitive loyalty. **H2a** states that Goal-relevance dimension will positively influence cognitive loyalty. As predicted, the SEM output suggests Goal-relevance (β=0.371, p<0.005) has a significant and positive effect on cognitive loyalty. Additionally, Goal-relevance has the strongest standardised direct effect on cognitive loyalty (0.561), concluding that Goal-relevance can be considered as the strongest predictor of cognitive loyalty, as compared to Price and Quality. This means that respondent's cognitive loyalty may increase when they perceived an increase in the Goal-relevance of the product. Thus, H2a is supported.

H2b states that Price dimension will positively influence cognitive loyalty. Based on the results of SEM, Price has a significant and positive influence on cognitive loyalty (β=0.179, p<0.05). Thus, the Price increase has an overall significant direct effect on the increase in cognitive loyalty as depicted by the direct effect coefficient (0.272). Thus H2b is supported.

H2c states that perceived Quality dimension will positively influence cognitive loyalty. The result of SEM analysis indicates that quality dimension has a positive influence on cognitive loyalty (β=0.246, p<0.05). In other words, perceived Quality value has a significant and positive influence on cognitive loyalty (Direct effect= 0.539). So, an increase in the Quality perception of the product should significantly and positively influence the cognitive loyalty of the respondents. Thus, H2c is supported.

H3 states that Affective component of PV will positively influence affective loyalty. Specifically, **H3a** states that Social dimension will positively influence affective loyalty.. Consistent with the hypothesis, affective loyalty was found to be positively influenced by the social dimension (β= 0.166, p< 0.05). That is, respondents' affective loyalty increases when they perceive that their social value perception regarding the product improves. Quantitatively, for each unit of increase in the Social dimension, customers' affective loyalty increases by 0.166 units. Thus, H3a is supported. **H3b** stated that Emotional dimension will positively influence affective loyalty. Careful examination of the Emotional factor reveals that it has a significant direct effect on affective loyalty (β= 0.354, p< 0.005), whereas there is a negative effect on cognitive loyalty. Thus, H3b is supported.

H4 stated that Cognitive component of PV will positively influence affective loyalty. More specifically, **H4a** stated that Goal-relevance dimension will positively influence affective loyalty. SEM analysis does not support the hypothesis, as the results show that Goal-relevance did not have a statistically significant effect on cognitive loyalty (β= -0.061, p>0.5). In addition, the direct effect of Goal-relevance on affective loyalty is only 0.107. Thus, H4a is not supported. **H4b** stated that Pricedimension will positively influence affective loyalty.As postulated, the results revealed that the Price has a significant and positive influence on affective loyalty (β = 0.147, p< 0.05) but to a much lesser extent than price affect cognitive loyalty (see Table 31). Thus, H4b is supported. **H4c** states that Quality dimension will positively influence affective loyalty. The results show that the influence of quality on affective loyalty (β=0.362, p<0.000) is much stronger in comparison to its effect on cognitive loyalty (β=0.246, p<0.05). The direct effect of Quality on affective loyalty is 0.923, implying Quality has a more significant influence on affective loyalty as compared to cognitive loyalty. Thus, H4c is also supported.

H5 stated that Affective component of PV will positively influence on cognitive loyalty.. Specifically, **H5a** stated that Emotional dimensions will positively influence cognitive loyalty. The results of SEM reveal that Emotional value has a non-significant, negative influence on cognitive loyalty (β= -0.008, p>0.5). The direct effect of emotional dimension on cognitive

loyalty is also negative (-0.011). Thus, H5a is not supported.

H5b stated that Social dimensions of PV will positively influence cognitive loyalty. The results of SEM show that the Social dimension has a positive and stronger effect on cognitive loyalty (β= 0.242, p< 0.05) as compared to affective loyalty (β= 0.166, p< 0.05). The direct effect of social dimension on cognitive loyalty (0.272) is more than the direct effect on affective loyalty (0.216). Thus, H5b is supported.

5.3.4.3. Section summary

This section examined the inter-variable conceptual model for PV and loyalty (Figure 43, p. 191), with specific focuses on the relationship between PV and loyalty. The SEM model was tested and reported. After achieving the model fit, further analysis was performed to analyse the proposed relationships. The results of SEM analysis supported the hypothesised relationships between the cognitive-affective dimensions of PV and the cognitive-affective dimensions of loyalty. Furthermore, the hypotheses presented in section 5.2.3.1 (p. 163) were also tested and the results discussed.

5.4. Conclusion

In this chapter, the findings from the exploratory phase 1 (study 1.1 and 1.2) and confirmatory phase 2 (intra-variable and inter-variable view) were analysed and presented. The results of the exploratory phase provided support for the proposed conceptualisation (2x2 matrix model) and operationalisation (extended PERVAL scale). For the confirmatory phase, the proposed extended PERVAL scale was used to explore the relationships between the cognitive-affective components of PV and loyalty.

Data was analysed using AMOS 24 and IBM SPSS 24 statistical programs to perform CFA and SEM analysis for hypothesis testing. This thesis followed the "two-step approach" recommended by Anderson and Gerbing (1988) (see sub-section 5.3.3, p. 176 for details). The SEM model (Figure 44, p. 192) was tested and revised to achieve a statistically acceptable model that helped to provide insights into the theoretical framework and test the hypothesis outlined in section 5.2.3 (p. 163). SEM analysis found an acceptable fit for the proposed model of the relationships between cognitive-affective dimensions of PV and the cognitive-affective dimensions of loyalty. All the hypotheses were supported, except H4a and H5a. A brief summary of the study 2.1's major findings are presented in Table 33.

Hypothesis		***Path Correlation***	***Results***	
H1	H1: Goal-relevance will capture the cognitive-internal dimension of PV.	-----	Supported	Goal-relevance was found to be first-order dimension capturing the cognitive-internal component of PV
H2: Cognitive component of PV will positively influence cognitive loyalty.	H2a: Goal-relevance dimension will positively influence cognitive loyalty.	Goal-relevance ----> Cognitive Loyalty	All Supported	Consistent with literature, all three cognitive PV dimensions were found to be main determinants of cognitive loyalty. Yet, it should be noted that goal-relevance was found to be the strongest predictor of cognitive loyalty.
	H2b: Price dimension will positively influence cognitive loyalty.	Price ----> Cognitive Loyalty		
	H2c: Quality dimension will positively influence cognitive loyalty.	Quality ----> Cognitive Loyalty		
H3: Affective component of PV will positively influence affective loyalty.	H3a: Social dimension will positively influence affective loyalty.	Social ----> Affective Loyalty	All Supported	Consistent with extant literature, both the affective dimensions were found to have positive and significant influence on Afective loyalty.
	H3b: Emotional dimension will positively influence affective loyalty.	Emotional ---->Affective Loyalty		
H4: Cognitive component of PV will positively influence affective loyalty.	H4a: Goal-relevance dimension will positively influence affective loyalty.	Goal-relevance ----> Affective Loyalty	Not Supported	Cognitive Goal-relevance dimension was found to have no significant influence on affective loyalty.
	H4b: Price dimension will positively influence affective loyalty.	Price ----> Affective Loyalty	Both Supported	Both cognitive dimensions, price and quality, displayed positively significant influence on affcetive loyalty
	H4c: Quality dimension will positively influence affective loyalty.	Quality ----> Affective Loyalty		
H5: Affective component of PV will positively influence on cognitive loyalty.	H5a: Emotional dimensions will positively influence cognitive loyalty.	Emotional ----> Cognitive Loyalty	Not Supported	Affective Emotional dimension had no significant influence on cognitive loyalty.
	H5b: Social dimensions will positively influence cognitive loyalty.	Social ----> Cognitive Loyalty	Supported	Social dimension was found to have a much stronger infuence on cognitive loyalty, as compared to its influence on affective loyalty.

Table 33: Summary of hypothesis Results for SEM Analysis

Chapter 6. Discussion and Conclusion

6.1. Chapter Introduction

This thesis contributes to existing knowledge by addressing the conceptual difficulties recognised in PV literature (Gallarza *et al.*, 2019; Zauner *et al.*, 2015), by (1) proposing a second order multidimensional conceptualisation and operationalisation (2x2 matrix), by integrating Groth's (1995) EVP model, Sweeney and Soutar's (2001) PERVAL scale and Woodruff's (1997) value hierarchy, and; (2) explicit inclusion of Goal-relevance to extend PERVAL scale; (3) broadening the existing value-satisfaction-loyalty (V-S-L) chain by inclusion of second-order PV construct in V-S-L chain and capturing the effects of these components of PV (cognitive-affective) on the duality for loyalty (cognitive and affective loyalty).

The focus of this study is on deepening the PV conceptualisation and its operationalisation rather than generalisability. Nevertheless, the starting points, for both conceptualisation (EVP model) and operationalisation (PERVAL scale), are well-replicated and cross-validated in different contexts. Consequently it can be argued that, since the individual elements of this model are supported by both, the earlier conceptualisations and the empirical findings of Phase 2, 2x2 matrix model can potentially be considered as robust. However, there is still a need to further explore its applicability on a broader scale using different contexts.

On a conceptual level, this study supports the findings of Klanac (2013) that the three approaches (benefit-cost, means-end and experiential) of PV are compatible and can be efficiently integrated into a comprehensive model that could overcome the limitations faced by individual approaches. Additionally, given the abstract nature of PV, the overall existence of proposed components and dimensions may not be questionable, however, there may exist variations in the degree of the relative importance of various components and dimensions. Thus, this study enriches the PV conceptualisation by encompassing the complexity of PV concept.

Further theoretical contribution is the provision of a more sophisticated understanding of the relationships between the cognitive-affective components of PV and loyalty. Consequently, the academic interest shifts from a focus on overall PV and loyalty inter-relationships to focus on understanding the nuances and intricacies of the inter-relationships between the cognitive-affective components of respective constructs. The empirical contribution is the incorporation of Goal-relevance as the fifth dimension of PERVAL scale.

Finally, the managerial contribution of this thesis is to aid practitioners in gain better insights into PV and the relationships between cognitive and affective components of PV and the duality of loyalty. More specifically, the higher direct effect of Goal-relevance on cognitive loyalty will aid the practitioners to explicitly account for the influence of goals in the assessments of PV and loyalty measurements, thus enhancing and streamlining their marketing strategies.

The remainder of this chapter is divided into three main sections; Section 6.2 briefly reiterates the main aims of this thesis, presenting a discussion of the main findings and implications of three studies (Phase1 and 2) undertaken in this thesis. Sub-section 6.2.1 provides a concise summary of model conceptualisation and its operationalisation, with special attention towards explicitly capturing Goal-relevance. The next sub-section (6.2.2) then presents the findings from inter-variable perspective, relating these findings to the relevant literature. Following section (6.3) presents the theoretical, empirical and managerial contributions of this thesis. Finally, section 6.4 acknowledges the limitations of this thesis. The discussion regarding the limitations and avenues of research, accentuate potentially interesting future research directions that are recommended for exploration.

6.2. Discussion of Main Findings

Three research aims underlie this thesis, namely (1) To develop and empirically validate more holistic, integrated PV conceptualisation and its operationalise using existing theoretical framworks for understanding and analysing the concept of PV; (2) To explore the role of 'Goal-relevance' in extending the assessment of perceived value, with particular reference to whether and how to extend the PERVAL scale towards a more balanced scale. (3) To empirically investigate the relationship between PV and loyalty, concerning cognitive and affective duality. These aims were addressed across three studies (two studies in Phase 1 and one in Phase 2). More specifically, Phase 1 or exploratory phase establish a foundation for Phase 2 or confirmatory phase, as at the time of research, the proposed PV conceptualisation (along with the scales used to capture Goal-relevance and loyalty duality) had not been validated outside the service value and management literature. More importantly, only after evidencing the propositions, put forward in chapters 2 and 3, can hypothesis be developed for Phase 2.

Studies 1.1 and 1.2 examines the proposed second-order conceptualisation, evidencing that the first-order dimensions (specifically Goal-relevance) fit into the proposed

higher-order components (research aim 1). By evidencing that Goal-relevance is a distinct dimension of PERVAL scale, the research gap (RG2) identified in chapter 2 was addressed (research aim 2). Building upon these first two studies (Phase 1), the confirmatory study (study 2.1, Phase 2) validates the 2x2 matrix model and broadens the value-satisfaction-loyalty (V-S-L) chain by investigating the effects of second-order PV components (cognitive-affective) on the duality of loyalty (research aim 3). More specifically, the intra-variable stage of study 2.1 validated the second-order 2x2 model, a necessary precondition of the proposed PV-loyalty relationship.

In addressing the above mentioned aims, this thesis makes two focal contributions to the existing body of literature on PV concept. Firstly, it validates the second-order 2x2 model that explicitly captures Goal-relevance as fifth dimension of PERVAL, thereby evidencing that the customer's overall PV assessments have always assimilated the differential weighing of relevance of a product in meeting their goals. Secondly, this thesis offers important insights into how increased cognitive and affective assessments of PV leads to more favourable marketing outcomes, specifically, loyalty towards a product.

6.2.1. Model Conceptualisation, Operationalisation and Validation: Intra-variable Perspective

Following the dual perspective, this study first focused on the intra-variable perspective (Gallarza and Gill-Saura, 2006), and proposed a higher-order conceptualisation for PV (2x2 model), addressing research gap (RG1). The starting point for this investigation was the EVP model proposed by Groth (1994) positioned in the context of luxury products. The proposed conceptualisation adapted this model for the consumer goods market by placing equal emphasis on the utilitarian (cognitive) component of value, and, propositioning an internal-external spilt in the cognitive component (P1). This resulted in redefining the existing scope of PV into a second-order conceptualisation comprising of two dualities, namely cognitive-affective and internal-external (Figure 7, p. 63). Moreover, the empirical findings of Phase 1 (See section 5.2, p. 150) also supports this theoretical proposition, that PV can be conceptualised using the aforementioned four components.

Proposed second-order conceptualisation was then operationalised by addressing the call for more holistic integrated models (by Zauner *et al.*, 2015). Considering that, the higher order cognitive-affective and internal-external components (elicited from existing literature) can be treated as exogenous variable, the proposed model becomes comparable to existing conceptualisations. Subsequently, parallels were drawn between Holbrook

(1999)'s typology of value and proposed higher components, leading to the proposition of 2x2 matrix. Additionally, a review of previously elicited first-order dimensions (see Table 8, sub-section 2.4.6.3, p. 65), lead to the conclusion that the four dimensions of PERVAL scale can theoretically represent these first-order dimensions (P2), and thus be integrated in the proposed second-order conceptualisation (research objective 2). Additionally, by consolidating the PERVAL scale (derived from experiential approach) with the 2x2 matrix conceptualisation (derived from benefit-cost approach), it was concluded that the existing PERVAL scale needs to be broadened to fulfil the identified research gap (RG2 in terms of missing cognitive-internal dimension).

Moreover, the review of previously elicited first-order dimensions also demonstrate that, although there were few dimensions that could theoretically capture cognitive-internal component, none of these dimensions could be utilised to extend PERVAL scale (elicited from previous PV literature, see Table 8, sub-section 2.4.6.3, p. 65). Following the integrated approach towards PV, the remaining means-end approach was pursed to generate the missing dimension. By comparing the PERVAL scale to Woodruff (1997)'s means-end model, Goal-relevance dimension was modelled after end-goals, in order to incorporate the "need-satisfaction" for value generation (Sweeney and Soutar, 2001). Review of service marketing and PV literature revealed that although means-end theory focuses on the goal-directed behaviour of costumers (Sánchez-Fernández and Iniesta-Bonillo, 2007), Goal-relevance had only been implicitly, but not explicitly, captured as PV dimension. Consequently Goal-relevance was proposed as the fifth dimension to capture the cognitive-internal dimension (P3) and thereby extend the PERVAL scale using the means-end approach (research objective 5 and 6). The measurement items for Goal-relevance dimension were based on various validated scales with slight changes to wording with respect to the context of this thesis.

While developing the conceptual framework for intra-variable perspective, research gap (RG4) was identified in terms of unbalanced Social dimension (proposed by Sweeny and Soutar, 2001), as it consist of three cognitive and only one affective measurement items. Consequently, two more measurement items were propositioned in order to balance the Social dimension (research objective 4, P4). The resultant framework (Figure 16, p. 105) served as the initial conceptual model for Phase 1, aiming at providing support and validating the proposed 2x2 matrix model for PV. The empirical findings of phase 1 (study 1.1 or an expert survey and study 1.2 or card-sorts analysis) tentatively supported the proposed 2x2 matrix model; thereby supporting P1, P2, P3 and P4. However, it should be noted that the

results of study 1.2 (card sorts exercise) demonstrated that social dimension taps completely in to affective component of PV, yet there is a spilt towards internal-external components, and needs further exploration.

Moreover, phase 2 was further sub-divide into intra-variable and inter-variable perspectives. Here, the intra-variable perspective involved second-order CFA analysis for cross-validating the proposed 2x2 matrix model, thereby testing H1. However, the empirical findings of second-order CFA for internal-external components suggested that social dimension does not spilt between internal-external components (as proposed based on the findings of study 2), but tapping completely in to external component. Thus, for inter-variable perspective, Social dimension was propositioned as tapping into affective-external components. Additionally, this modified, extended PERVAL scale provided the foundation for inter-variable conceptual model, to improve the reliability and validity of the overall study. This inter-variable perspective is further discussed in next sub-section.

6.2.2. The PV-Loyalty Relationship: Inter-variable Perspective

Building upon the findings of phase 1, inter-variable perspective of phase 2 was conducted, evaluating the relationships between the cognitive-affective components of PV with the cognitive and affective loyalty (research objective 7). The findings of study 2.1 largely supported the conceptualised 2x2 matrix model and hypothesised relationships between PV and loyalty. Also, based on the SEM model, all the dimensions of PV were found to have significant effect on Loyalty. More precisely, study 2.1 emphasised the direct effect of cognitive-affective components of PV on attitudinal loyalty (see sub-section 5.3.4, p. 191). The results support that all three cognitive dimensions of PERVAL scale (Price, Quality and Goal-relevance) had a significantly positive influence on cognitive loyalty (P5). Additionally, both affective (Emotional and Social) dimensions revealed a significant and positive direct effect on affective loyalty (P6).

Not all the hypothesised relationships were supported. H4a was not supported, however, effects of cognitive Goal-relevance on affective component of loyalty were not expected. Similarly, H5a was not supported as it was propositioned that the Emotional (affective) dimension of PV would not significantly affect the cognitive loyalty. Still, the affective Emotional dimension significantly influence affective loyalty, as hypothesised.

The more interesting finding is that, H4a, H4b and H5b, were supported. This implies that both Price and Quality (the cognitive-external components of PV) and Social (the

affective-external component) have a direct significant effect on affective dimension of loyalty. This may be a result of differential PV evaluations in the context of 'high-involvement products'. Specifically, PV assessments increase positively and significantly in relation to the increase in the level of involvement (Chen and Tsai, 2008). Considering the 2x2 matrix model, all three dimensions (Price, Quality, and Social) that influence both cognitive and affective loyalties are all categorised as tapping in to the external component of value. Since, the external component of PV embody factors emphasising influences beyond the control of an individual, and affective loyalty is based on hedonic evaluations with the beliefs (Han *et al.*, 2008), thus, it can be argued that the cognitive external dimensions (Price and Quality) will have positive influence on affective loyalty. Thus, another conclusion can be drawn that for any future evaluations of PV and loyalty, it is crucial to focus on the inter-relationships between all the higher-order (cognitive/affective and internal/external) components of PV and both (cognitive and affective) loyalties, for each variable, to elucidate and demonstrate the complexity of PV-loyalty dynamics.

As hypothesised (based on card-sorts exercise), there is no indication for an external-internal spilt in social dimension. The findings of second order CFA indicate that social dimension taps completely into affective-external components of PV. However, the findings of SEM analysis indicate that social dimension significantly and positively influences both cognitive and affective loyalty.

Moreover, considering the emerging device market, specifically smartphone industry, there is sparse literature on understanding PV, its dimensions and its interaction with loyalty (Chen and Tsai, 2008; Chuaha *et al.*, 2014; Lam and Shankar, 2014), leading to the mismanagement of loyalty in smartphone industry (Lam and Shankar, 2014). However, the findings of Phase 2 indicated significant resemblance to past research on the relationship between PV and loyalty in consumer behaviour. For instance, Lam and Shankar (2014) indicated that PV has a very strong effect on the loyalty of smartphone devices. These findings were reaffirmed by the results of Phase 2, thereby emphasising the importance of understanding PV to generate more applicable marketing communications.

Chen and Tsai (2008) found that PV in high-involvement products are more likely to generate more loyalty. In the context of this thesis, iPhone is considered as high-involvement product (Giovanis and Athanasopoulou, 2017) and consequently, increasing the PV may result in increased loyalty. Additionally, both cognitive (functional) and affective (emotional) dimensions have been identified and explored in the smartphone industry context (Chuaha *et al.*, 2014), however, goal-relevance has not been identified explicitly as PV dimension. The

empirical findings of this thesis indicated the direct effect of goal-relevance (proposed dimension) on cognitive loyalty; thereby providing further evidence towards explicitly incorporating goal-relevance as PERVAL scale dimension for more holistic PV assessments. However, the results of SEM analysis also indicate that Goal-relevance does not influence affective loyalty. This implies that cognitive Goal-relevance dimension only influence cognitive loyalty. The following sub-section explores the main contribution of the proposed model, followed by the limitations and recommendations for further research.

6.3. Contribution to Knowledge

The validity and reliability findings indicate the stable psychometric properties of the proposed 2x2 matrix model (with its four component and five dimensions). The proposed model illustrates that customer assessment of the products is a multi-faceted approach, encompassing the cognitive (cost, quality, and goal-relevance of the product) as well as the affective (the pleasure derived from the product and from the consequences of its perception to others). The insight into the importance of individual components and dimensions of PV should enable the practitioner to develop more targeted marketing strategies.

The operationalisation of this 2x2 matrix model was achieved by adapting the PERVAL scale, proposed by Sweeney and Soutar (2001). Since its inception, this scale has accumulated 1896 citations on Web of Science and 6313 citations on Google Scholar. This high level of citation indicates the continued interest of academic and practitioner in the application of the PERVAL scale for PV assessments. Almquist *et al.* (2016) underscores the importance of gaining better understanding of PV by focusing on satisfying the need-hierarchy. Similarly, Heinonen *et al.* (2019) suggested that practitioner may benefit from understanding how customers integrate various products and resources with the goal of generating value. Considering the significance of end-goals in value assessments, the existing 4-dimension, 19-item PERVAL scale was extended to 5-dimension, 25-item scale (by incorporating goal-relevance as another dimension). This extended scale is then tested and validated to demonstrate the importance of goal-relevance in retaining existing customers and attracting new ones, thereby generating a substantial implication for marketing strategy. For example, a shift from sales focused strategies (revolving around money, such as promotional offers, discounts, rewards) towards more holistic and practical strategies (concentrating on intended goal-fulfilment) may be more useful in targeting the existing customer demographics.

6.3.1. Contributions to Theory

This thesis endeavours to provide better theoretical understanding of PV conceptualisation and operationalisation while providing constructive directions for future research in both academia and industry. Considering the intra-variable perspective, this thesis, firstly, contributes to the gap in previous research by proposing a more holistic, integrated model that supports the idea of PV as high-level abstraction (research objective 1, 2, 3 and 4), underscoring the call by scholars for a more holistic integrated second order construct (Khalifa, 2004; Klanac, 2013; Zauner et al., 2015). Most importantly, the findings shows that first-order dimensions load on both, the cognitive-affective and the internal-external duality, of PV. By propositioning four components rather than two main dimensions, this thesis contributes to widen the scope of PV, without introducing any new terminologies. More specifically, these higher-order components of PV concept (as proposed in this thesis) has been validated by more recent studies, such as Gallarza *et al.* (2019), Gallarza *et al.* (2017a).

Additionally, since any proposed model will eventually compete with past conceptualisation, the aim of generating a new model is to provide additional insights not previously incorporated, yet be thoroughly grounded in existing conceptualisations. Based on the review of literature, the similarities between existing conceptualisations and dimensions of PERVAL scale were further established. Thus, it can be argued that the proposed four components and five dimensions are well grounded in existing PV literature. And, as such, it represents the contribution of knowledge, in the form of theoretical and empirical evidence, relating to Holbrook (1999)'s typology, by operationalising proposed model using extended PERVAL scale. This finding goes beyond the results of Sweeney and Soutar (2001), whose PERVAL scale has been extended in this thesis to capture the first-order dimensions of PV. The focus of proposed operationalisation was to provide a comprehensive, yet practical approach to PV that can potentially be implemented by marketing practitioners. This model could provide practitioner more insights into consumer behaviour and aid in developing improved marketing strategies.

Secondly, this thesis is explicitly captures the Goal-relevance dimension as the cognitive-internal dimension, that has only been captured implicitly till date, albeit its significance. By recognising goal-relevance as a significant additional part of the PV scale (beyond the four PERVAL dimensions of price, quality, social and emotional), managers would be able to better develop and tailor their marketing strategies. This study also

represents a small, preliminary attempt towards unravelling the effect of Goal-relevance on cognitive loyalty assessments.

A further, and major contribution is attributed to the fact that this study combines the exogenous variables (higher order components, more precisely the cognitive-affective duality) of PV with "the usual chain of effects"(Gallarza *et al.*, 2016, p. 171) and explores how these higher order components PV drive duality of loyalty. The findings of Phase 2 (confirmatory study) lend support to the conceptual model regarding proposed impact of higher-order components of PV on loyalty duality. More specifically, these positive empirical findings regarding the impact of cognitive-affective components of PV on cognitive and affective loyalty (research objective 7), reaffirm the theoretically recognised model for loyalty evaluations. It is crucial to explore these relationships, in order to understand how PV drives loyalty, in terms of critical segregation that should not be neglected. Also, using such a comprehensive model could theoretically enable marketing managers to gain better insights into the creation and development of loyalty, better than a model using only traditional PV model. This is, therefore, an original and comprehensive approach that potentially provides a conceptually superior platform for future research endeavours and stipulating the main predictors of cognitive or affective loyalty.

A methodological contribution of this thesis relates to the proposed and satisfactorily tested 2x2 matrix model for PV, being reflective (rather than formative) latent construct (Zauner *et al.*, 2015). Additionally, the empirical validation of the 25 items extended PERVAL scale represents another significant empirical contribution of this study. Furthermore, it was argued that by integrating means-end and experiential approaches, the extended PERVAL scale could potentially provide greater insight into the PV hierarchy, thus enabling marketing practitioners to develop more effective strategies.

Secondly, this study successfully exemplified scale adaptability in different contexts. In other words, this study illustrated how a scale developed for exploring PV in the luxury market, can be successfully adapted and employed in consumer goods. Explicitly, to the best of author's knowledge, this is the first attempt at adapting EVP model (Groth, 1994) into product settings and integrating with the PERVAL scale (Sweeney and Soutar, 2001). However, this adaptation does not imply universal generalisability, rather indicates that careful modifications and judicious application can increase the successful employment of such scales (Harris and Goode, 2004). Moreover, similar questionnaire surveys also can be used for a longitudinal study to assess the changes in PV during pre and post purchase. Such replication studies can also aid in understanding the importance of enhancing one or

the other dimension during a customer decision making process.

Finally, the proposed 2x2 matrix incorporates numerous aspects not explicitly investigated in the existing literature. The outcome of phase 2 provides evidence that cognitive and affective components of PV drive cognitive and affective loyalty, respectively, without introducing new terminology or any un-necessary contextual extensions. Consequently, the empirical results also reveal that there is a substantial direct effect of cognitive PV, specifically goal-relevance, on cognitive loyalty, highlighting the future direction and strengths of the relationships between PV and loyalty.

6.3.2. Contribution to Practise

This thesis adds to the claim that PV plays a key role in marketing and consumer behaviour (Ahn *et al.*, 2019; Lin *et al.*, 2005; Smith and Colgate, 2007). This means some recommendations can be derived for marketing practitioners in general. Firstly, the 2x2 matrix linked Goal-relevance (end-states) with the benefits and sacrifices (consequences) resulting from product's characteristics (attributes), thereby providing practical guidance on how each product is perceived and experienced by the customer. The empirical insights from employing this model may allow managers to adapt marketing strategies to the perception and experiences of their customer.

In practice, delivering superior PV can involve substantial cost, that can potentially outweigh the hypothetical profits. By integrating Goal-relevance into the extended PERVAL scale, marketing practitioners may derive more pertinent insights into directing resources more efficiently by capturing customer's needs and expectations. Therefore, it is significantly important to empirically investigate and understand the effects of key dimensions of PV, so as to beneficially allocate resources. Furthermore, practitioners can either focus on adapting existing strategies to identify and satisfy the Goal-relevance criteria of customers; or, they can employ the proposed extended PERVAL scale and actively influence Goal-relevance in accordance with the company's goal.

The link between individual components of PV and loyalty suggests that ignoring any component of PV may result in reduced loyalty. In order to deliver PV and generate loyalty, managers should focus strategically on communicating the quality of product and carefully assess the relevance of the product in fulfilling the goals of the customer (goal-relevance). Furthermore, by understanding the cognitive and affective duality of PV, managers will be able to focus on developing holistic and systematic policies that capture the multifaceted PV

evaluations driving loyalty. Hence, by simultaneously assessing the interactions between both the cognitive and affective components (of both, PV and loyalty), marketing practitioners can gain significant insights for strategic interventions.

Furthermore, Goal-relevance, specifically, was found to have a substantial and direct effect on cognitive loyalty, increasing its importance as PV dimension in understanding cognitive loyalty. Moreover, since "cognitive assessments are easier to control" (Gallarza and Gill-Saura, 2006, p. 448), there is a need for practitioners to cogitate on Goal-relevance assessments, as just employing PERVAL scale may generate skewed or incomplete assessments. Thus, the practitioners should, carefully and efficiently, measure the degree to which a customer finds the product relevant for their goals.

Lastly, besides contributing to the literature of PV-loyalty, this thesis also contributes by examining the iPhone users in the USA market. Additionally, given that there is limited research on drivers of loyalty in the emerging devices market (Lazarevic, 2012), this study also contributes to this niche segment for enhancing loyalty using PV assessments in the emerging devices market for managers. Additionally, the findings of this thesis can potentially be extended to include other emerging devices (such as tablets), as (1) the key characteristics of all emerging devices (such as portability, to access internet on the go) are similar, and (2) the proposed 2x2 matrix model captures the higher-level abstraction of PV, which can be applicable to all forms of emerging devices (Lam and Shankar, 2014). Although the sample consisted of iPhone users (American), their PV and loyalty assessments have shown relative complexity. For instance, the findings of Phase 2 imply that a practitioner may need to explore the degree to which customers identify with a particular product and find it relevant to their situation and to measure the goal-relevance associated with emerging devices. This will help the marketing managers to identify those customers that will continue to be loyal to the product, even if the price increase. Thus, the multidimensional higher order conceptualisation (2x2 matrix) for value assessments can provide a competitive advantage. Moreover, practitioners should also address the distinction between the internal-external components, as this may help in enhancing the PV co-creation processes (Gallarza *et al.*, 2016). The following presents the recommendations for further research with particular emphasis on goal-relevance.

6.4. Limitations and Avenues for Future Research

This thesis is not without its limitations. Due to the multi-disciplinary nature of PV, the literature around this concept is disparate and thus some work(s) may have been missed. So, a systematic literature review (with specific time ranges or keywords) can be a good avenue for future research.

The methodological limitation involves mono-cultural settings (as the proposed model is tested using only Amazon MTurk registered users from America) of this study, as the determinants of PV (in both intra- and inter-variable perspectives) are systematically different in other countries (El-Manstrly and Harrison, 2013; Han *et al.*, 2008). This can be addressed by further replicating the proposed 2x2 matrix model in other cultural settings. Additionally, replicating this model for other products may also provide external validation and help in exploring the generalizability of present findings. Moreover, a cross-cultural or cross-product replication study may highlight the impact of culture (other similar variables) on specific PV dimensions and how they affect the relationship between specific PV dimension and loyalty.

A further methodological shortcoming relates to convenience sampling using Amazon MTurk. As discussed in sub-section 4.4.2 (p. 139), large scale data collection can be done quickly and effortlessly using MTurk, however, the quality of data collected can not be predicted (Hauser *et al.*, 2018). Smith *et al.* (2016), found that the typical MTurker is an Asian, under 25, who is well-educated and lives outside USA. This was further reaffirmed by the data collected during 1st round (see sub-section 5.3.1.1, p. 171), as the IP addresses of over 80 responses were traced back to Asian countries (using Amazon's facility of tracking the location of respondents). This resulted in the need for further data collection, leading to the 2nd round of survey on MTurk, with country-of-origin screening to ensure USA-based respondents. However, the results of data cleaning demonstrate that even after the country-of-origin screening, there were respondents from Asian countries (as the IP addresses was traced back to Asian countries). This means that international MTurkers have been using variety of fake addresses and accounts to imply that they are "USA" respondents, as suggested by Feitosa *et al.* (2015). Furthermore, these respondents can pose a huge risk for large scale noise in any research, due to either non-representativeness (Feitosa *et al.*, 2015) or "fake-aligning" their responses to whomever the survey is looking for in order to get paid (Feitosa *et al.*, 2015). Another concern raised by Ford (2017), is related to the "speeders"

who apply minimal cognitive effort in filling the survey as quickly as possible. Similarly, the participation of "Super Turkers" or MTurk participants who have very high human intelligence tasks (HITs) or surveys, is also concerning due to the significant experience effort (Smith *et al.*, 2016). However, as suggested by Kees *et al.* (2017) and Hauser *et al.* (2018), this thesis followed a sequential multiple hurdle approach (developed based on Curran, 2016, see sub-section 5.3.1.1, p. 171), to obtain better data quality. Additionally, this study aimed to assess the magnitude and significance of hypothesised relationships (in both, inter-and intra-variable perspectives), rather than generalisability, thereby rendering convenience sampling using MTurk as adequate for the purposes of this study.

The sample population, although representative of American mobile phone users, is mainly iPhone users and thus more loyal towards iPhone. This has probably affected the relevance of emotion and social value. A replication study to assess, for instance, difference in PV based on different smartphones, is a good future avenue. Also, the product used for evaluation may pose another limitation. This study uses the iPhone (hardware), rather than the entire product/service provider bundle, considering phone brand and service provider as not interchangeable. This may lead to skewed PV evaluations as the customer might consider product/service bundle (for example, considering internet speed and connectivity) while answering PV assessments.

Another limitation can be attributed to the cross-sectional design. Both, PV and loyalty are dynamic concepts (Han *et al.*, 2008; Zeithaml, 1988) and although this thesis has strived to capture this dynamic nature of both constructs (by using theory-driven conceptualisation and operationalisation) a longitudinal design may be more pertinent in this regard. Future research can build upon the findings of this thesis and attempt to provide further insights into how PV and loyalty changes with time and across settings (the intra-variable and inter-variable perspective) by employing the longitudinal design. Furthermore, the study only confirms that the respondents have been iPhone users and enquires about the main goal to buy an iPhone. Any other past experiences, behavioural or cultural issues also have not been investigated in this study. Thus, the current PV assessments may have been skewed due to feedback loop of past experiences (Sweeney and Soutar, 2001). Consequently, an interesting avenue for future research may be to assess when and how customer's PV evaluations change in regards to loyalty, over a long period of time. This recommended future avenue aligns with the call for research by Harris and Goode (2004)

who specifically underlined the need for longitudinal studies.

The research instrument may also be considered too long (25 measurement items for PV and 6 for loyalty) leading to respondent's exhaustion, which ought to be addressed in any replication studies. Additionally, there is a lack of previous research that captures goal-relevance explicitly, thus there is a need for more studies on goal-relevance as a PV dimension.

Furthermore, although the extant literature suggests various constructs that may affect PV and loyalty relationships (such as satisfaction unobserved in this study), the current study focuses solely on the theorised relationships between cognitive-affective components of PV and loyalty. Consequently, the breadth of study is limited, thereby highlighting the probability of other factors that exert influence by either mediating or moderating the existing relationship on the hypothesised PV-loyalty link. Future research could use this study as a tentative starting point from which subsequent studies that can investigate the effect of other variables like satisfaction, as a mediator (divided in to cognitive and affective components as recently done by Gallarza et al., 2019), or moderator completing the V-S-L chain in to an integrated framework. Similarly, other antecedents and outcomes like trust and commitment could be envisioned for possible further exploration. Moreover, by focusing solely on the PV-loyalty link, the overall consumer decision-making process is not identified in this study.

Another interesting avenue for future research can be exploring the relationships between the internal and external components of PV and loyalty construct. Additionally, based on Groth (1994)'s definition of internal and external elements (see sub-section 2.4.3.1, p. 42), it is probable to conceptualise the loyalty construct as a function of both dichotomies (cognitive-affective and internal-external). However, to the best of author's knowledge, no research has been conducted to explore the internal-external paradigm of loyalty construct. Future research could theoretically attempt to develop a similar 2x2 matrix for loyalty, with both dichotomies (cognitive-affective and internal-external). Potentially the following research proposition can be put forward:

The cognitive and affective component of loyalty are conceptualised using both internal and external elements.

Finally, to better assess the inter-variable perspective, research could use the current 2x2 matrix model in a longitudinal design (Goode, 2004). Harris and Goode (2004, 151) pointed out that "to date, research is largely limited to cross-sectional studies that, while analysed with increasing complexity and depth, are restricted to supporting a priori models rather than confirming causal links." Therefore, future research can build upon the findings of this study and attempt to provide further insights into the intra-variable and inter-variable perspective of PV under different contexts and to employ the longitudinal design.

To conclude, this thesis develops and tests an integrated PV model, along with exploring the direct effects of cognitive-affective components of PV on the duality of loyalty. However, future avenues of research should be pursued to further cross-validate and expand the theoretical framework across product and country.

Chapter 7. References

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Appendix A: Chronological Overview of Previous PV models

S.No.	**Author(s) /Year**	**Second Order Dimension**	**First Order Dimension**	**Measurement Items**
1.	Sheth *et al.* (1991)		Functional Value	
			Social Value	
			Emotional Value	
			Epistemic Value	
			Conditional Value	
2.	Dodds *et al.* (1991)		Value	This product is a: (very good value for the money to very poor value for the money)
				At the price shown the product is: (very economical to very uneconomical)
				The product is considered to be a good buy (strongly agree to strongly disagree)
				The price shown for the product is: (very acceptable to very unacceptable)
				This product appears to be a bargain (strongly agree to strongly disagree)

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
3.	Babin *et al.* (1994)		Hedonic	This shopping trip was truly a joy.
				Compared to other things I could have done, the time spent shopping was truly enjoyable.
				During the trip, I felt the excitement of the hunt.
				This shopping trip truly felt like an escape.
				I enjoyed being immersed in exciting new products.
				I enjoyed this shopping trip for its own sake, not just for the items I may have purchased.
				I continued to shop, not because I had to, but because I wanted to.
				I had a good time because I was able to act on the "spur of the moment".
				While shopping, I was able to forget my problems.
				While shopping, I felt a sense of adventure.
				This shopping trip was not a very nice time out.
				I felt really unlucky during this trip.
				I was able to do a lot of fantasizing during this trip.
			Utilitarian	*I accomplished just what I wanted to on this shopping trip.*
				I couldn't buy what I really needed.
				While shopping, I found just the item(s) I was looking for.
				I was disappointed because I had to go to another store(s) to complete my shopping.
				I feel this shopping trip was successful.
				I feel really smart about this shopping trip.
				This was a good store visit because it was over very quickly.

S.No.	**Author(s) /Year**	**Second Order Dimension**	**First Order Dimension**	**Measurement Items**
4.	De Ruyter *et al.* (1997)		Emotional Dimension	Intrinsic value represents the affective appreciation of the process of a service episode, regardless of the actual outcome.
			Functional Dimension	Extrinsic value pertains to the utilitarian aspects of a service episode as a useful means to a certain end.
			Systematic Value	Systemic value concerns the inherent relation between concepts in their systematic interaction
5.	Grewal *et al.* (1998)		Perceived Acquisition Value	If I bought this bicycle at (selling price), I feel I would be getting my money's worth.
				I feel that I am getting a good quality bicycle for a reasonable price.
				After evaluating the advertised bicycle features, I am confident that I am getting quality features for (selling price).
				If I acquired this bicycle, I think I would be getting good value for the money I spend.
				I think that given this bicycle's features, it is good value for the money.
				I feel that acquiring this bicycle meets both my high quality and low price requirements.
				Compared to the maximum price I would be willing to pay for this bicycle, the sale price conveys good value.
				I would value this bicycle as it would meet my needs for a reasonable price.
				This bicycle would be a worthwhile acquisition because it would help me exercise at a reasonable price.
			Perceived Transaction value	Taking advantage of a price-deal like this makes me feel good.
				I would get a lot of pleasure knowing that I would save money at this reduced sale price.
				Beyond the money I save, taking advantage of this price deal will give me a sense of joy.

S.No.	**Author(s) /Year**	**Second Order Dimension**	**First Order Dimension**	**Measurement Items**
6.	Cronin *et al.* (2000)		Sacrifice	The price charge to use this facility is
				The time required to use this facility is
				The effort that I must make to receive the services offered is
			Service Value	Overall, the value of this facility's services to me is...
				Compared to what I had to give up, the overall ability of this facility to satisfy my wants and needs is...
7.	Parasuraman and Grewal (2000)		Acquisition Value	It emphasizes the net gains associated with the benefits and the money given for acquiring and using a product or service
			Transaction Value	Refers to the psychological satisfaction or pleasure obtained by purchasing the product at a good price compared to Customer's internal reference price
			In-use Value	*It means utility derived from using the product*
			Redemption Value	It relates to benefits of service termination

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
8.	Sweeney and Soutar (2001)		Functional Value (performance/quality)	has consistent quality
				is well made
				has an acceptable standard of quality
				has poor workmanship
				would not last a long time
				would perform consistently
			Emotional Value	is one that I would enjoy
				would make me want to use it
				is one that I would feel relaxed about using
				would make me feel good
				would give me pleasure
			Functional Value (price/value for money)	is reasonably priced
				offers value for money
				is a good product for the price
				would be economical
			Social Value (enhancement of social self-concept)	would help me to feel acceptable
				would improve the way I am perceived
				would make a good impression on other people
				would give its owner social approval

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
9.	Mathwick *et al.* (2001)	Aesthetics	Visual Appeal	The way XYZ displays its products is attractive.
				XYZ's Internet site is aesthetically appealing.
				I like the way XYZ's Internet site looks.
			Entertainment Value	I think XYZ's Internet site is very entertaining.
				The enthusiasm of XYZ's Internet site is catching, it picks me up.
				XYZ doesn't just sell products-it entertains me.
		Playfulness	Escapism	Shopping from XYZ's Internet site "gets me away from it all".
				Shopping from XYZ makes me feel like I am in another world.
				I get so involved when I shop from XYZ that I forget everything else.
			Intrinsic Enjoyment	I enjoy shopping from XYZ's Internet site for its own sake, not just for the items I may have purchased.
				I shop from XYZ's Internet site for the pure enjoyment of it.
		Customer ROI	Efficiency	Shopping from XYZ is an efficient way to manage my time.
				Shopping from XYZ's Internet site makes my life easier.
				Shopping from XYZ's Internet site fits with my schedule.
			Economic Value	XYZ products are a good economic value.
				Overall, I am happy with XYZ's prices.
				The prices of the product(s) I purchased from XYZ's Internet site are too high, given the quality of the merchandise.
		Excellence		When I think of XYZ, I think of excellence.
				I think of XYZ as an expert in the merchandise it offers.

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
10.	Petrick (2002)		Quality	is outstanding quality
				is very reliable
				is very dependable
				is very consistent
			Emotional Response	makes me feel good
				gives me pleasure
				gives me a sense of joy
				makes me feel delighted
				gives me happiness
			Monetary Price	is a good buy
				is worth the money
				is fairly priced
				is reasonably priced
				is economical
				appears to be a good bargain
			Behavioral Price	is easy to buy
				required little energy to purchase
				is easy to shop for
				required little effort to buy
				is easily bought
			Reputation	has good reputation
				is well respected
				is well thought of
				has status
				is reputable

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
11.	Wang *et al.* (2004)		Customer Perceived Sacrifices	The brand/service of this firm is reasonably priced.
				The brand/service experiences of this firm offers value for money based on previous experiences
				The brand/service of this firm would be economical
				The brand/service of this firm is a good product for the price deducted by discounts.
				The brand/service of this firm is value for money compared with that of major competitors
				The choice of transacting with the firm is a right decision when price and other expenses are considered.
			Functional Value	The firm always delivers superior service
				The offerings of this firm are of high quality
				Consistent quality is well made
				The offerings of this firm make me feel confident
			Emotional Value	The brand/service of this firm is the one that I would enjoy
				The brand/service of this firm make me want to purchase and use it
				The brand/service of this firm is the one that I would feel relaxed about using it
				The brand/service of this firm would make me feel good
				The brand/service of this firm would give me pleasure
			Social Value	The brand/service of this firm would improve the way I am perceived
				The brand/service of this firm would help me make a good impression on other people
				The brand/service of this firm would give its owners the social approval

S.No.	**Author(s) /Year**	**Second Order Dimension**	**First Order Dimension**	**Measurement Items**
12.	Lin *et al.* (2005)		Fulfillment/ Reliability	The product (a good or a service) that came was represented accurately by the web site
				You get what you ordered from this site
				The product (a good or a service) is delivered by the time promised by the company
			Customer Service	*The company is willing and ready to respond to customer needs*
				When you have a problem, the web site shows a sincere interest in solving it
				Enquiries are answered promptly
			Web-site Design	The web site provides in-depth information
				The site does not waste your time
				It is quick and easy to complete a transaction at this web site
				The level of personalization at this site is about right
				This web site has good product selection
			Security/ Privacy	You feel like your privacy is protected at this site
				You feel safe in your transactions with this web site
				The web site has adequate security features
			Monetary Sacrifice	You feel that the product (a good or a service) you purchased is expensive
				You think you paid much money

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
13.	Pura (2005)		Monetary Value	The price of this mobile service is acceptable
				This mobile service is good value for money
				This mobile service is better value for money than what I would pay for the same service via internet
			Convenienc e Value	I value the ease of using this mobile service
				Using this mobile service is an efficient way to manage my time
				I value the possibility to use this service instantly via my mobile device
				I value the convenience of using this mobile service
			Social Value	Using g this mobile service helps me to feel accepted by others
				Using this mobile service makes a good impresion on other people
				Using this mobile service gives me social approval
			Emotional Value	Using this mobile service gives me pleasure
				Using this mobile service makes me feel good
			Epistemic Value	I used this mobile service to experiment with new ways of doing things
				I used this mobile service to test the new technologies
				I used this mobile service out of curiosity
			Conditional Value	*I value the information this service offers, with the help of which I get what I need in a certain situation*
				I value the customized information according to my location, that I get by using this location based mobile service
14.	Orth *et al.* (2005)		Functional Benefit/ Quality	has consistent quality
				is well crafted
				has an acceptable standard of quality
				has poor craftsmanship (reversed)

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
			Price/Value for Money	is reasonably priced
				offers value for money
				is a good product for the price
				is very economical
			Social BenefitEnhancement of Self-concept	helps me feel acceptable
				improves the way I am perceived by others
				makes a good impression on other people
				gives its owner social approval
			Emotional Benefit/ Evoke Good Feelings	makes me want to drink it
				is one that makes me feel relaxed
				makes me feel good
				would give me pleasure
				evokes thoughts of happiness
				eliminates all anger
			Environmental Benefit	is produced in an environmentally friendly manner
				is made without polluting the environment
			Humane Benefit	is made by dedicated individuals
				is crafted by very special and unique experts
15.	Gallarza and Gill-Saura (2006)		Efficiency	Information received during. the trip (maps, timetables,…)
				Infrastructure at destination
				Gastronomy at destination was
				Shopping facilities al destination
				Lodging facilities at destination
			Service Quality (excellence)	Provide service reliably, consistently and dependently
				Provide service in a timely manner
				Competent employees (knowledgeable and skillful)
				Approachable employees and easy to contact
				Courteous, polite and respectful employees
				Employees listen to me and we understood each other

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
				Employees were trustworthy, believable and honest
				Employees make the effort to understand my needs
				Employees were neat and clean
			Social Value	Reinforce my feeling of belonging to the group
				A better knowledge of my otassmates
				Being socially accepted in the group
				Relationship with other tourists outside the group
				Relationship with residents
			Play	I enjoyed the leisure (pubs, bars,...)
				I enjoyed my free time
				The leisure was pleasurable
				I had fun in the destination
			Aesthetics	The beauty of]an-stapes (mountains, benches,...) was,..
				The city, its streets, buildings were._
				Exhibitions, museums concerts were_
				The beauty of the art (monuments) was
			Monetary Cost	Cost associated with the whole payment
				Price for return ticket
				Prices at destination (meals, shopping,...)
				Opportunity cost for the price paid
			Perceived Risk	Fear of a terrorist attack during the trip
				Risk of suffering any delinquency act
				Fear of suturing any disease or infection
				Fear of Suffering a natural disaster
				Fear of any kind of accident
				Fear of any politica] or social problems
				Risk of being tricked as a Lourisi
				Risk of an inconvenient&eatment fiom residents
			Time and Effort	Cost of time planning.iiiid preparing

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
				Tirre spent in return trip
				Cost of time .laset
				COO associated with the time invested in the trip
				Opportunity cost associated with the trip
				Effort made for leaving tasks and works to do
				Mental effort made for leaving family and friends
16.	Rintamäki *et al.* (2006)	Utilitarian value	Monetary Savings	I saved money when I shopped here
				I made inexpensive purchases
				I got my purchases done cheaper than if I had made them elsewhere
			Convenience	*I was able to get everything I needed at one stop*
				I was able to shop without disruptive queuing or other delays
				I was able to make my purchases conveniently
		Social value	Status	Patronizing this store fits the impression that I want to give to others
				I am eager to tell my friends/acquaintances about this shopping trip
				I feel that I belong to the customer segment of this store
			Self-esteem	I found products that are consistent with my style
				I felt like a smart shopper, because I made successful purchases
				This shopping trip gave me something that is personally important or pleasing for me
		Hedonic value	Entertainmen	I enjoyed this shopping trip itself, not just because I was able to get my purchases done
				I was having fun
				In my opinion, shopping around was a pleasant way to spend leisure time
			Exploration	I felt adventurous and wanted to visit different departments in order to find interesting products

S.No.	**Author(s) /Year**	**Second Order Dimension**	**First Order Dimension**	**Measurement Items**
				I was looking for insights and new ideas to buy
				I wanted to explore/touch/try different products while shopping
17.	Roig *et al.* (2006)	Perceived value purchase	Functional Value of the Establishment (installations)	The installations favour the confidentiality and the privacy of dealings
				It seems tidy and well organised
				The installations are spacious, modern and clean
				It is easy to find and accessible
			Functional Value Contact Personnel (professionalism)	The personnel know their job well
				The personnel's knowledge is up to date
				The information provided by the personnel has always been very valuable to me
				The personnel have knowledge of all the services offered by the entity
			Functional Value of the Service Purchased (quality)	The service as a whole is correct
				The quality has been maintained all of the time
				The level of quality is acceptable in comparison with other entities
				The results of the service received were as expected
			Functional Value Price	The payment of interest or commission is fully justified
				The service is good for the expense it causes me
				The total cost that it causes me is reasonable
			Emotional Value	I am happy with the financial services contracted
				I feel relaxed
				The personnel give me positive feelings
				The personnel don't hassle me
				In general I feel at ease
			Social Value	It is very well considered at a social level
				The fact that I come here looks good to the people I know

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
18.	Sánchez *et al.* (2006)		Functional Value of the Travel Agency (installations)	The distribution of the interior favoured confidentiality and privacy
				The establishment was neat and well organised
				The installations were spacious, modern and clean
				The establishment was well located (easily found, central and/or with good transport links)
			Functional Value of Contact Personnel of the Travel Agency (professionalism)	They were good professionals and they were up-to-date about new items and trends
				They knew their job well
				Their advice was valuable
				The knew the tourism packages
			Functional Value of the Tourism Package Purchased (quality)	The tourism package purchased was well organised
				The quality of the tourism package was maintained throughout
				Relative to other tourism packages purchased it had an acceptable level of quality
				The result was as expected
			Functional Value Price	It was a good purchase for the price paid
				The tourism package purchased was reasonably priced
				The price was the main criterion for the decision
			Emotional Value	I am comfortable with the tourism package purchased
				The personnel were always willing to satisfy my wishes as a customer, whatever product I wanted to buy
				The personnel gave me a positive feeling
				I felt relaxed in the travel agency

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
				The personnel didn't pressure me to decide quickly
			Social Value	Using the services of the travel agency has improved the way other people perceive me
				The tour operator's packages are taken by many people that I know
				Taking the tourism package improved the way I am perceived by others
				People who take that type of tourism packages obtain social approval
19.	Pihlström and Brush (2008)		Monetary Value	The price of this mobile service is acceptable.
				This mobile service is good value for money.
				This mobile service is better value for money than what I would pay for the same service via other channels (internet /store) (n).
			Convenienc e Value	I save time and money when I order the information via themobile service (n).
				I value the ease of using this mobile service.
				I value the option of using this service instantly via my mobile device (n).
				Using this mobile service makes my life easier (d).
				Using this mobile service is an efficient way to manage my time (d).
				I value the option of using this mobile service without others noticing (n) (d).
			Emotional Value	Using this mobile service gives me pleasure.
				Using this mobile service makes me feel good.
				Using this mobile service makes me feel relaxed.
				I value the option of sending emotional messages to my friends via this mobile service (n) (d).
			Social Value	Using this mobile service helps me to feel accepted by others.
				Using this mobile service makes a good impression on other people.

S.No.	**Author(s) /Year**	**Second Order Dimension**	**First Order Dimension**	**Measurement Items**
				Using this mobile service gives me social approval.
			Conditional Value	*I value the information / entertainment this service offers,with the help of which I get what I need in a certain situation (n).*
				I value the independence of place and time offered by the use of this mobile service (n).
				I value the real time information and interaction that this service makes possible (n).
			Epistemic Value	I used this mobile service to experiment with new ways of doing things.
				I used this mobile service to test the new technologies (n).
				I used this mobile service out of curiosity (n).
20.	Sánchez-Fernández *et al.* (2009)	Consumer Value	Efficiency	The time you have waited to be seated and to order has not been excessive
				You have promptly received your cheque and paid
				In general, you are happy with the prices of this restaurant
				The prices are good, considering what you have received from the restaurant
				The effort, time, and money spent in the restaurant are right
			Quality	The service provided by the staff was up to standard
				Members of the staff are competent, accessible and polite
				The relationship with the staff has been adequate
				The quality of the food served is good
			Social Value	The people and the environment of this restaurant are in accordance with its social level and status
				You feel close to the environment and the people in this vegetarian restaurant

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
				In general, your experience in the restaurant is important for your social relationships, your self-esteem and your status
			Play	The environment of the restaurant (music, customers, etc.) has helped you to enjoy your stay
				Going to this restaurant has served as a way of temporary escape for you
				The staff have contributed to making your stay more amusing and entertaining
				You have enjoyed your visit to this restaurant
			Aesthetics	You like the arrangement of the table and the food
				You find the restaurant's design and decoration attractive
				The appearance of the staff is appropriate
				In your opinion, the restaurant's taste is fine
			Altruistic Value	Going to this restaurant has an ethical and moral interest for you, as you consider that the products have been ecologically produced
				The environmental perservation of the restaurant is coherent with your ethical and moral values
				You feel attracted by the spiritual atmosphere of this restaurant
				Going to this restaurant has had an ethical and spiritual value for you
21.	Gallarza *et al.* (2016)		Play	The hotel provides interesting activities for children
				The hotel provides activities for the family
				The activities organised at the hotel are fun and enjoyable
				The hotel provides facilities to help me enjoy my stay more (spa, swimming-pool, gym . . .)
				The hotel provides added services to help me enjoy my stay more (WIFI, newspapers, . . .)
			Aesthetics	The hotel furniture is aesthetically attractive

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
				The hotel atmosphere and ambiance are pleasant
				The colours on the walls and floors combine well
				The hotel architecture is admirable
				The smells during my stay are pleasurable (at breakfast and other meals, in the hall, . . .)
				The views from the windows are nice
			Ethics	The hotel respects and cares for the environment (in the laundry, in the cleaning of the rooms, in the use of electricity and water electricity and water …)
				The hotel makes donations to social causes and projects (NGOs . . .)
				The hotel prices are transparent (non-inclusive services are correctly advertised . . .)
				In this hotel everything works correctly and legally
				The hotel follows all the applicable rules and regulations
			Spirituality (relaxation)	I go to the hotel mainly to relax and escape from daily reality and routines
				This hotel helps me get away from the routine of everyday life
				My stay at the hotel give me a break from my work activities
				My stay at the hotel helps me to rest and become fully relaxed
				This hotel gives me the opportunity to unwind while I am on holiday
		Perceived Value		In general, the value obtained from this tourism experience is high
				Compared to what I have had to sacrifice, the capacity of this tourism experience to satisfy my desires and needs has been high
				Comparing benefits to sacrifices, I consider this tourism experience to be a good one

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
22.	Gallarza *et al.* (2017)		Efficiency	The room lighting is appropriate
				The room temperature is comfortable
				The hotel environment is clean
				The room is correctly soundproof
				The space and equipment in the bathroom are convenient
				The toiletries offered in the bathroom are useful
				The hotel offers suitable additional services for guests when needed (parking, concierge, etc.)
				The location of the hotel is easy to reach
			Service Quality (excellence)	Generally, the employees provide service reliably, consistently, and dependably
				Generally, the employees are willing and able to provide service in a timely manner
				Generally, the employees are competent (i.e. knowledgeable and skillful)
				Generally, the employees are approachable and easy to contact
				Generally, the employees are courteous, polite, and respectful
				Generally,theemployeeslistentomeandspeak in a language that I can understand
				Generally, the employees are trustworthy, believable, and honest
				Generally, the employees make the effort to understand my needs
				Generally, the physical facilities and employees are neat and clean
			Play	The hotel offers plenty of children's activities
				The hotel offers plenty of family activities
				The possible activities organized by hotel/ staff are great fun
				This hotel offers added services to make my stay more pleasurable (spa, swimming pool, etc.)

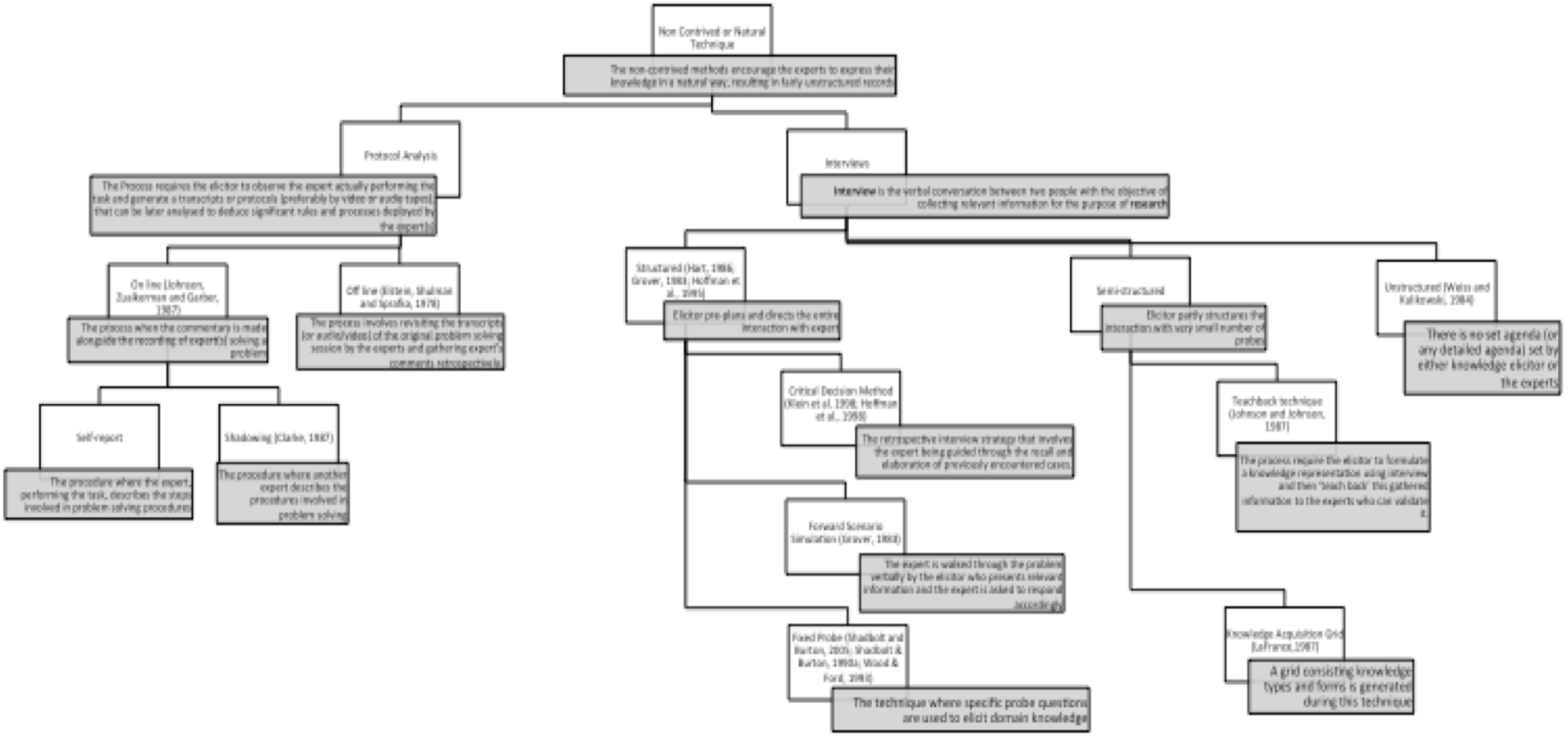
S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
				This hotel offers added services to make my stay more comfortable (WiFi, newspapers, etc.)
			Aesthetics	The furnishing of the hotel is aesthetically appealing
				The atmosphere of the hotel is wonderful
				The colors of walls and floor are complementary and coordinating
				The hotel architecture is impressive
				The smells at my stay have been pleasant (at breakfast or other meals, in the hall, etc.)
				The views from the windows are impressive
			Status	Staying in this hotel is considered prestigious
				I consider staying in this hotel a status symbol
				I consider staying in this hotel fits my social status
				Staying at this hotel gives a good impression to other people
			Esteem	Staying at this hotel increases my sense of self-worth
				I get a great sense of achievement from staying at this hotel
				I get a sense of pride when staying at this hotel
			Ethics	The hotel is friendly to the environment (laundry, cleaning bathroom, etc.)
				The hotel collaborates in a social project (NGO or similar)
				Prices in the hotel are transparent (services not included correctly announced, etc.)
				At this hotel everything is run in a legal and proper way
				This hotel follows all applicable rules and regulations
			Escapism	This hotel allow me to escape from my worldly cares
				The hotel helps me escape from my work related activities

S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
				This hotel helps me to experience a state of total relaxation
				This hotel gives me the opportunity to unwind while I am on holiday
23.	Tsai (2017)		Novel Value Dimension	The offering is novel
				The offering is creative
				The offering can be considered unique
			Utilitarian Value Dimension	The offering is problem-solving
				The offering features utility
				The offering satisfies substantive need
			Experiential Value Dimension	The offering is pleasant to use
				The offering induces positive emotions
				The offering evokes the feeling of attraction
24.	Ahn *et al.* (2019)		Atmosphere (ATM)	This integrated resort (IR) had attractive interior design and décor.
				The background music is pleasing.
				This IR was thoroughly clean.
				Employees are neat and well dressed.
			Playfulness (PLA)	Staying at this IR makes me feel like I am in another world.
				I get so involved when I stay at this IR that I forget everything else.
			Return on Investment (ROI)	Staying at this IR is an efficient way to manage my time.
				Staying at this IR makes my life easier.
				Staying at this IR fits with my schedule.
			Service Excellence (SE)	When I think of this IR, I think of excellence.
				I think of this IR as an expert it offers .
25.	Gallarza *et al.* (2019)		Efficiency	The offering is problem-solving
				The offering features utility
				The offering satisfies a substantive need
			Excellence	Empathy of employees
				Expertise of employees
				Responsiveness of employees
				Ability to take part in the service process

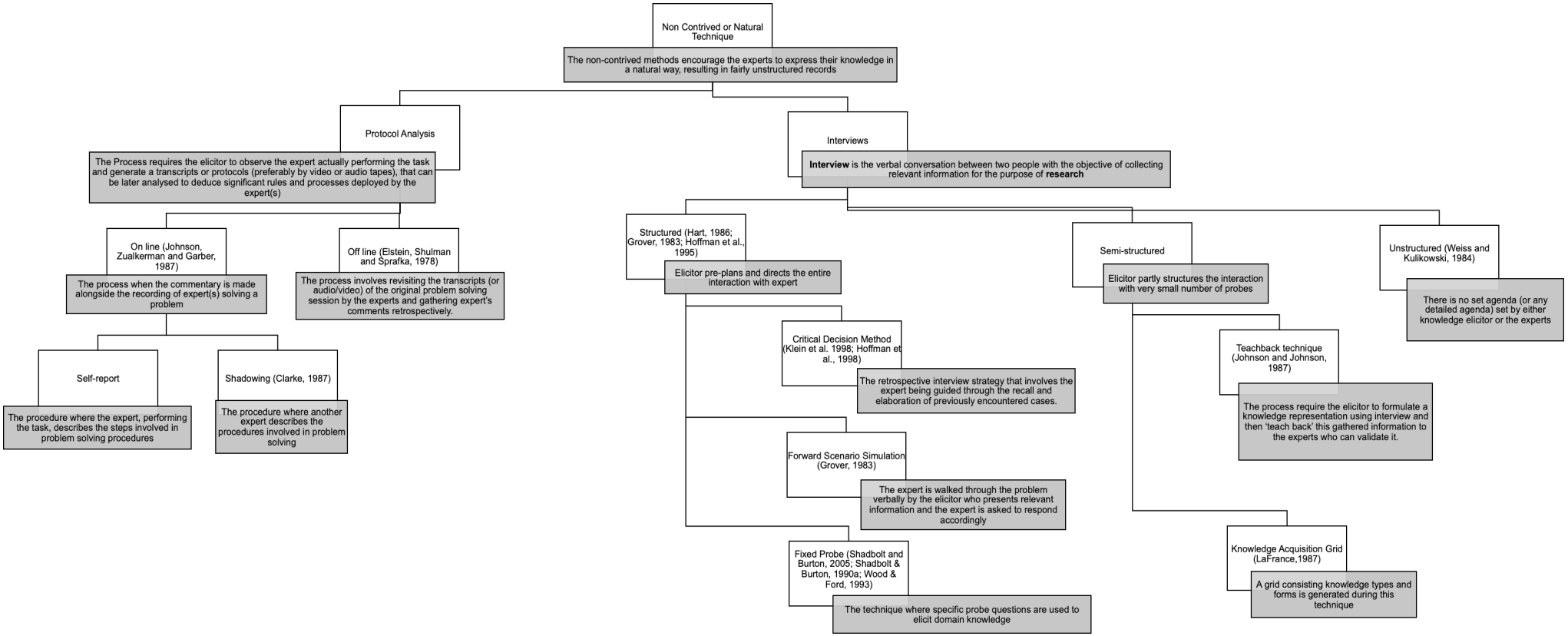
S.No.	Author(s) /Year	Second Order Dimension	First Order Dimension	Measurement Items
			Status	Improves the way I am perceived
				Helps me make a good impression on people
			Esteem	Recognized by employees
				Being familiar with employees
				Have developed a good friendship with employees
			Entertainment	The offering is pleasant to use
				The offering induces positive emotions
				The offering evokes the feeling of attraction
			Aesthetics	Design
				Lighting effects
				Colour effect
				Sound effect
			Ethics	The hotel is environmentally friendly
				Prices in the hotel are transparent
			Escapism	Staying in this hotel is so enjoyable that it makes me feel comfortable and relaxed
				Staying in this hotel makes me feel like I am in another world
				Staying in this hotel releases me from reality and helps me truly enjoy myself

Appendix B: A brief Overview of Knowledge Elicitation Techniques

Non-Contrived



Contrived


Non Contrived or Natural Technique
The non-contrived methods encourage the experts to express their knowledge in a natural way, resulting in fairly unstructured records
Protocol Analysis
The Process requires the elicitor to observe the expert actually performing the task and generate a transcripts or protocols (preferably by video or audio tapes), that can be later analysed to deduce significant rules and processes deployed by the expert(s)
On line (Johnson, Zualkerman and Garber, 1987)
The process when the commentary is made alongside the recording of expert(s) solving a problem
Off line (Elstein, Shulman and Sprafka, 1978)
The process involves revisiting the transcripts (or audio/video) of the original problem solving session by the experts and gathering expert's comments retrospectively.
Self-report
The procedure where the expert, performing the task, describes the steps involved in problem solving procedures
Shadowing (Clarke, 1987)
The procedure where another expert describes the procedures involved in problem solving
Interviews
Interview is the verbal conversation between two people with the objective of collecting relevant information for the purpose of research
Structured (Hart, 1986; Grover, 1983; Hoffman et al., 1995)
Elicitor pre-plans and directs the entire interaction with expert
Critical Decision Method (Klein et al. 1998; Hoffman et al., 1998)
The retrospective interview strategy that involves the expert being guided through the recall and elaboration of previously encountered cases.
Forward Scenario Simulation (Grover, 1983)
The expert is walked through the problem verbally by the elicitor who presents relevant information and the expert is asked to respond accordingly
Fixed Probe (Shadbolt and Burton, 2005; Shadbolt & Burton, 1990a; Wood & Ford, 1993)
The technique where specific probe questions are used to elicit domain knowledge
Semi-structured
Elicitor partly structures the interaction with very small number of probes
Teachback technique (Johnson and Johnson, 1987)
The process require the elicitor to formulate a knowledge representation using interview and then 'teach back' this gathered information to the experts who can validate it.
Knowledge Acquisition Grid (LaFrance,1987)
A grid consisting knowledge types and forms is generated during this technique
Unstructured (Weiss and Kulikowski, 1984)
There is no set agenda (or any detailed agenda) set by either knowledge elicitor or the experts

Appendix C: Questionnaire Phase 1 Study 1- First Survey

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Elusen Gofrestrig Rhif/Registered charity 1141565

Participant Information
iPhone: Value survey

Dear participants,

The research you are about to participate in is part of a PhD 's student research project at Bangor university. By participating in this survey you will contribute to the research effort in the field of consumer behavior. The survey will **only take about 5-8 minutes** and requires answering some simple questions after reading a simple guideline. The research seeks to categorize some items into different categories. **There are no right or wrong answers**, but for your survey to be accepted you must answer every question.

Please be assured that any information you share will be treated **as strictly confidential**. **You will not be personally identified** in this survey and therefore not individually mentioned in any reports or outputs arising from this work. The minor demographical information (age, gender and your current iPhone model) serves statistical purposes and thus will be produced in aggregate format only. Due to university regulations **participants need to be 18 years or older**. **Participation is entirely voluntary and you are free to withdraw the survey at any time** before completing the questionnaire, but if you do so you will not be paid.

If you have any questions or would like to know more about this work, please contact Surbhi by email (abp4f8@bangor.ac.uk). In case of any other concerns regarding this study please contact Prof. Edward Shiu by email (e.shiu@bangor.ac.uk).

Thank you for taking the time to participate in this project.

Yours faithfully

Surbhi Jain
PhD candidate
Bangor Business School

Yours faithfully

Prof Edward Shiu
Professor of Marketing
Bangor Business School

Categorising survey

1 * Please select your current iPhone model:

- ○ iPhone 6
- ○ iPhone 6 plus
- ○ iPhone 6s
- ○ iPhone 6s plus
- ○ iPhone 5s
- ○ iPhone 5c
- ○ iPhone 5
- ○ iPhone 4s
- ○ iPhone 4
- ○ Other (please specify)

Text goes here

Next →

2 * The most important feature of iPhone 5c, for me, is:

- ○ Better camera than any other handset
- ○ Better battery life than any other handset
- ○ Faster processor
- ○ Faster charging
- ○ Wider range of networks for better roaming experience
- ○ Other (please specify)

Text goes here

Next →

3 * As you answered before, the most important feature of iPhone 5c is Wider range of networks for better roaming experience because it enables you to...

Next →

Later, you will be asked to sort certain statements into the following main categories:

Internal item

Survey item describes factors that are within your control.

For example:

While selecting a car, you can choose features like the model of the car, internal and external colors, optional equipment's etc.

External item

Survey item describes factors that are beyond your control.

For example:

While selecting a car, attributes like the standard equipment's, safety ratings of the car, gas and power consumptions etc. are considered to be beyond your control.

Next →

To test that you have understood the difference between these categories, please answer following two questions:

4 * Considering the following picture, please select the option that describes factors that are beyond your control (External) regarding this microwave:

- ◯ Re-heating cold tea.
- ◯ Heat the microwave meal.
- ◯ The maximum power rating of the microwave.
- ◯ Cook food.

5 * Considering the following picture, please select the option that describes factors that are within your control (Internal) regarding this microwave:

- ◯ The number of features like grill, combo etc.
- ◯ Capacity of the microwave.
- ◯ Defrosting the frozen food.
- ◯ The power rating of the microwave.

Next →

Your answer(s) seems incorrect. Would you please revisit the definitions of the main categories and answer following questions:

Internal item

Survey item describes factors that are within your control.

For example:

While selecting a car, you can choose features like the model of the car, internal and external colors, optional equipment's etc.

External item

Survey item describes factors that are beyond your control.

For example:

While selecting a car, attributes like the standard equipment's, safety ratings of the car, gas and power consumptions etc. are considered to be beyond your control.

6 * Considering the following picture, please select the option that describes factors that are beyond your control (External) regarding this microwave:

- ◯ Re-heating cold tea.
- ◯ Heat the microwave meal.
- ◯ The maximum power rating of the microwave.
- ◯ Cook food.

7 * Considering the following picture, please select the option that describes factors that are within your control (Internal) regarding this microwave:

- ◯ The number of features like grill, combo etc.
- ◯ Capacity of the microwave.
- ◯ Defrosting the frozen food.
- ◯ The power rating of the microwave.

Next →

* Based on the explanations given before, please rate the following statements, into Internal (factors that are within your control) or External (describes factors that are beyond your control) statements:

	Internal 1	2	3	4	External 5
iPhone 5c is one that I enjoy using	◯	◯	◯	◯	◯
The Wider range of networks for better roaming experience feature of the handset makes me want to use the iPhone 5c	◯	◯	◯	◯	◯
I think that iPhone 5c is well made	◯	◯	◯	◯	◯
The iPhone 5c have poor workmanship	◯	◯	◯	◯	◯
Using iPhone 5c would improve the way I am perceived	◯	◯	◯	◯	◯

Next →

* **Based on the explanations given before, please rate the following statements, in to Internal (factors that are within your control) or External (describes factors that are beyond your control) statements:**

	Internal 1	2	3	4	External 5
I believe that iPhone 5c would be an economical handset	○	○	○	○	○
I think that using iPhone 5c would make a good impression on other people	○	○	○	○	○
I think that iPhone 5c would not last a long time	○	○	○	○	○
Using iPhone 5c would help me to feel acceptable	○	○	○	○	○
I think that iPhone 5c is a good product for the price	○	○	○	○	○

Next →

* **Based on the explanations given before, please rate the following statements, in to Internal (factors that are within your control) or External (describes factors that are beyond your control) statements:**

	Internal 1	2	3	4	External 5
I believe that iPhone 5c offers value for money	○	○	○	○	○
I think that iPhone 5c is reasonably priced	○	○	○	○	○
iPhone 5c is one that I feel relaxed about using	○	○	○	○	○
Using an iPhone 5c would give me pleasure	○	○	○	○	○
Using iPhone 5c would make me feel good	○	○	○	○	○

Next →

* **Based on the explanations given before, please rate the following statements, in to Internal (factors that are within your control) or External (describes factors that are beyond your control) statements:**

	Internal 1	2	3	4	External 5
I think that iPhone 5c is relevant for my specific goals, like w	○	○	○	○	○
Using iPhone 5c gives me a sense of pride	○	○	○	○	○
I think that iPhone 5c is useful to w	○	○	○	○	○
Using iPhone 5c would make me feel embarrassed	○	○	○	○	○
I believe that using iPhone 5c gives me social approval	○	○	○	○	○

Next →

* **Based on the explanations given before, please rate the following statements, in to Internal (factors that are within your control) or External (describes factors that are beyond your control) statements:**

	Internal 1	2	3	4	External 5
iPhone 5c has consistent quality	○	○	○	○	○
I think that iPhone 5c would hinder me in attaining my goals like w	○	○	○	○	○
I believe that iPhone 5c would perform consistently	○	○	○	○	○
Using iPhone 5c enable me to acheive my goals, like w	○	○	○	○	○
I think that an iPhone 5c has an acceptable standard of quality	○	○	○	○	○

Next →

About You

The information you provide will remain confidential and can not be used to identify you.

8 What is your age range?

- ◯ 19 - 24
- ◯ 25 - 34
- ◯ 35 - 44
- ◯ 45 - 54
- ◯ 55 - 64
- ◯ 65 or older
- ◯ Prefer not to answer

9 What is your gender?

- ◯ Male
- ◯ Female
- ◯ Prefer not to answer

Next →

Thank you for participating in this study.

Submit

Appendix D: Questionnaire Phase 1 Study 1- Second Survey

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College of Business, Law, Education and Social Sciences, Bangor University

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Ffon/Tel: (01248) 388 220
Elusen Gofrestrig Rhif/Registered charity 1141565

Participant Information
iPhone: Value survey

Dear participants,

The research you are about to participate in is part of a PhD 's student research project at Bangor university. By participating in this survey you will contribute to the research effort in the field of consumer behavior. The survey will **only take about 5-8 minutes** and requires answering some simple questions after reading a simple guideline. The research seeks to categorize some items into different categories. **There are no right or wrong answers**, but for your survey to be accepted you must answer every question.

Please be assured that any information you share will be treated **as strictly confidential**. **You will not be personally identified** in this survey and therefore not individually mentioned in any reports or outputs arising from this work. The minor demographical information (age, gender and your current iPhone model) serves statistical purposes and thus will be produced in aggregate format only. Due to university regulations **participants need to be 18 years or older**. **Participation is entirely voluntary and you are free to withdraw the survey at any time** before completing the questionnaire, but if you do so you will not be paid.

If you have any questions or would like to know more about this work, please contact Surbhi by email (abp4f8@bangor.ac.uk). In case of any other concerns regarding this study please contact Prof. Edward Shiu by email (e.shiu@bangor.ac.uk).

Thank you for taking the time to participate in this project.

Yours faithfully

Surbhi Jain
PhD candidate
Bangor Business School

Yours faithfully

Prof Edward Shiu
Professor of Marketing
Bangor Business School

Categorising survey

1 * Please select your current iPhone model:

- ◯ iPhone 6
- ◯ iPhone 6 plus
- ◯ iPhone 6s
- ◯ iPhone 6s plus
- ◯ iPhone 5s
- ◯ iPhone 5c
- ◯ iPhone 5
- ◯ iPhone 4s
- ◯ iPhone 4
- ◯ Other (please specify)

Text goes here

Next →

2 * The most important feature of Venenatis felis montes natoque hendrerit. handset, for me, is:

- ◯ Better camera than any other handset
- ◯ Better battery life than any other handset
- ◯ Faster processor
- ◯ Faster charging
- ◯ Wider range of networks for better roaming experience
- ◯ Other (please specify)

Text goes here

Next →

3 * As you answered before, the most important feature of Venenatis felis montes natoque hendrerit. handset is Wider range of networks for better roaming experience because it enables you to...

Next →

Later, you will be asked to sort certain statements into the following main categories:

Cognitive item

Survey item that describes the features and attributes of an object.

For example:

The feature and attributes of a car may involve safety ratings, internal and external colors, heated front seats etc.

Affective item

Survey item that describes your feelings towards the object.

For example:

The feeling of pleasure or pride while driving a car.

Next →

To test that you have understood the difference between these categories, please answer following two questions:

4 * Considering the following picture, please select the option that describes cognitive nature (features or attributes) regarding this pair of shoes:

- ◯ They make me feel good.
- ◯ They are of very good quality.
- ◯ They make me feel cheap.
- ◯ They give me pleasure to wear.

5 * Considering the following picture, please select the option that describes affective nature (your feelings) regarding this pair of shoes:

- ◯ They are good value for money.
- ◯ They are very well made.
- ◯ They give me a sense of pride.
- ◯ They would not last very long.

Next →

Your answer(s) seems incorrect. Would you please revisit the definitions of the main categories and answer following questions:

Cognitive item

Survey item that describes the features and attributes of an object.

For example:

The feature and attributes of a car may involve safety ratings, internal and external colors, heated front seats etc.

Affective item

Survey item that describes your feelings towards the object.

For example:

The feeling of pleasure or pride while driving a car.

6 * Considering the following picture, please select the option that describes cognitive nature (features or attributes) regarding this pair of shoes:

- ◯ They make me feel good.
- ◯ They are of very good quality.
- ◯ They make me feel cheap.
- ◯ They give me pleasure to wear.

7 * Considering the following picture, please select the option that describes affective nature (your feelings) regarding this pair of shoes:

- ◯ They are good value for money.
- ◯ They are very well made.
- ◯ They give me a sense of pride.
- ◯ They would not last very long.

Next →

* Based on the explanations given before, please rate the following statements, into cognitive (describes features or attributes of Venenatis felis montes natoque hendrerit.) or affective (your feelings towards Venenatis felis montes natoque hendrerit.) statements:

	Cognitive 1	2	3	4	Affective 5
I think that Venenatis felis montes natoque hendrerit. is well made	◯	◯	◯	◯	◯
The Wider range of networks for better roaming experience feature of the handset makes me want to use the Venenatis felis montes natoque hendrerit.	◯	◯	◯	◯	◯
Using an Venenatis felis montes natoque hendrerit. would improve the way I am perceived	◯	◯	◯	◯	◯
Venenatis felis montes natoque hendrerit. is one that I would enjoy using	◯	◯	◯	◯	◯
The Venenatis felis montes natoque hendrerit. have poor workmanship	◯	◯	◯	◯	◯

Next →

* **Based on the explanations given before, please rate the following statements, in to cognitive (describes features or attributes of the Venenatis felis montes natoque hendrerit.) or affective (your feelings towards Venenatis felis montes natoque hendrerit.) statements:**

	Cognitive 1	2	3	4	Affective 5
I believe that an Venenatis felis montes natoque hendrerit. would be an economical handset	○	○	○	○	○
I think that using an Venenatis felis montes natoque hendrerit. would make a good impression on other people	○	○	○	○	○
Using an Venenatis felis montes natoque hendrerit. would help me to feel acceptable	○	○	○	○	○
I think that Venenatis felis montes natoque hendrerit. is a good product for the price	○	○	○	○	○
I think that an Venenatis felis montes natoque hendrerit. would not last a long time	○	○	○	○	○

Next →

* **Based on the explanations given before, please rate the following statements, in to cognitive (describes features or attributes of the Venenatis felis montes natoque hendrerit.) or affective (your feelings towards Venenatis felis montes natoque hendrerit.) statements:**

	Cognitive 1	2	3	4	Affective 5
Using an Venenatis felis montes natoque hendrerit. would make me feel good	○	○	○	○	○
I believe that Venenatis felis montes natoque hendrerit. offers value for money	○	○	○	○	○
Using an Venenatis felis montes natoque hendrerit. would give me pleasure	○	○	○	○	○
Venenatis felis montes natoque hendrerit. is one that I feel relaxed about using	○	○	○	○	○
I think that Venenatis felis montes natoque hendrerit. is reasonably priced	○	○	○	○	○

Next →

* **Based on the explanations given before, please rate the following statements, in to cognitive (describes features or attributes of the Venenatis felis montes natoque hendrerit.) or affective (your feelings towards Venenatis felis montes natoque hendrerit.) statements:**

	Cognitive 1	2	3	4	Affective 5
I think that Venenatis felis montes natoque hendrerit. is useful to s	○	○	○	○	○
Using an Venenatis felis montes natoque hendrerit. would make me feel embarrassed	○	○	○	○	○
Using an Venenatis felis montes natoque hendrerit. gives me a sense of pride	○	○	○	○	○
I think that Venenatis felis montes natoque hendrerit. is relevant for my specific goals, like s	○	○	○	○	○
I believe that using Venenatis felis montes natoque hendrerit. gives me social approval	○	○	○	○	○

Next →

* **Based on the explanations given before, please rate the following statements, in to cognitive (describes features or attributes of the Venenatis felis montes natoque hendrerit.) or affective (your feelings towards Venenatis felis montes natoque hendrerit.) statements:**

	Cognitive 1	2	3	4	Affective 5
Venenatis felis montes natoque hendrerit. has consistent quality	○	○	○	○	○
I believe that Venenatis felis montes natoque hendrerit. would perform consistently	○	○	○	○	○
I think that Venenatis felis montes natoque hendrerit. would hinder me in attaining my goals like s	○	○	○	○	○
Using an Venenatis felis montes natoque hendrerit. enable me to achieve my goals like s	○	○	○	○	○
I think that an Venenatis felis montes natoque hendrerit. has an acceptable standard of quality	○	○	○	○	○

Next →

About You

The information you provide will remain confidential and can not be used to identify you.

8 What is your age range?

- ◯ 19 - 24
- ◯ 25 - 34
- ◯ 35 - 44
- ◯ 45 - 54
- ◯ 55 - 64
- ◯ 65 or older
- ◯ Prefer not to answer

9 What is your gender?

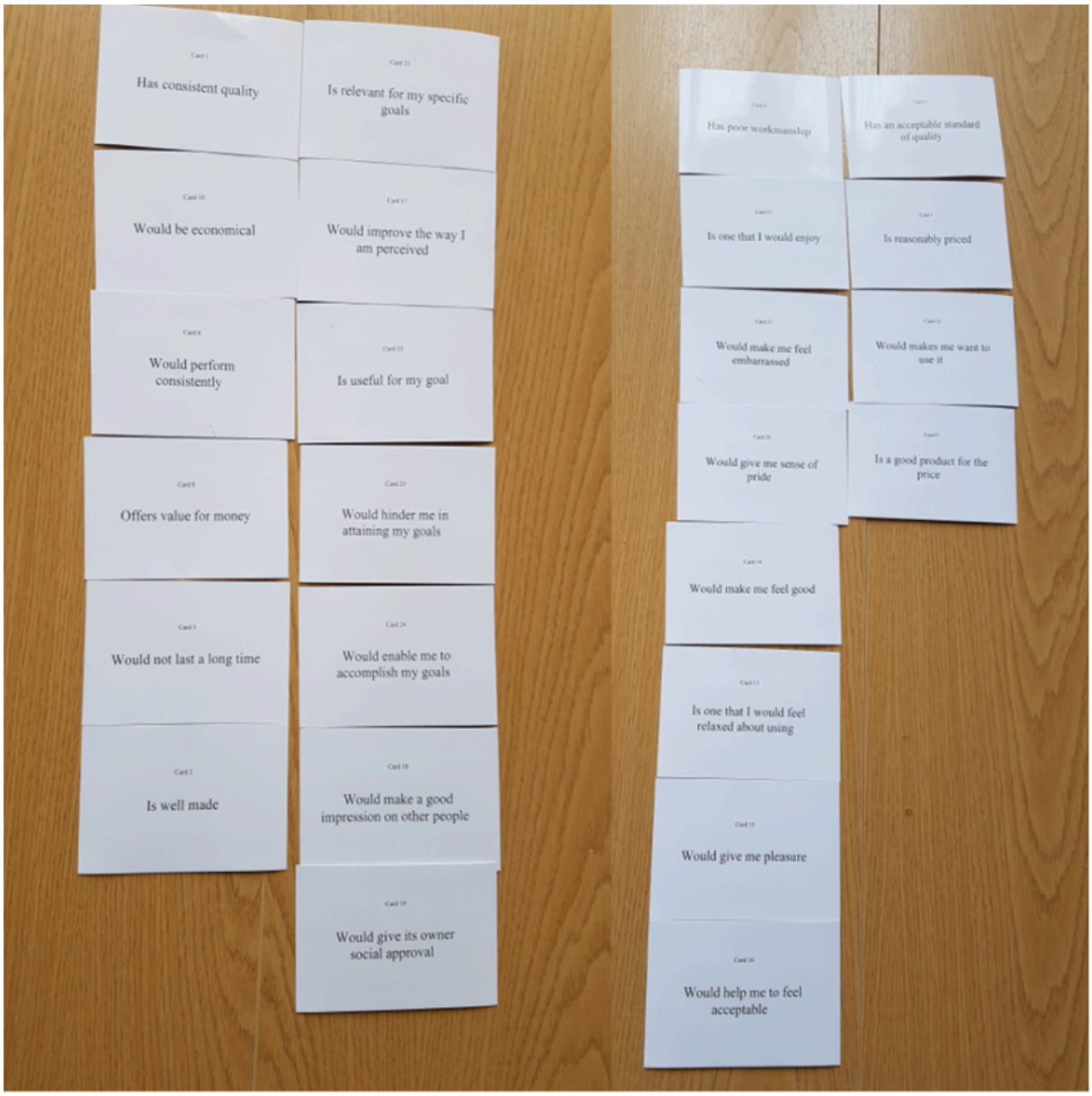
- ◯ Male
- ◯ Female
- ◯ Prefer not to answer

Next →

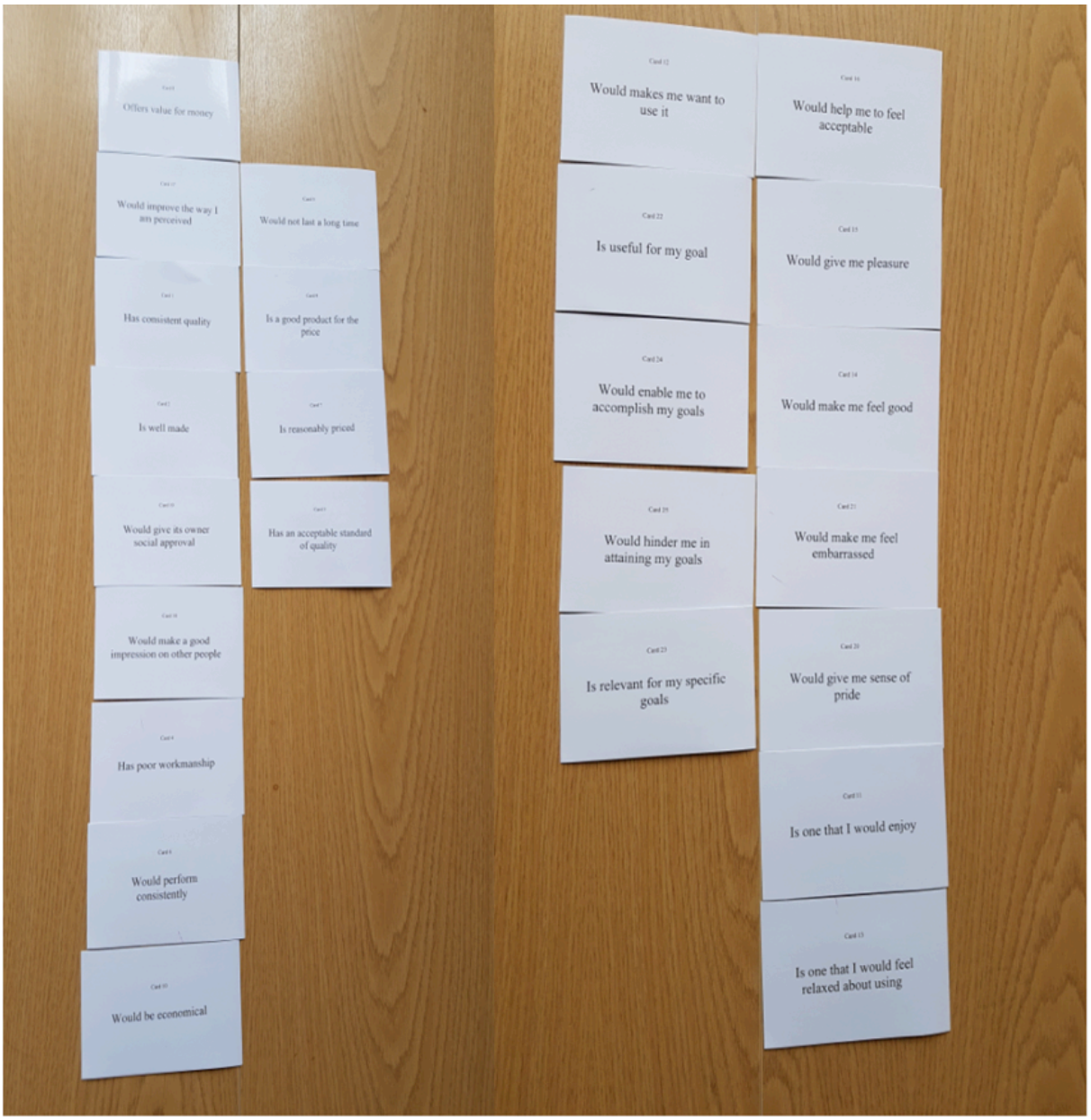
Thank you for participating in this study.

Submit

Appendix E: Example of Card sorts exercise: Phase 1 Study 2



Cognitive Pile **Affective Pile**



External Pile **Internal Pile**

Appendix F: Questionnaire Phase 2

Coleg Busnes, y Gyfraith, Addysg a Gwyddorau Cymdeithas, Prifysgol Bangor
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Elusen Gofrestrig Rhif/Registered charity 1141565

PRIFYSGOL BANGOR UNIVERSITY

Participant Information

Dear Participant,

You are invited to take part in a study about iPhone and its value. The purpose of the study is to understand the buyer's behaviour and the factors affecting the behavioural outcomes. Responding to all the questions is going to take approximately 10 to 15 minutes of your time. Payment is dependent on the completion of survey. For completing surveys satisfactorily, you will receive $*.

Your participation in this study is entirely voluntary, and your responses will be treated confidentially. You are free to withdraw from the study at any time before completing the questionnaire, however if you do so you will not be paid.

The results of the study are intended to be used for the researcher's PhD thesis and may also be used in articles submitted for publication, in presentations and reports. Your participation is greatly appreciated. Be rest assured that your responses will be held in the strictest of confidence, and solely used for academic and research purposes. No attempt would be made to disclose your identity to any third party.

If you have any questions about the study or would like to receive a summary of the results once the study has been completed please contact Surbhi Jain (abp4f8@bangor.ac.uk). If you have concerns about any aspect of the study please contact Professor Edward Shiu (e.shiu@bangor.ac.uk).

Thank you for taking the time to participate in this project.

Yours faithfully

Surbhi Jain
PhD candidate
Bangor Business School

Yours faithfully

Prof Edward Shiu
Professor of Marketing
Bangor Business School

Value survey

* If you agree with following statements, please tick the boxes:

- [ ] I agree that I am 18 years or older.
- [ ] I confirm that I have read and understand the participants information sheet for this study.
- [ ] I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason
- [ ] I own an iPhone handset
- [ ] I am a currently a US resident.

Next →

* Thank you for your interest in this study, but for the purpose of this study, it is required that you agree with all the statements shown earlier. Would you like to revisit the last page?

- ◯ Yes
- ◯ No

Next →

* If you agree with following statements, please tick the boxes:

- [ ] I agree that I am 18 years or older.
- [ ] I confirm that I have read and understand the participants information sheet for this study.
- [ ] I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason
- [ ] I own an iPhone handset
- [ ] I am a currently a US resident.

Next →

* How long have you used Apple iPhone handset?

Year(s)

Month(s)

* Please select your current iPhone model:

- ◯ iPhone 7
- ◯ iPhone 7 plus
- ◯ iPhone 6s
- ◯ iPhone 6s plus
- ◯ iPhone 6
- ◯ iPhone 6 plus
- ◯ iPhone SE
- ◯ iPhone 5s
- ◯ iPhone 5c
- ◯ iPhone 5
- ◯ iPhone 4s
- ◯ iPhone 4

Next →

* How long have you had iPhone 5c ?

Year(s)

Month(s)

* The most important feature of iPhone 5c, for me, is:

- ◯ Better camera than any other handset
- ◯ Better battery life than any other handset
- ◯ Faster processor
- ◯ Faster charging
- ◯ Wider range of networks for better roaming experience
- ◯ Other (please specify)

Text goes here

Next →

1 * As you answered before, the most important feature of iPhone is Better battery life than any other handset because it enables you to...

Next →

* Based on your opinion regarding iPhone 7, do you agree or disagree with following statements:

	Agree Strongly	Agree	Neither Agree nor Disagree	Disagree	Disagree Strongly
I think that iPhone 7 has consistent quality	○	○	○	○	○
iPhone 7 is well made	○	○	○	○	○
The iPhone 7 would perform consistently	○	○	○	○	○
iPhone 7 would not last a long time	○	○	○	○	○
iPhone 7 has an acceptable standard of quality	○	○	○	○	○
I think that iPhone 7 has poor workmanship	○	○	○	○	○

Next →

* Based on your opinion regarding iPhone 7, do you agree or disagree with following statements:

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
I think that iPhone 7 is a good product for the price	○	○	○	○	○
I think that iPhone 7 is reasonably priced	○	○	○	○	○
I believe that an iPhone 7 would be an economical handset	○	○	○	○	○
iPhone 7 offers value for money	○	○	○	○	○

Next →

* Based on your opinion regarding iPhone 7, do you agree or disagree with following statements:

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Using an iPhone 7 would give me pleasure	○	○	○	○	○
iPhone 7 would make me want to use it	○	○	○	○	○
iPhone 7 is one that I feel relaxed about using	○	○	○	○	○
iPhone 7 is the one that I would enjoy	○	○	○	○	○
Using an iPhone 7 would make me feel good	○	○	○	○	○

Next →

* Based on your opinion regarding iPhone 7, do you agree or disagree with following statements:

	Agree Strongly	Agree	Neither Agree nor Disagree	Disagree	Disagree Strongly
I think that iPhone 7 would improve the way I am perceived	○	○	○	○	○
Using an iPhone 7 would help me feel acceptable	○	○	○	○	○
Using an iPhone 7 would make me feel embarrassed	○	○	○	○	○
I believe that using iPhone 7 would give me social approval	○	○	○	○	○
I think that iPhone 7 would make a good impression on other people	○	○	○	○	○
Using an iPhone 7 would give me a sense of pride	○	○	○	○	○

Next →

* Based on your opinion regarding iPhone 7, do you agree or disagree with following statements:

	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Using an iPhone 7 enable me to accomplish my goals like dsa	○	○	○	○	○
iPhone 7 is useful for my goal of dsa	○	○	○	○	○
I think that iPhone 7 would hinder me in attaining my goals like dsa	○	○	○	○	○
I believe that iPhone 7 is relevant for my specific goals like dsa	○	○	○	○	○

Next →

* Based on your opinion regarding iPhone 7, do you agree or disagree with following statements:

	Agree Strongly	Agree	Neither Agree nor Disagree	Disagree	Disagree Strongly
iPhone is my first choice when I want to buy a smartphone	○	○	○	○	○
iPhone 7 is better than any other smartphone	○	○	○	○	○
I am willing to pay more to buy the latest iPhone than any other smartphone	○	○	○	○	○

Next →

* Based on your opinion regarding iPhone 7, do you agree or disagree with following statements:

	Agree Strongly	Agree	Neither Agree nor Disagree	Disagree	Disagree Strongly
iPhone 7 is more preferable to any other smartphones	○	○	○	○	○
I like iPhone 7 very much.	○	○	○	○	○
iPhone 7 is the one that I appreciate the most	○	○	○	○	○

Next →

* Please answer the following questions, based on your opinion regarding iPhone 7, by selecting one option for each statements:

My iPhone...

	Extremely Satisfied	Very Satisfied	Satisfied	Somewhat Satisfied	Not Satisfied
Is exactly what I needed	○	○	○	○	○
Exceed my expectations	○	○	○	○	○

Please answer the following questions by selecting the *best* answer to the following multiple choice questions:

2 * My iPhone 7 is exactly what I needed

- ○ Agree Strongly
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Disagree Strongly

*

Overall, I am ...

- ○ Extremely Satisfied with my iPhone
- ○ Very Satisfied with my iPhone
- ○ Satisfied with my iPhone
- ○ Somewhat Satisfied with my iPhone
- ○ Not Satisfied with my iPhone

Next →

About You

The information you provide will remain confidential and can not be used to identify you.

3 What is your age range?

- ◯ 18 - 24
- ◯ 25 - 34
- ◯ 35 - 44
- ◯ 45 - 54
- ◯ 55 - 64
- ◯ 65 or older
- ◯ Prefer not to answer

4 What is your gender?

- ◯ Male
- ◯ Female
- ◯ Prefer not to answer

Next →

Thank you for participating in this study. Your unique MTurk survey completion code for claiming your payment is 7828739f

* Please copy and paste this code into the response box below to complete your survey.

Submit

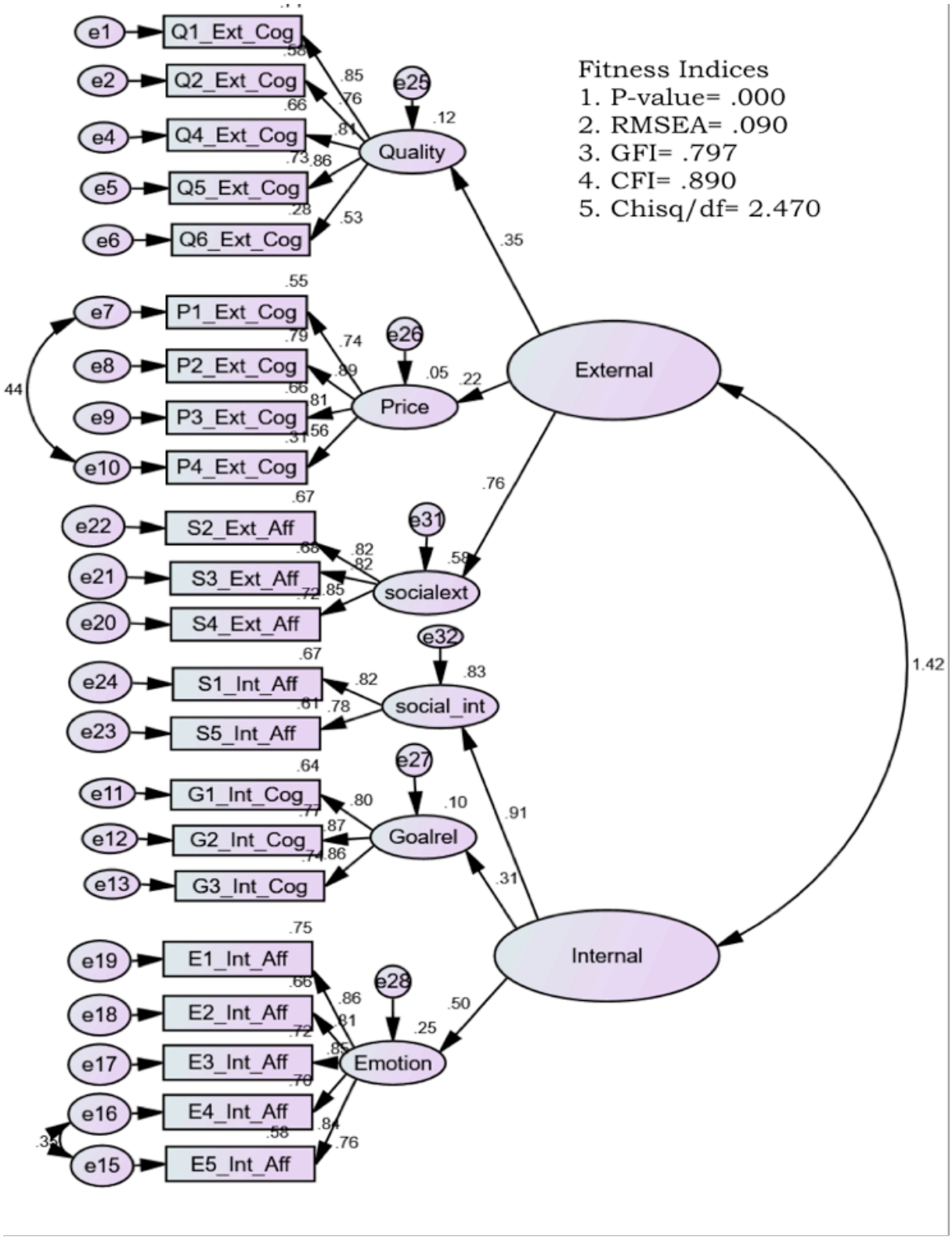
Appendix G: Correlation coefficient for PERVAL dimensions

	con_qual	wel_made	acc_qual	perf_cons	poor_wor	reasn_pr	val_fr_m	gd_fr_pr	econ	enjoy	want	relax	feel_gd	pleasure	feel_acc	imp_per	gd_impre	socl_app	pride	use_goal	rel_goal	accom_gl	not_last	embarras	hindr_gl
con_qual	0	0.64	0.68	0.74	0.43	0.21	0.31	0.34	0.08	0.49	0.41	0.51	0.39	0.42	0.17	0.19	0.27	0.12	0.27	0.47	0.4	0.43	0.32	0.27	0.03
wel_made	0.64	0	0.61	0.66	0.39	0.16	0.19	0.31	0	0.36	0.42	0.37	0.37	0.35	0.21	0.17	0.18	0.07	0.22	0.22	0.29	0.3	0.32	0.28	0.06
acc_qual	0.68	0.61	0	0.7	0.48	0.15	0.22	0.19	0.05	0.4	0.36	0.44	0.32	0.39	0.13	0.16	0.19	0.09	0.25	0.32	0.4	0.37	0.39	0.33	0.08
perf_cons	0.74	0.66	0.7	0	0.43	0.15	0.28	0.25	0.02	0.51	0.42	0.48	0.38	0.41	0.07	0.19	0.21	0.05	0.21	0.33	0.37	0.41	0.34	0.38	0.11
poor_wor	0.43	0.39	0.48	0.43	0	0.26	0.32	0.27	0.13	0.37	0.36	0.39	0.27	0.41	0.17	0.16	0.27	0.21	0.24	0.31	0.38	0.47	0.44	0.27	0.16
reasn_pr	0.21	0.16	0.15	0.15	0.26	0	0.66	0.6	0.66	0.19	0.24	0.17	0.22	0.24	0.15	0.14	0.08	0.08	0.18	0.17	0.15	0.12	0.18	0.01	-0.2
val_fr_m	0.31	0.19	0.22	0.28	0.32	0.66	0	0.72	0.49	0.32	0.33	0.23	0.28	0.27	0.12	0.06	0.09	0.11	0.18	0.2	0.22	0.22	0.17	0.2	-0
gd_fr_pr	0.34	0.31	0.19	0.25	0.27	0.6	0.72	0	0.46	0.33	0.35	0.27	0.31	0.3	0.14	0.05	0.16	0.12	0.09	0.3	0.24	0.19	0.21	0.11	-0
econ	0.08	0	0.05	0.02	0.13	0.66	0.49	0.46	0	0.16	0.12	0.14	0.2	0.22	0.18	0.19	0.1	0.15	0.15	0.1	0.04	0.03	0.12	0	-0.2
enjoy	0.49	0.36	0.4	0.51	0.37	0.19	0.32	0.33	0.16	0	0.7	0.76	0.72	0.61	0.2	0.24	0.29	0.28	0.29	0.47	0.49	0.5	0.34	0.2	0.2
want	0.41	0.42	0.36	0.42	0.36	0.24	0.33	0.35	0.12	0.7	0	0.68	0.71	0.65	0.21	0.25	0.29	0.19	0.33	0.48	0.6	0.58	0.23	0.27	0.26
relax	0.51	0.37	0.44	0.48	0.39	0.17	0.23	0.27	0.14	0.76	0.68	0	0.69	0.65	0.16	0.26	0.29	0.25	0.27	0.53	0.55	0.56	0.37	0.24	0.25
feel_gd	0.39	0.37	0.32	0.38	0.27	0.22	0.28	0.31	0.2	0.72	0.71	0.69	0	0.76	0.34	0.34	0.38	0.34	0.41	0.39	0.48	0.45	0.29	0.15	0.07
pleasure	0.42	0.35	0.39	0.41	0.41	0.24	0.27	0.3	0.22	0.61	0.65	0.65	0.76	0	0.27	0.3	0.35	0.31	0.31	0.48	0.51	0.5	0.34	0.18	0.09

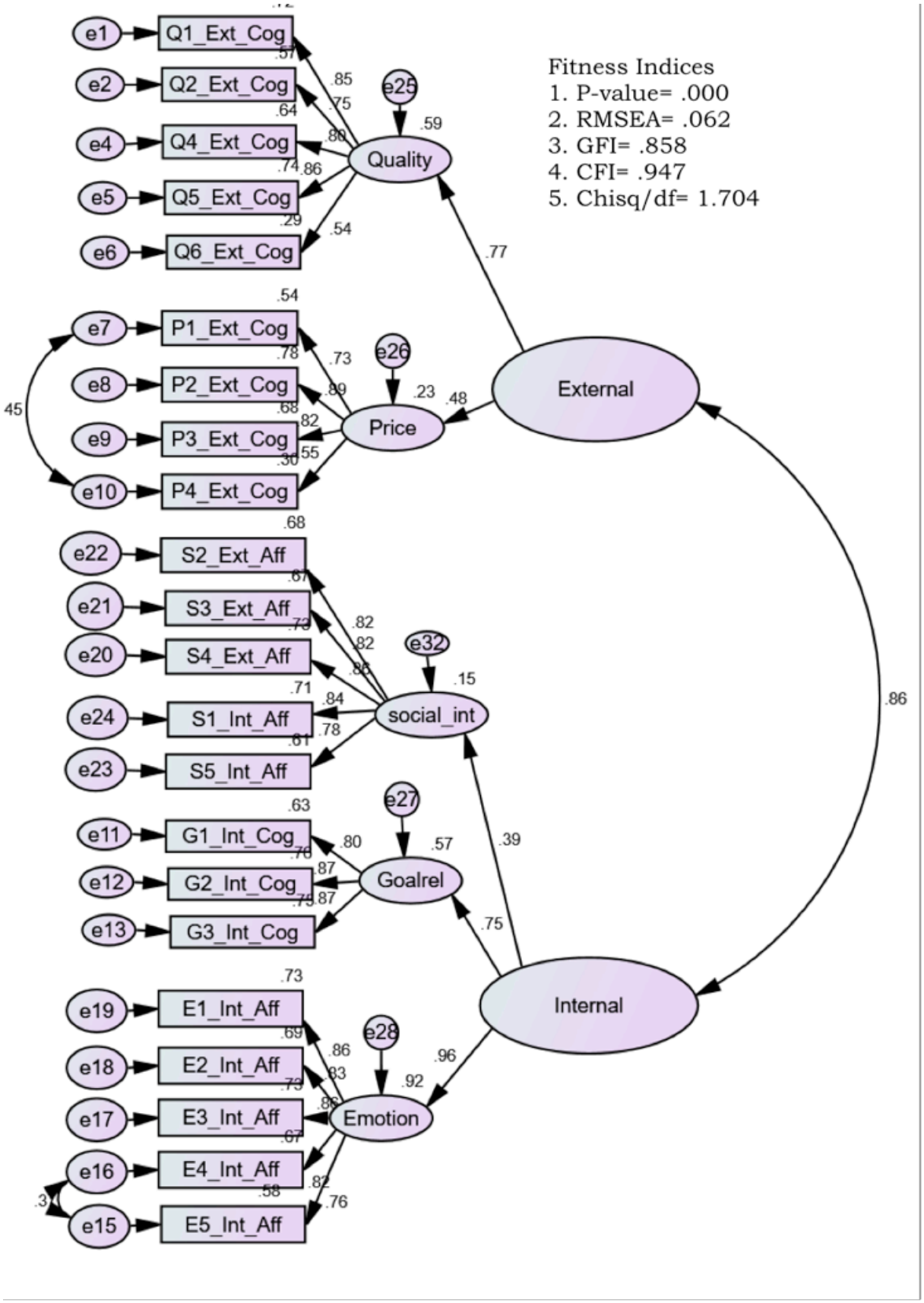
feel_acc	0.17	0.21	0.13	0.07	0.17	0.15	0.12	0.14	0.18	0.2	0.21	0.16	0.34	0.27	0	0.68	0.65	0.78	0.64	0.05	0.11	0.12	0.06	0.01	-0.1
imp_per	0.19	0.17	0.16	0.19	0.16	0.14	0.06	0.05	0.19	0.24	0.25	0.26	0.34	0.3	0.68	0	0.69	0.69	0.67	0.11	0.12	0.13	-0.03	0.03	-0.1
gd_impre	0.27	0.18	0.19	0.21	0.27	0.08	0.09	0.16	0.1	0.29	0.29	0.29	0.38	0.35	0.65	0.69	0	0.69	0.69	0.21	0.24	0.25	0.09	0.05	-0
socl_app	0.12	0.07	0.09	0.05	0.21	0.08	0.11	0.12	0.15	0.28	0.19	0.25	0.34	0.31	0.78	0.69	0.69	0	0.62	0.12	0.13	0.13	0.08	0.06	-0.1
pride	0.27	0.22	0.25	0.21	0.24	0.18	0.18	0.09	0.15	0.29	0.33	0.27	0.41	0.31	0.64	0.67	0.69	0.62	1	0.16	0.23	0.24	0.03	0.1	-0.1
use_goal	0.47	0.22	0.32	0.33	0.31	0.17	0.2	0.3	0.1	0.47	0.48	0.53	0.39	0.48	0.05	0.11	0.21	0.12	0.16	0	0.7	0.69	0.12	0.29	0.2
rel_goal	0.4	0.29	0.4	0.37	0.38	0.15	0.22	0.24	0.04	0.49	0.6	0.55	0.48	0.51	0.11	0.12	0.24	0.13	0.23	0.7	0	0.76	0.24	0.31	0.27
accom_gl	0.43	0.3	0.37	0.41	0.47	0.12	0.22	0.19	0.03	0.5	0.58	0.56	0.45	0.5	0.12	0.13	0.25	0.13	0.24	0.69	0.76	0	0.25	0.34	0.27
not_last	0.32	0.32	0.39	0.34	0.44	0.18	0.17	0.21	0.12	0.34	0.23	0.37	0.29	0.34	0.06	-0	0.09	0.08	0.03	0.12	0.24	0.25	0	0.12	0
embarras	0.27	0.28	0.33	0.38	0.27	0.01	0.2	0.11	0	0.2	0.27	0.24	0.15	0.18	0.01	0.03	0.05	0.06	0.1	0.29	0.31	0.34	0.12	0	0.23
hindr_gl	0.03	0.06	0.08	0.11	0.16	-0.2	-0	-0	-0.2	0.2	0.26	0.25	0.07	0.09	-0.1	-0.1	-0	-0.1	-0.09	0.2	0.27	0.27	0	0.23	1
	0.74	0.66	0.7	0.74	0.48	0.66	0.72	0.72	0.66	0.76	0.71	0.76	0.76	0.76	0.78	0.69	0.69	0.78	1	0.7	0.76	0.76	0.44	0.38	1

Appendix H: CFA analysis of Social Dimension

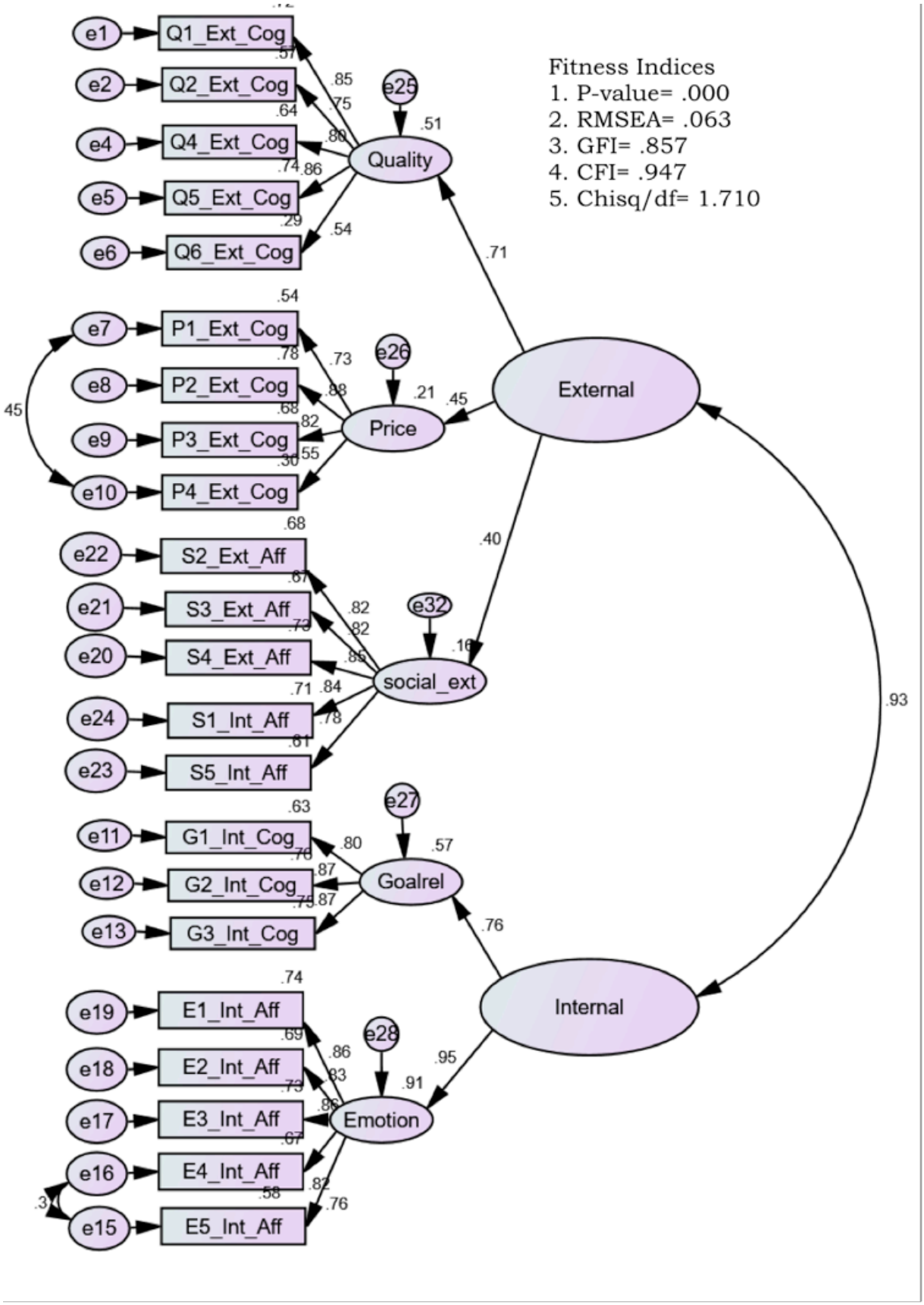
Social dimension as tapping into both, internal and external



Social dimension as tapping into internal



Social dimension as tapping into external


Fitness Indices
1. P-value= .000
2. RMSEA= .063
3. GFI= .857
4. CFI= .947
5. Chisq/df= 1.710
Quality
Price
External
social_ext
Goalrel
Internal
Emotion
Q1_Ext_Cog
Q2_Ext_Cog
Q4_Ext_Cog
Q5_Ext_Cog
Q6_Ext_Cog
P1_Ext_Cog
P2_Ext_Cog
P3_Ext_Cog
P4_Ext_Cog
S2_Ext_Aff
S3_Ext_Aff
S4_Ext_Aff
S1_Int_Aff
S5_Int_Aff
G1_Int_Cog
G2_Int_Cog
G3_Int_Cog
E1_Int_Aff
E2_Int_Aff
E3_Int_Aff
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Appendix I: Ethics

Phase 1, Study 1 and Phase 2: Survey

Declaration (Students)
(PhD, MPhil, MA by Research, MA Taught and Undergraduate Degrees)

A scanned copy of this declaration should be emailed to Anwen Evans, Secretary, CBLESS Ethics Committee (CBLESSEthics@bangor.ac.uk).

This should be accompanied by:

1. A copy of the research proposal detailing any risk as defined in the University's Ethics Policy.
2. Copies of relevant supporting documentation (for example, letters of invitation to study participants, participant information sheets and consent forms).

Prior to undertaking any research projects, students should familiarise themselves with the University's Research Ethics Policy:
http://www.bangor.ac.uk/ar/ro/recordsmanagement/REF.php

Projects entailing no risk, as that term is understood in the context of the Ethics Policy, are generally projects that do not entail the collection of primary data from subjects. They **do not** have to be referred to the Ethics Committee for approval. Examples of **no risk**:

1. Statistical analyses of time series data published by the Office of National Statistics to investigate the impact of fiscal policy on unemployment.
2. Investigations of interlocking membership on executive boards and executive remuneration committees in the not-for-profit social enterprise companies, conducted using data obtained from government agencies, commercial databases and other public records.
3. Investigation of the British Crime Survey data to examine why some police authorities appear to be more efficient than others.

Students should note that the following research activities would normally be considered as involving more than minimal risk and, consequently, **require ethical review** by the College Ethics Committee:

1. Research involving vulnerable groups – for example, children and young people, those with a learning disability or cognitive impairment, or individuals in a dependent or unequal relationship.
2. Research involving sensitive topics – for example, participants' sexual behaviour, their illegal or political behaviour, their experience of violence, their abuse or exploitation, their mental health, or their gender or ethnic status.
3. Research involving groups where permission of a gatekeeper is normally required for initial access to members.
4. Research necessarily involving deception or which is conducted without participants' full and informed consent at the time the study is carried out.
5. Research involving access to records of personal or confidential information, including genetic and other biological information, concerning identifiable individuals.
6. Research that would induce psychological stress, anxiety or humiliation or cause more than minimal pain.
7. Research involving intrusive interventions – for example, the administration of drugs or other substances, vigorous physical exercise, or techniques such as hypnotherapy.

Data Protection
If it is anticipated that human participants will be engaged, duly signed consent forms and information sheets should be drawn up and copies lodged with the secretary of the College Ethics Committee. Special attention must be given to compliance with the legal requirement of checks by the Criminal Records Bureau.

Declaration
The declaration must be accompanied by the research proposal and relevant supporting documentation. It should be signed by the student and then counter-signed by the supervisor.

I certify that I have read the University Research Ethics Policy. The issues raised there that are relevant for this research project are described in the attached research proposal.

(Sd)..... Date..14-6-16

Student (NAME): Surbhi Jain

I agree with the declaration above

(Sd)..... Date..14/6/16

Supervisor (NAME): DR. SONYA HANNA

COLEG BUSNES, Y GYFRAITH, ADDYSG A GWYDDORAU CYMDEITHAS
COLLEGE OF BUSINESS, LAW, EDUCATION AND SOCIAL SCIENCES

PRIFYSGOL BANGOR UNIVERSITY

20th July 2016

Dear Surbhi Jain

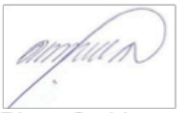
Re: Revisiting and extending perceived value

Thank you for your recent application to the CBLESS Research Ethics Committee.

I am writing to confirm permission, on behalf of the CBLESS Research Ethics Committee, for the commencement of your research project.

I wish you well with your research.

Yours sincerely



Diane Seddon
Chair, CBLESS Research Ethics Committee

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DEON Y COLEG/DEAN OF COLLEGE

Registered charity number: 1141565

www.bangor.ac.uk

Phase 1 Study 2: Card sorting exercise

Declaration (Students)
(PhD, MPhil, MA by Research, MA Taught and Undergraduate Degrees)

A scanned copy of this declaration should be emailed to Anwen Evans, Secretary, CBLESS Ethics Committee (CBLESSEthics@bangor.ac.uk).

This should be accompanied by:

1. A copy of the research proposal detailing any risk as defined in the University's Ethics Policy.
2. Copies of relevant supporting documentation (for example, letters of invitation to study participants, participant information sheets and consent forms).

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1. Statistical analyses of time series data published by the Office of National Statistics to investigate the impact of fiscal policy on unemployment.
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5. Research involving access to records of personal or confidential information, including genetic and other biological information, concerning identifiable individuals.
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Data Protection
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Declaration
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I certify that I have read the University Research Ethics Policy. The issues raised there that are relevant for this research project are described in the attached research proposal.

(Sd).....Date..13/12/16

Student (NAME): Surbhi Jain

I agree with the declaration above

(Sd).....Date..13/12/16

Supervisor (NAME): PROF. EDUARDO SHIU

COLEG BUSNES, Y GYFRAITH, ADDYSG A GWYDDORAU CYMDEITHAS
COLLEGE OF BUSINESS, LAW, EDUCATION AND SOCIAL SCIENCES

PRIFYSGOL BANGOR UNIVERSITY

13 January 2017

Dear Surbhi

Re: Revisiting and Extending Perceived value

Thank you for your recent revised application to the CBLESS Research Ethics Committee.

The committee has considered your application and I am now able to give permission, on behalf of the CBLESS Research Ethics Committee, for the commencement of your research project.

I wish you well with your research.

Yours sincerely

Dr. Diane Seddon
Chair, College Ethics Committee

cc – Professor Edward Shui

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