



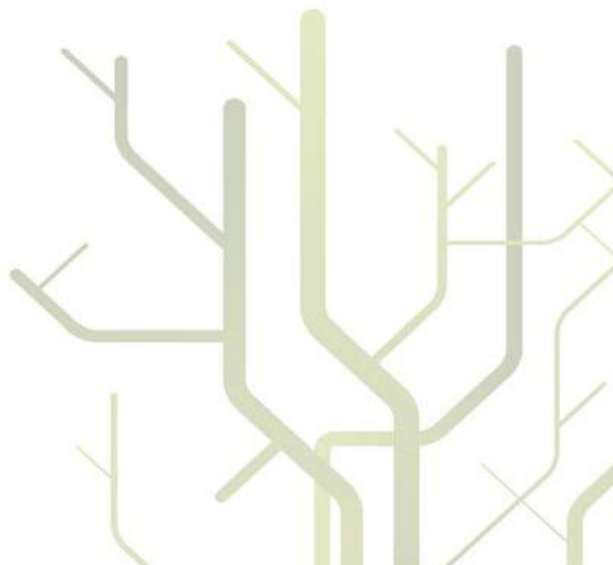
Moderators in the relationship between satisfaction and loyalty of Vietnamese fish products consumers



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Abstract

Purpose – This thesis focuses on the movement from consumer satisfaction to loyalty using samples of Vietnamese fish products consumers. Specifically, this study first discusses and tests the strength and possible different forms of the relationships between satisfaction and loyalty. Secondly, this thesis focuses on if, and how, satisfaction strength properties (e.g. involvement, ambivalence, knowledge, and certainty) moderate the satisfaction–loyalty relationship. In addition, from the characteristics of the local food markets where food risks are documented, this thesis also extends to discuss and test the role of perceived risk besides involvement, ambivalence, knowledge, and certainty in an integrated theoretical model.

Design/methodology/approach – The empirical foundation for this thesis consists of three surveys on the consumption of fish products in Vietnam ($n > 350$) (Papers 1, 2, 3 and 4) and one controlled experiment with a 2 x 2 between-subject factorial design ($n = 120$) (Paper 1 and 5). The empirical findings rely mainly on multivariate regression (Paper 1), structural equation modelling (SEM) (Papers 2, 3 and 4), analysis of variance (ANOVA) and correlation comparison (Paper 5).

Findings and contributions – First, this thesis shows that consumer satisfaction is an important predictor of loyalty in the context of this study. The satisfaction–loyalty relationship is both linear and non-linear depending on the context and combination of the conceptual facets of satisfaction (e.g. transaction-specific versus cumulative) and loyalty (e.g. intentional versus behavioural). Second, the satisfaction–loyalty relationship is found to be affected by satisfaction strength’s properties such as involvement, ambivalence, knowledge, and certainty. However, the moderating mechanism of these properties depends on different approaches to define and measure the constructs as well as interactions between them. While involvement moderates directly and positively the

satisfaction–loyalty relationship, ambivalence moderates indirectly and negatively this relationship via the mediator role of involvement. Knowledge as expertise is found as a negative moderator, but objective knowledge and manipulated knowledge are positive moderators in the satisfaction–loyalty relationship. Certainty as a construct measured independently from the evaluations of satisfaction is proven as a positive moderator in the satisfaction–loyalty relationship. Finally, perceived risk is found to influence negatively on both satisfaction and loyalty. However, manipulated risk influences only on loyalty but not satisfaction. More importantly, both perceived and manipulated risks moderate negatively the satisfaction–loyalty relationship. Those discussions and findings in this thesis contribute to a deeper understanding of the drivers and barriers in moving from satisfaction to loyalty for Vietnamese fish consumers.

Practical implications – This thesis shows that marketers should pay more attention to the non-linear nature of the satisfaction–loyalty relationship to improve the accuracy of predicting loyalty. It also demonstrates that satisfaction is not sufficient to create consumer loyalty, especially in the situations of high uncertainty, ambivalence and highly perceived risk. Marketing strategies, which are directed at educating consumers with relevant knowledge, to consolidate involvement and certainty towards the focal products, and to reduce consumers’ perceived risk and ambivalence, may be the most effective ways to increase repurchase ratings.

Research limitations – The present research is mainly based on convenience samples towards fish products in Vietnam. Future research in the fish area should expand to a more representative sample of the Vietnamese population, as well as be tested in other countries or markets where fish is a common meal. Different approaches exist in literature to define and measure consumer knowledge, involvement, certainty, ambivalence, perceived risk, satisfaction and loyalty. Thus, future studies should test the extended model with different

measures and aspects of these constructs to have a more comprehensive picture about the research phenomenon. The study has not considered the other moderators of the satisfaction–loyalty relationship such as consumers’ demographic characteristics, relational or situational characteristics. Outside the context of food or fish, future research should cover other products and/or services.

Originality/value – The findings provide an overall view of the non-linearity and dynamics in the different conceptual relationships between satisfaction and loyalty in different hierarchies within one product category. It is, to my knowledge, the first empirical study to illustrate the non-linear effect of the transaction-specific satisfaction on intentional loyalty. In addition, this thesis extends previous studies to consider comprehensively the moderator role of the four important properties of satisfaction strength. Importantly, it is to my knowledge the first study to demonstrate the moderator effect of objective knowledge, perceived certainty as well as providing empirical evidence supporting the indirect moderating effect of ambivalence in the satisfaction–loyalty relationship. Finally, this thesis emphasizes the different roles including as moderator of perceived risk affecting satisfaction, loyalty and the satisfaction–loyalty relationship. Hopefully, the findings of this thesis are valuable for developing marketing strategies and knowledge to increase loyalty of consumers in general and particularly of Vietnamese fish consumers.

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PART III. PAPERS

- Paper 1. Tuu, H. H. & Olsen, S. O. Nonlinear effects between satisfaction and loyalty: An empirical study of different conceptual relationships. *Journal of Targeting, Measurement and Analysis for Marketing*, 18, 239–251.
- Paper 2. Tuu, H. H. & Olsen, S. O. (2010). Ambivalence and involvement in the satisfaction–repurchase loyalty relationship. *Australasian Marketing Journal*, 18, 151–158.
- Paper 3. Tuu, H. H. & Olsen, S. O. (2009). Food risk and knowledge in the satisfaction–repurchase loyalty relationship. *Asia Pacific Journal of Marketing and Logistics*, 21(4), 521–536.
- Paper 4. Tuu, H. H., Olsen, S. O. & Linh P. T. T. The moderator effects of perceived risk, objective knowledge and certainty in the satisfaction–loyalty relationship. Accepted by *Journal of Consumer Marketing*, forthcoming.
- Paper 5. Tuu, H. H. & Olsen, S. O. Certainty, risk and knowledge in the satisfaction–purchase intention relationship in a new product experiment. Submitted to *Asia Pacific Journal of Marketing and Logistics*.

PART I. INTRODUCTION

1.1. Background and purpose

1.1.1. Background

The purpose of this thesis is to contribute to a deeper understanding of the nature of the satisfaction–loyalty relationship as well as of the role of satisfaction strength’s properties and perceived risk as drivers and barriers in moving from consumer satisfaction to loyalty. The concept of satisfaction occupies a central position in marketing thought and practice and is a major outcome of marketing activity (Churchill & Surprenant, 1982; Oliver, 2009).

Satisfaction is suggested to link processes culminating in purchase and consumption with post-purchase phenomena, such as loyalty (Bearden & Teel, 1983; Churchill & Surprenant, 1982; Fornell et al., 1996; Oliver, 1999). Solomon (1992) indicates that purchase decisions based on loyalty may become simplified and even habitual in nature and this may be a result of satisfaction with the current products or brand(s). However, satisfaction may often be “a matter of picking a low-hanging fruit” and a “trap” for marketers and managers (Reichheld, 1996, p. 58) because satisfied customers are not necessarily loyal (Rowley & Dawes, 2000) and dissatisfied customers do not always defect (Day, 1984). These failures in predicting loyalty from satisfaction lead to two important research streams which develop alternative models to explain the gap between satisfaction and loyalty.

The first focuses on the nature of the satisfaction–loyalty relationship. Specifically, while traditional perspectives believe that the effect of satisfaction on loyalty is simply, direct and linear (Szymanski & Henard, 2001), recent perspectives suggest that this effect is indeed complicated and non-linear (Agustin & Singh 2005; Anderson & Mittal 2000; Bowman & Narayandas 2004; Homburg et al. 2005; van Doorn & Verhoef 2008). However, previous

studies provide a mixed and inconclusive view of whether the effect of satisfaction on loyalty exhibits diminishing or increasing returns due to different approaches to define and measure the relevant constructs and different functional forms used to predict loyalty. Thus, a study which explores this link in different conceptual relationships using competitive models may be expected to generate a more comprehensive understanding of the nature of the satisfaction–loyalty relationship than most previous studies.

The second issue in this thesis focuses on mediators and/or moderators of the satisfaction–loyalty relationship. This area of marketing research includes variables or constructs such as demographic characteristics (e.g. age, education, sex, household income) (Cooil et al., 2007; Mittal & Kamakura, 2001; Homburg & Giering, 2001), relational characteristics (e.g. relationship age, loyalty programmes) (Evanschitzky & Wunderlich, 2006; Seiders et al., 2005), or marketplace characteristics (e.g. convenience, competitive intensity and market structure) (Cooil et al., 2007; Jones & Sasser, 1995; Seiders et al., 2005). Another stream of research is mostly based on general attitude theories (e.g. Lavine et al., 2000; Visser et al., 2006) to suggest that properties of attitude strength dimensions (e.g. involvement, ambivalence, knowledge, certainty) could play as moderators in the satisfaction–loyalty relationship (Bloemer & de Ruyter, 1998; 1999; Capraro et al., 2003; Chandrashekar et al., 2007; Olsen et al., 2005; Olsen, 2007; Seiders et al., 2005). However, inconsistent findings from previous studies require a more reasonable explanation, and thus generate challenges.

Several studies test one-by-one moderator or “isolated” moderator effects (e.g. Evanschitzky & Wunderlich, 2006; Homburg & Giering, 2001; Olsen, 2007). As several moderators interact, and with different valence or direction (Bell et al., 2005; Chandrashekar et al., 2007; Costarelli & Colloca, 2007; Seiders et al., 2005), this study explores the combined interaction and moderator effect of attitude strength properties (Fabrigar et al., 2006; Visser et

al., 2006; Olsen, 1999) on the satisfaction–loyalty relationship. These gaps are explored in this thesis with the ambition to create a deeper insight about the moderator mechanism between satisfaction and loyalty in general and by introducing new moderators such as satisfaction strength (Chandrashekar et al., 2007) in particular. Therefore, the studies in this thesis explore the moderator effect of each property in the relations with another in a combined or interactive approach, such as between involvement and ambivalence, knowledge and certainty.

Both ambivalence and involvement are previously suggested as isolated moderators of the satisfaction–loyalty relationship (Bloemer & de Ruyter, 1999; Homburg & Giering, 2001; Olsen, 2007; Olsen et al., 2005; Seiders et al., 2005; Yi & Jeon, 2003). Consumers can be very involved with products due to their benefits, but they also feel ambivalent about them because of negative attributes in addition to the benefits (Costarelli & Colloca, 2007; Olsen et al., 2005). Thus, satisfaction should be considered in the relations with both involvement and ambivalence. In addition, the separation of involvement and ambivalence in previous studies gives an opportunity for this thesis to investigate the interaction between involvement and ambivalence affecting the satisfaction–loyalty relationship.

Knowledge and certainty are two other important properties of attitude strength (Olsen, 1999; Smith et al., 2008; Visser et al., 2006) and also suggested as isolated moderators in the satisfaction–loyalty relationship (Capraro et al., 2003; Chandrashekar et al., 2007; Cooil et al., 2007; Evanschitzky & Wunderlich, 2006). The effect of knowledge on its consequences depends on the way in which this construct is measured (Cordell, 1997) as well as the nature and content of it (Fabrigar et al., 2006). However, most previous studies in this area measure knowledge as subjective/perceived expertise. As subjective knowledge has a modest correlation with objective/actual knowledge, subjective measure of knowledge is typically

considered as a meta-cognitive assessment (e.g. Bassili, 1996). This means that subjective knowledge may contain information of other attitude strength's properties such as certainty (Bassili, 1996; Fabrigar et al., 2006). Thus, it is difficult to decompose its effects with certainty (Fabrigar et al., 2006). The measures of knowledge as subjective expertise also ignore other aspects of consumer knowledge such as product-relevant knowledge (Aurier et al., 2000; Fabrigar et al., 2006; Rortveit & Olsen, 2007). Furthermore, only one study by Chandrashekar et al. (2007) includes the moderator effect of certainty on the satisfaction–loyalty relationship. They focus on the simultaneous manifestation of uncertainty in the variation surrounding the central tendency of stated judgments of satisfaction. Under this approach, satisfaction level reflects the mean of the stated judgments while uncertainty manifests itself in the variance of the stated judgments. Thus, the measure of certainty used by the authors may contain the information of other properties of satisfaction strength, such as extremity (Bassili, 1996). While knowledge and certainty are closed and related constructs (Fabrigar et al., 2006; Smith et al., 2008), no study includes both of them to test their moderator effects in a combined approach. Thus, how different types of knowledge (e.g. subjective/perceived and objective/actual) and certainty affect the satisfaction–loyalty relationship is of special interest in this thesis.

Food has previously been used as an object of the satisfaction–loyalty relationship (Olsen, 2002). Food is also used as a context in studies about ambivalence (Armitage & Conner, 2000; Jonas et al., 1997; Olsen et al., 2005; Sparks et al., 2001), involvement (Olsen, 2007; Verbeke & Vackier, 2005), and knowledge (Rortveit & Olsen, 2007). Thus, this thesis focuses on food/fish as a main research object. The context is also narrowed down to fish products as everyday main meals for home consumption among Vietnamese consumers. In a developing country such as Vietnam, consumers are faced with a low and unreliable quality of food/fish supplied by the local markets. Thus, the number of victims due to food poisoning has been

considerable in recent years¹. Even though perceived risk is an important construct in marketing (Campbell & Goldstein, 2001), only a few studies investigate how it interacts with satisfaction in influencing consumers' repurchase loyalty or intentions (e.g. Grewal et al., 2007; Tsiros & Heilman, 2005). Furthermore, consumer knowledge and certainty are suggested as important factors to understand perceived risk as well as how consumers manage to reduce risks (Dowling & Staelin, 1994; Mitchell, 1999; Roselius, 1971). Thus, the role of perceived risk and its interaction with knowledge on satisfaction, loyalty, certainty and on the satisfaction–loyalty relationship is also a main issue in this thesis.

1.1.2. Research objectives

There are three main objectives in this thesis:

- 1) What is the nature of the relationship between satisfaction and loyalty under different conceptual frameworks?
- 2) How do the properties of attitude/satisfaction strength (e.g. ambivalence, involvement knowledge, and certainty) influence the satisfaction–loyalty relationship?
- 3) How does perceived risk affect satisfaction, loyalty and on the satisfaction–loyalty relationship?

The first objective is to shed light on the non-linearities of the different conceptual relationships between satisfaction and loyalty. This thesis tests the non-linearity between satisfaction (transaction-specific/cumulative) and loyalty (intentional/repurchase) using different functional forms and data involving different hierarchies within one product category. This objective is also related to determine whether non-linear functional forms perform better than the traditional linear functional form in expressing the effect of satisfaction on loyalty. Traditionally, the satisfaction–loyalty relationship is linear (Szymanski

¹ Annual Report of the Ministry of Public Health, 2007

& Henard, 2001), but the linear model may generate systematically biased estimates (Jones & Sasser, 1995). Previous studies often use one or another form of non-linearity to explore the non-linear nature (i.e. decreasing or increasing return) of one or another conceptual relationship between these two constructs across products or services. However, the problem of whether the non-linear nature of the relationship is consistent across different conceptual relationships, functional forms, and different hierarchies within one product category is uncovered. This objective still includes the first exploration of the non-linear effect of the first transaction-specific satisfaction on intentional loyalty. This is important for helping marketers to give more accurate predictions to improve consumer loyalty in different contexts from transaction-specific satisfaction of a new product toward satisfaction and loyalty developed over years of consumption (Anderson & Mittal, 2000).

The second objective of this thesis is to discuss and test the moderator role of the properties of satisfaction strength in the satisfaction–loyalty relationship. The attitude theories indicate a range of properties which describe for a strong (weak) attitude (Lavine et al., 2000; Visser et al., 2006). Among these properties, involvement, ambivalence, knowledge, and certainty are most important properties which attract a special interest in marketing (Olsen, 1999). It is also suggested that each property may have an independent effect or may interact with another property to influence the attitude-behaviour relationship (see Visser et al., 2006 for a review). Thus, an important purpose of this thesis is to contribute to a more detailed understanding of how these properties interact with each other or generate a combined effect to influence the satisfaction–loyalty relationship. In this thesis, I especially focus on two pairs of properties: ambivalence and involvement, and knowledge and certainty. This objective is expected to create a more comprehensive understanding about the moderator effects of satisfaction strength on the satisfaction–loyalty relationship as well as managerial implications to increase repurchase ratings.

Involvement is an important construct in marketing (Warrington & Shim, 2000) and is also suggested as a mediator and/or moderator in the satisfaction–loyalty relationship (Bloemer and de Ruyter, 1998; 1999; Homburg & Giering, 2001; Johnson et al., 2001; Olsen, 2007; Suh & Yi, 2006; Yi & Jeon, 2003). However, the conceptual arguments, the effect mechanism as well as empirical findings about how involvement moderates the satisfaction–loyalty relationship in previous studies are controversial. Furthermore, while the role of involvement as a mediator and a moderator is widely accepted, the separation of the two roles of involvement in investigating the satisfaction–loyalty relationship (e.g. Olsen, 2007) may generate a bias view. Only one study (Costarelli & Colloca, 2007) tests both roles simultaneously within an attitude-intention framework published in a social psychology journal. This study suggests that involvement could both mediate and moderate the attitude-intention relationship. Thus, the second objective is started with the discussions and simultaneous tests of these roles of involvement in the satisfaction–loyalty relationship.

Ambivalence is confirmed as a moderator in the satisfaction–loyalty relationship but empirical evidence is weak (Olsen et al., 2005). It is also suggested that the moderator effect of ambivalence on the attitude-behaviour relationship is not direct but through mediators such as involvement (Armitage & Conner, 2000; Costarelli & Colloca, 2007). As both involvement and ambivalence appear simultaneously when consumers give evaluations about products, the following questions, are uncovered: Will a satisfied and ambivalent consumer continue to be loyal if he or she is less involved in a product? What is the interaction between ambivalence and involvement to influence on the satisfaction–repurchase loyalty relationship? Thus, the inclusion of both involvement and ambivalence in the satisfaction–repurchase loyalty relationship is expected as a contribution from previous studies (Costarelli & Colloca, 2007; Olsen, 2007; Olsen et al., 2005).

Knowledge is a multi-dimensional construct (Alba & Hutchison, 1987; Brucks, 1985) consisting of concepts such as declarative knowledge, procedural knowledge, experience, expertise, and familiarity (Alba & Hutchison, 1985; Brucks, 1986; Park et al., 1994; Worsley, 2002). Knowledge is also classified as subjective knowledge and objective knowledge (Alba & Hutchison, 1987; Brucks, 1985; Cordell, 1997). Most previous studies investigate subjective knowledge as market expertise (Capraro et al., 2003; Chiou & Droge, 2006; Chiou et al., 2002; Cooil et al., 2007; Evanschitzky & Wunderlich, 2006) and suggest that this type of knowledge may negatively moderate the satisfaction–loyalty relationship (Capraro et al., 2003; Cooil et al., 2007; Evanschitzky & Wunderlich, 2006). However, because knowledge is multi-dimensional, an important purpose of this thesis is to contribute to a more detailed understanding of how different dimensions of knowledge as well as how different measures of knowledge moderate the satisfaction–loyalty relationship. This kind of information is a contribution from previous literature (Fabrigar et al., 2006; Raju et al., 1995) and may help marketers concentrate their marketing efforts on how different kinds of consumer knowledge are needed to educate consumers to increase their satisfaction and loyalty.

Certainty is suggested as an important moderator affecting the satisfaction–loyalty relationship (Dick & Basu, 1994; Olsen, 1999), but very few empirical studies have tested this issue (one recent exception is Chandrashekar et al., 2007). Certainty and knowledge is also suggested to be highly correlated (Olsen, 1999; Smith et al., 2008; Visser et al., 2006).

Certainty in judgments varies with both the amount and quality of information available, and the level of knowledge a consumer may have of the object or action (Berger, 1992). Thus, the investigation of the moderator effect of certainty in the satisfaction–loyalty relationship should be considered in the presence of knowledge. As mentioned above, subjective knowledge may contain information about consumer certainty (Fabrigar et al., 2006), therefore, this objective emphasizes a combined moderator effect of objective/manipulated

knowledge and perceived certainty. This combination is a contribution to the literature and it can, for example, be important for marketers to know whether they should consolidate consumers' confidence besides educating them with relevant knowledge.

Perceived risk is suggested to be a powerful variable in explaining consumers' behaviour (Mitchell, 1999) including satisfaction and loyalty (Yuksel & Yuksel, 2007). Perceived risk is explored as a moderator in the attitude-behaviour relationship in previous studies (Campbell & Goldstein, 2001; Gurhan-Canli & Batra, 2004).

The third main objective of this thesis is to investigate the effects of perceived risk on satisfaction and loyalty, and especially on the satisfaction–loyalty relationship as a moderator. It is worthy to note that both knowledge and certainty are suggested as important factors to understand perceived risk as well as the ways which consumers manage in risky situations (Dowling & Staelin, 1994; Mitchell et al., 1999; Roselius, 1971; Sheth & Venkatesan, 1968). Therefore, these roles of perceived risk are discussed and tested in an integrated model with the presence of both knowledge and certainty. This thesis contributes to a deeper understanding of the role of perceived risk in the satisfaction–loyalty relationship by providing an insight into the mechanism which consumers use their knowledge to reduce perceived risk. Such knowledge can have implications for improving the performance of products.

1.2. Theoretical framework

In this part, this thesis discusses and defines each concept presented in the conceptual model (Figure 1). The relationships between the concepts are placed in a theoretical framework and hypotheses related to each of the five different papers are addressed. In the papers constituting this thesis, firstly the nature of the satisfaction–loyalty relationship is evaluated under

different conceptual approaches of satisfaction (e.g. transaction-specific versus cumulative) and loyalty (e.g. intentional versus behavioural). Secondly, the satisfaction–loyalty relationship is examined in the relation with the moderator effects of involvement, ambivalence, knowledge, and certainty. Finally, the different roles of perceived risk are integrated in the model. In Figure 1, the bold arrows are used to highlight the relationships involving three main objectives. The relationships, which are out of the main objectives, are not fully discussed and are included in the figure with dotted arrows for completeness.

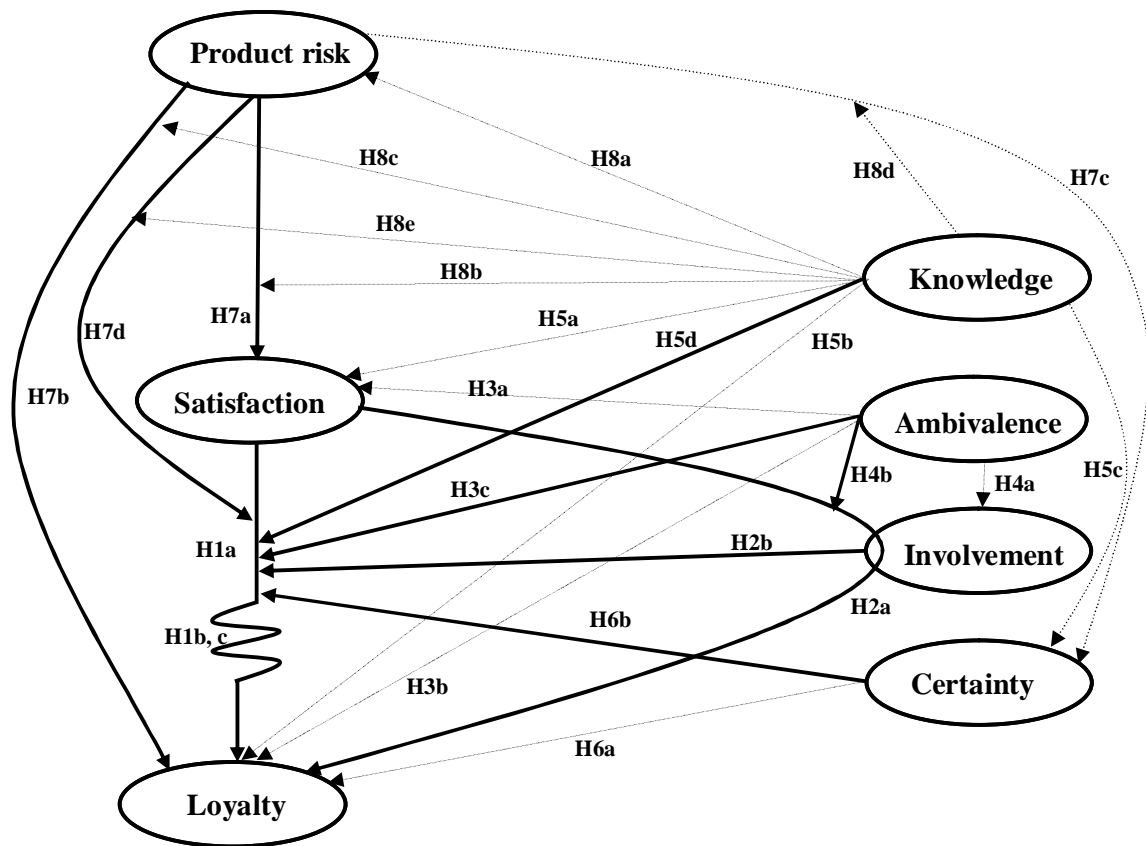


Figure 1. The proposed conceptual model

1.2.1. Satisfaction

Satisfaction has been defined and operationalised in various ways over the last 50 years (Oliver, 1997; Yi, 1990). Satisfaction as a composite construct like attitude has been

developed by Oliver (1997), who proposed it to be “the consumer’s fulfilment response, the degree to which the level of fulfilment is pleasant or unpleasant” (Ibid, p. 28). Multiple interpretations of satisfaction come from differences such as: the type of response (Westbrook & Reilly 1983), the time of evaluation (Söderlund 2003; Yi 1990), the object of evaluation (Olsen 2007), and the psychological process used to explain the response (Oliver 1997). For example, Yi (1990) proposed two different approaches to define satisfaction: an expressed outcome of the consumption experience and a comparative evaluation between prior expectation and the actual performance of the product. Johnson et al. (1996) describe two basic conceptualisations of satisfaction, transaction-specific and cumulative. Transaction-specific satisfaction is an evaluation of a particular product or service experience in a specific transaction, while cumulative satisfaction describes the total consumption experience of a product to date. In this thesis, satisfaction is defined in two different ways. First, satisfaction is defined as a consumer’s cumulative (Johnson et al., 1996) overall evaluation of positive affective responses (Oliver, 1997) of a given product category (Olsen, 2007) over time (Oliver 1997; Olsen 2007) (Paper 1, 2, 3 and 4). Second, satisfaction is defined as positive affective responses based on experience with a product in a specific transaction (Johnson et al., 1996; Oliver, 1997). This latter definition is used in the experiment of Paper 1 and 5.

1.2.2. Loyalty

Loyalty has been defined and measured in many different ways (Jacoby & Chestnut, 1978; Oliver, 1997). Generally, the conceptualisations and operationalisations of loyalty may be divided into three different approaches: behavioural, attitudinal and an integrated composite approach (Jacoby & Chestnut, 1978). However, most empirical studies define or assess loyalty as intentional (Chaudhuri & Holbrook, 2001; Macintosh & Locksin, 1997; Oliver, 1999) or behavioural/action loyalty (Bloemer & Kasper, 1995; Gustafsson et al., 2005; Olsen,

2007; Yi & Jeon, 2003). A few studies use a combination of repurchase behaviour and intentions to assess loyalty as a cumulative construct (Nijssen et al., 2003; Pritchard et al., 1999; Olsen et al., 2005). This study defines loyalty as both intentional, behavioural/action and a combination of those. First, loyalty is defined as (re)purchasing intentions and the probability of buying either a new product given a reference price, or a product category in a time frame (Papers 1 and 5). Second, loyalty is defined as the behavioural frequency of repurchasing a product category over time (Papers 1 and 2). Finally, repurchase loyalty is assessed as a combination of intention and action loyalty covering both behavioural frequency (Jacoby & Chesnut, 1978) and intention of consumption/repurchase (Nijssen et al., 2003; Pritchard et al., 1999) toward a given product category (Olsen, 2007) (Papers 3 and 4).

Most studies of the satisfaction–loyalty relationship are tested in linear form (Homburg & Giering, 2001; Seiders et al., 2005; Olsen, 2007; Olsen et al., 2005; Szymanski & Henard 2001). However, some studies try to compare linear and complex non-linear relationships (Gomez et al., 2004; Mittal et al., 1998; Ngobo, 1999; Streukens & de Ruyter 2004). A wide range of functional forms is suggested to explain the non-linear effect of satisfaction on loyalty (Streukens & de Ruyter 2004). It is most common to use a quadratics, cubic or a combined quadratics and cubic function to describe the non-linear nature on the effect of satisfaction on loyalty as either decreasing (inverted U-shape or S-shape) or increasing return (U-shape or inverted S-shape) (Agustin & Singh 2005; Homburg et al. 2005; Mittal & Kamakura 2001; Söderlund 1998; Streukens & de Ruyter 2004). Thus, this thesis suggests that:

H1: Satisfaction has: (a) a linear effect; (b) a quadratic effect; and (c) a cubic effect on loyalty.

Paper 1 explores the non-linear effect of satisfaction on loyalty in relation to three different conceptual relationships in the context of post-consumption. Specifically, the non-linear effects of cumulative satisfaction on repurchase intention and behaviour, and of transaction-specific satisfaction on repurchase intention were tested across different hierarchies within one product category using different competitive models. This hypothesis was replicated in three different data of Vietnamese fish products consumers.

1.2.3. Involvement

Involvement is controversial due to many different proposals and ideas for conceptualising and measuring this construct (Thompson et al., 1995). Within an attitudinal strength perspective, involvement is defined as an individual's subjective sense of the concern, care, and significance the individual attaches to an attitude (Boninger et al., 1995), or a person's motivational state of mind with regard to an object or activity (Mittal & Lee, 1989), or a mobilisation of behavioural resources for the achievement of relevant goals (Poiesz & de Bont, 1995). In this thesis, involvement is defined as a long-term evaluation of importance, concern and significance towards a process of consuming a product category (Olsen, 2007) (Paper 2).

Involvement appears to possess the main features of a strong attitude that predicts or explains behaviour (Thompson et al., 1995). In this thesis (Paper 2), the intention is to contribute to a more detailed understanding of how the relationship between satisfaction and loyalty is mediated and moderated by involvement. The mediating effect of involvement is established in previous studies (Johnson et al., 2001; Mittal & Lee, 1989; Olsen, 2007) which show that the satisfaction–loyalty relationship is fully moderated by involvement. However, this thesis argues for involvement as a partial mediator in the satisfaction–loyalty relationship.

Previous studies also suggest that involvement plays a role as a moderator in the satisfaction–loyalty relationship (Bloemer & de Ruyter, 1998; 1999; Olsen, 2007; Seiders et al., 2005; Suh & Yi, 2006; Yi & Jeon, 2003). Although empirical evidence is mixed, most studies support the general hypothesis that high-involvement customers display a greater ability to repurchase than low-involvement customers with the same level of satisfaction (Bloemer & de Ruyter, 1998; Bloemer & Kasper, 1995; Richins & Bloch, 1991; Seiders et al., 2005). Therefore, besides a partially mediating effect, this thesis also argues for a positively moderating effect of involvement on the satisfaction–loyalty relationship.

H2: Involvement: (a) plays a role as a mediator for a positive indirect effect of satisfaction on repurchase loyalty; and (b) moderates positively the satisfaction–repurchase loyalty relationship.

This hypothesis was tested in Paper 2 using the context of consuming fish for everyday main meals at home. Involvement, satisfaction and loyalty were measured with reference to fish as a general product category (Olsen, 2007).

1.2.4. Ambivalence

Ambivalence has been defined in various ways, but most of these definitions make reference to the simultaneous existence of positive and negative evaluations of an attitude object (Conner & Sparks, 2002; Olsen et al., 2005; Spark et al., 2001). Social psychologists have addressed different forms of ambivalence, such as cognitive ambivalence (mixed beliefs), affective ambivalence (torn feelings) and cognitive/affective ambivalence (a conflict between beliefs and feelings) (Thompson et al., 1995). This thesis defines ambivalence as an individual's subjective affective evaluations of conflicting feelings and emotions towards consuming a product category (Paper 2).

In this thesis (Papers 1), ambivalence is first tested as an antecedent of both satisfaction and loyalty and as a moderator in the satisfaction–loyalty relationship. This is important because only one study tests these roles of ambivalence in this relationship (Olsen, 2005). More importantly, the effect of ambivalence is considered in the presence of involvement as a mediator and moderator in the satisfaction–loyalty relationship. Previous studies in consumer behaviour indicate that ambivalence may interact with the intention to affect the relationship between attitudes and behaviour (Armitage & Conner, 2000; Conner & Sparks, 2002) or may interact with involvement to affect on the attitude-intention relationship (Costarelli & Colloca, 2007). Furthermore, while ambivalence has been suggested as a negative moderator in the attitude-behaviour or satisfaction–loyalty relationship, very little empirical evidence was found (Jonas et al., 2000; Olsen et al, 2005). Therefore, this thesis suggests that the moderator mechanism of ambivalence on the satisfaction–loyalty relationship may be better understood in the light of its interaction with involvement to influence this relationship.

H3: Ambivalence has: (a) a negative effect on satisfaction; (b) a negative effect on loyalty; and (c) moderates negatively the satisfaction–repurchase relationship.

H4: Ambivalence has: (a) a negative association with involvement; and (b) moderates negatively the indirect effect of satisfaction on loyalty via involvement.

These hypotheses were thus tested simultaneously with hypothesis 2 in Paper 2.

1.2.5. Knowledge

Knowledge has traditionally been regarded as a multi-dimensional construct and mostly categorised using familiarity and expertise (Alba & Hutchison, 1987; Brucks, 1985).

Knowledge is often measured either objectively or subjectively (Brucks, 1985; Cordell, 1997; Park et al., 1994). The effect of knowledge on attitude/satisfaction and behaviour/loyalty may be different depending on its contents and nature (Fabrigar et al., 2006) or the ways in which

it is measured (Cordell, 1997; Park et al., 1994). Thus, this thesis uses three different approaches to define knowledge. First, knowledge is defined as a person's subjective evaluations of their expertise related to the performance of a particular task, such as preparing meals at home (Paper 3). Second, it is defined as objective evaluations of a combination of the familiarity and expertise that the person has about a product category (Alba & Hutchison, 1987; Chiou & Droge, 2006; Klerch & Sweeney, 2007) (Paper 4). Third, knowledge is defined as stimulus information about a product (Fabrigar et al., 2006; Smith et al., 2008) involving the consumption process of a product in a specific transaction (Paper 5).

Previous studies indicate that consumer knowledge can influence consumer attitude, evaluation (Cordell, 1997), behaviour (Rortveit & Olsen, 2007) and loyalty (Chiou & Droge, 2006). In addition, except for Chiou et al. (2002), most previous studies propose that subjective knowledge can moderate negatively the satisfaction–loyalty relationship (Capraro et al., 2003; Cooil et al., 2007; Evanschitzky & Wunderlich, 2006). However, subjective knowledge defined and measured as market expertise in these studies is related to not only evaluated objects but also competitive ones (i.e. products, services or brands) available in the market. Thus, this subjective knowledge is not necessarily a property of attitude/satisfaction strength which is often associated with evaluated particular objects. Extending the theory of attitude strength, this thesis suggests that if satisfaction is formed on the basis of more relevant knowledge about the focal products (e.g. fish), satisfaction evaluations become more certain (Martinez-Poveda et al., 2009; Smith et al., 2008). Thus, the predictive power of satisfaction on loyalty is enhanced (Chandrashekar et al., 2007; Fabrigar et al., 2006). As it is difficult to decompose the effect of subjective knowledge with other constructs which subjective knowledge is highly correlated with (Fabrigar et al., 2006), this thesis measures consumer knowledge about the focal products as a property of satisfaction strength based on

objective evaluations and stimulus information about the products. For different approaches used to define and measure knowledge, generally this thesis suggests that:

H5: Knowledge has: (a) a positive effect on satisfaction; (b) a positive effect on loyalty; (c) a positive effect on certainty; and (d) moderates the satisfaction–loyalty relationship.

The hypothesis was tested in three papers; Papers 3, 4 and 5. While subjective knowledge as expertise was measured in Paper 3, knowledge about the focal products was measured objectively in Paper 4 or manipulated in Paper 5 using the contexts of consuming fish at home.

1.2.6. Certainty

Certainty refers to the amount of confidence a person attaches to an attitude (Visser et al., 2006). Certainty has been described as an evaluative mechanism where consumers assess whether brand beliefs are accurate and warranted (Dick & Basu, 1994). More recently, certainty has been defined as the sense of conviction with which the satisfaction judgment is held (Chandrashekar et al., 2007). This thesis defines certainty as the confidence level of consumers in evaluating their satisfaction with regard to a product or a product category (Paper 4 and 5).

Consumers with high certainty in their evaluations often confirm higher attitude-buying behaviour relationships than the low-certainty consumers (Olsen, 1999 for a theoretical discussions). Chandrashekar et al. (2007) focus on the simultaneous manifestation of uncertainty in the variation surrounding the central tendency of stated judgments. They find that customers, who held higher certain feelings of satisfaction about the product, exhibited a stronger satisfaction–loyalty relationship (Chandrashekar et al., 2007). However, certainty is seen as a dimension or attribute of a judgment, quite apart from its content (Berger, 1992;

Bennette & Harrell, 1975). Thus, this thesis defines and measures certainty as an independent construct with evaluations (i.e. satisfaction) and suggests that:

H6: Certainty has: (a) a positive effect on loyalty; and (b) moderates positively the satisfaction–loyalty relationship.

As mentioned earlier, the moderator effect of certainty should be considered in the presence of knowledge, thus this hypothesis was tested simultaneously with hypothesis 5 in two Papers 4 and 5.

1.2.7. Perceived product risk

Perceived risk is considered to be a multi-dimensional construct entailing multiple types of risk (e.g. financial, performing, physical, psychological, and social) (Jacoby & Kaplan, 1972).

Perceived risk can be evaluated for both pre- and post-purchase involving consumer perceptions of negative consequences and losses associated to consuming a particular product (Grewal et al., 2007). Perceived risk is also considered as an attribute of a product (Dowling, 1986) or an overall construct (Dowling & Staelin, 1994). Perceived risk is considered as a product attribute when consumers evaluate perceived risk of a product associated with the usage situation relative to their purchase goal (Dowling, 1986). Perceived risk is accessed as an overall construct when consumers think of perceived risk in terms of the magnitude of consequences and the probabilities that these consequences may occur if the product is acquired. These two aspects of a purchase situation (i.e. consequences and probabilities) are mapped into the construct of perceived risk (Dowling & Staelin, 1994). The role of the construct is also discussed as a moderator and mediator between attitude and behaviour (Cambell & Goldstein, 2001; Gurhan-Canli & Batra, 2004).

Three different approaches to define perceived risk are used in this thesis. First, it is defined as a negative attribute of a considered product category (Anderson & Anderson, 1991) (Paper

3). Second, perceived risk is defined as a multi-dimensional construct to include the subjective evaluations of unfavourable consequences and losses with association to health, functional, performance, financial, psychological and social aspects of consuming a product category (Dowling & Staelin, 1994; Jacoby & Kaplan, 1972; Yuksel & Yuksel, 2007) (Paper 4). Finally, it is defined as the pre-purchasing expectable evaluations of unfavourable consequences and losses of a consuming a product (Dowling & Staelin, 1994; Grewal et al., 2007) (Paper 5).

Perceived risk is found to reduce satisfaction as well as loyalty (Angulo & Gil, 2007; Grewal et al., 2007; Mitchell et al., 1999; Park et al., 2005; Yuksel & Yuksel, 2007). A few studies (Cambell & Goldstein, 2001; Gurhan-Canli & Batra, 2004) find that perceived risk moderates the attitude-behaviour relationship. Perceived risk often relates to future uncertainty consequences (Dowling and Staelin, 1994) and causes consumers' unstable feelings (Bauer, 1960). Thus, the predictive strength of satisfaction on loyalty may decrease when perceived risk increases. As perceived risk is determined as a very important variable in the research settings of this thesis, it is critical to discuss and test its effects on satisfaction, loyalty and the satisfaction–loyalty relationship. Thus, the main objectives may be enhanced and clarified with the following hypothesis:

H7: Perceived risk has: (a) a negative effect on satisfaction; (b) a negative effect on loyalty; (c) a negative effect on certainty; and (d) moderates negatively the satisfaction–loyalty relationship.

This hypothesis was tested in a combined approach with the role of knowledge and certainty in Papers 3, 4 and 5.

Hypotheses 1 to 7 establish and address three main objectives of this thesis. However, the factors of the research context (e.g. perceived risk) and personal factors (e.g. knowledge) have

always been suggested to interact with each other to affect research phenomena in the literature. Thus, this thesis wants to add hypothesis 8 which demonstrates this issue as a direction for future study. It comes from the fact that the effects of perceived risk on consumer evaluations (e.g. satisfaction) and behaviour/loyalty are often weak or even non-significant (Chen & Li, 2007; Yuksel & Yuksel, 2006), especially for consumers with high knowledge (Chen & Li, 2007; Frewer et al., 1994; Klerch & Sweeney, 2007). Furthermore, it is reasonable to expect that consumers with high knowledge have more effective ways to prevent risks than consumers with low knowledge. Thus, hypothesis 8 is as follows:

H8: Knowledge has: (a) a negative effect on risk; (b) moderates negatively the negative effect of risk on satisfaction; (c) loyalty; and (d) certainty; and (e) reduces the negative moderator effect of risk on the satisfaction–loyalty relationship.

This hypothesis was tested in Papers 3 and 5.

1.3. Methods

The five papers in this thesis investigate consumer satisfaction and loyalty in relation to moderators and attribute evaluations of fish. This thesis uses different research designs, data sources, and analytical procedures to test proposed hypotheses. A summary of the designs, data and procedure is described in the following parts.

1.3.1. Research designs and data sources

Paper 1 investigates the non-linearity between satisfaction and loyalty. The relationships between satisfaction, loyalty, involvement and ambivalence are tested in Paper 2. Papers 3, 4 and 5 focus on examining the moderator role of knowledge, certainty and perceived risk in the satisfaction–loyalty relationship. Therefore, different designs (e.g. surveys, experiment) were

used. The different data was collected from two research projects as a part of the integrated project SRV 2701-NORAD in the cooperation between University of Tromso, Norway and Nhatrang University, Vietnam, funded by the Norwegian Government for the years of 2004-2011. Consumers, who eat fish at least once a week, from the age of 18, are responsible for buying and preparing everyday main meals for their family, answer the questionnaire through face-to-face interviews at their homes or local markets. The data also includes experimental data using students. Table 1 provides information related to the research designs, data sources, respondents and involved papers.

Table 1. Research designs and sampling details for the current research

Subjects/Research type/Selection/Paper	Places /Period	Number of respondents		Response rate (%)	Data collection
		Planned	Performed		
Fish-Survey-Convenience (Papers 2 and 3)	Nhatrang, Dalat, Ho Chi Minh, April, 2007	1000 consumers	922 consumers	92.2	Face-to-face at home
Marine fish-Survey-Convenience (Paper 1 and 4)	Hanoi, March, 2008	400 consumers	387 consumers	96.8	Face-to-face at local markets
Fish-Survey-Convenience (Paper 1)	Khanhhoa province, October, 2009	400 consumers	392 consumers	98.0	Face-to-face at home
New food product-Experiment-Randomly assigned (Paper 1 and 5)	Nhatrang University, November, 2009	120 students	120 students	100.0	At offices

All five papers in this thesis belong to quantitative research. Papers 1 to 4 use field surveys and cross-sectional data, while Paper 5 used a controlled experiment data. The controlled experiment for the last paper takes better care of causal relationships compared to studies using correlation methods (e.g. Chiou & Droge, 2002; Evanschitzky & Wunderlich, 2006; Homburg & Giering, 2001; Walsh et al., 2008) to infer causal relationships between constructs based on previous studies. Thus, a part of this thesis (Paper 5) also fulfils the call

for using experimental designs in the area of satisfaction–loyalty research (Cooil et al., 2007; de Ruyter & Bloemer, 1999; Evanschitzky & Wunderlich, 2006; Olsen, 2007).

A weak point of the design is that survey data was collected conveniently and the generalisation can be limited. However, this limitation was partially overcome by a combination of the surveys and the controllable experiment and by changes in geographical areas (e.g. the cities of Nhatrang, Dalat, HoChiMinh and Hanoi), different contexts (e.g. at home, local markets, laboratory/office) and respondents investigated in Vietnam. In addition, most intended constructs and their relationships are based on previous studies and relevant theories. Thus, the robustness of the results was confirmed. Even though this study focuses one product category (fish), some variations are added through framing it as associations to different kind of fish (e.g. mackerel, marine fish, fish in general). Hopefully, those combinations contribute to strengthening the reliability and validity of the results.

1.3.2. Data analysis

This thesis used different methods to test the hypotheses, but the approach of SEM should be emphasized. SEM has excessive advantages in estimating relationships among latent constructs (e.g. perceived risk, knowledge, ambivalence, involvement, satisfaction, loyalty), in counting for measurement errors, especially when survey data is used as inputs of each specific study (Papers 2, 3 and 4) (Joreskog & Sorbom, 1982). The traditional chi-square fit test is reported. However, because of its sensitiveness to sample size (Browne & Cudeck, 1992), three other indices are also conducted: Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI), and Comparative Fit Index (CFI). The GFI has been found to be sensitive to sample size while CFI is essentially independent of sample size (Anderson & Gerbing, 1988). Acceptable models fit is indicated by either *p*-value of chi square statistics exceeding 0.08, or GFI, CFI values exceeding 0.90 and RMSEA values

below 0.08 (Browne & Cudeck, 1992). The data is analysed using the statistical packages SPSS 15.0-*Statistical Package for the Social Sciences*, (SPSS Inc., 2006) and AMOS 7.0-*Analysis of Moment Structures* (Arbuckle, 2006).

In Paper 3, a multiple-group analysis in SEM was used to assess the effect of moderators (e.g. knowledge) on the relationships among the latent constructs with all direct effects controlled (Baron & Kenny, 1986)

In Papers 2 and 4, advanced techniques in SEM, such as single-indicator estimation method (Ping, 1995, 1996) or the indicator product method (Kenny & Judd, 1984), were used for testing moderators. This thesis also used a more strictly complicated method based on the general path analysis framework for indirect effects (Edwards & Lambert, 2007) justified for latent variables. The single common method factor approach by Podsakoff et al. (2003) was used to check whether a common method bias is present (Paper 2).

Regardless of the excessive advantages, SEM, however, is not suitable for small sample and manipulated variables (Kline, 2005). Paper 1 used the combined data of both surveys and experiment to estimate a range of regression models, thus Multivariate Regression Analysis was used. For Paper 5, a method of comparing correlations between experimental groups was used (Cohen & Cohen, 1983).

1.3.3. Measures and manipulations

In all Papers, except objective knowledge, constructs were measured with two or three reflective items on a seven-point Likert scale or semantic differential scale. The high values of factor loadings in the measurement models confirmed the reliability, the discriminant validity, and the convergent validity of the constructs (Browne & Cudeck, 1992; Fornell & Larcker, 1981). For most measured constructs, the composite reliabilities (CR) exceed the minimum

value of 0.60 and the variances extracted (VE) surpass the recommended threshold of 0.50 (Anderson & Gerbing, 1988). All measures are based on previous studies (e.g. Cho & Lee, 2006; Grewal et al., 2007; Jacoby & Kaplan, 1972; Jonas et al., 2000; Nijssen et al., 2003; ; O’Cass, 2001; Olsen, 2002; Park et al., 1994; Pieniak et al., 2007; Pritchard et al., 1999; Zaichkowsky, 1985), and adapted to a Vietnamese setting (e.g. objective knowledge).

Respondents were asked to indicate the level of their *satisfaction* on a seven-point semantic differential scale with four items in form: “When I eat fish/marine fish for everyday main meals at home, I feel”: (1) Unpleasant/Pleasant, (2) Unsatisfied/Satisfied, (3) Dull/Exciting, and (4) Not liking/Liking. These items are frequently used to assess satisfaction as a global evaluation (Olsen, 2002). The CR of the construct ranges from 0.90-0.96 and the VE range from 0.75-0.90. The individual item loadings (λ) on the construct are all highly significant ($p < 0.001$: t -value > 24) with values ranging from 0.81 to 0.96. The results show the convergent validity and reliability of the construct of satisfaction.

This study uses three items, one for general frequency, one for recent frequencies and one for behavioural expectancies to measure *loyalty* (Nijssen et al., 2003; Pritchard et al., 1999). The general frequency measure of behaviour uses a one-year time frame and a seven-point scale in the form: “How many times-on average-during the last year have you eaten marine fish for an everyday meal in your home?”: 1 = 1-2 times a week, 2 = 3-4 times a week, ... and 7 = much more. Recent frequency is assessed in the form: “Could you please estimate how many times you have eaten fish: __times during the last seven/fourteen days not including today”. Items are used to assess the behavioural expectation in the form: “How many times in the next seven days do you intend/expect/want to buy and eat fish/marine fish for your everyday main meals at home: from 1 to 14 or more times?” The measurement analyses indicated the high

reliability and validity of the construct (CR = 0.86-0.93; VE = 0.67-0.81; λ = 0.72-0.94, $t > 15.0$, $p < 0.000$).

Perceived risk is first assessed as a product attribute by asking the respondents to indicate their evaluation on three measures in the form: “Please indicate your evaluation about how risky or safe when choosing fish for everyday meal”: (1) unsafe/safe (reverted scale); and (2) high risky/ low risky (reverted scale); and (3) containing disease factors/not containing disease factors (reverted scale, Paper 3). *Perceived risk* is then assessed more comprehensively (Paper 4) by asking the respondents to indicate their evaluations on four aspects of perceived risk (performance, financial, health and social) on a seven-point Likert scale, using items adapted from previous studies (Cho & Lee, 2006; Grewal et al., 2007; Jacoby & Kaplan, 1972). The measurement analyses showed the acceptable reliability and validity of the construct (CR = 0.76-0.84; VE = 0.45-0.64; λ = 0.54-0.88, $t > 10.0$, $p < 0.000$).

Objective knowledge about fish in general is measured with nine true/false questions. Five of the statements are true: “To a certain extent, I know that using storing chemicals reduces fish quality”; “Fish is a source of omega-3 fatty acids”; “Pangasius is a fatty fish”; “Saba is a lean fish”; “Some fish contain toxic substances”. Four of the statements are false: “Fish is a source of dietary fibre”; “All bacteria found in fish are harmful”; “Natural fish is better for health than farmed fish”; “Almost all fish contains mercury”. These questions are adapted from previous studies (Park et al., 1994; Pieniak et al., 2007). The “right answer” is given one point and a sum of these points generates the numeric measure of objective knowledge.

Subjective knowledge is evaluated by three statements on the seven-point Likert-type scale ranging from: “-3 = Total disagree” to “+3 = Total agree” in the form: “I can prepare many different dishes from fish”; “Compared to an average person, I know a lot about fish”; “I have a lot of knowledge of how to prepare fish for everyday meals” (Paper 3) (Pieniak et al., 2007).

The measurement analyses indicated the high reliability and validity of the construct (CR = 0.84; VE = 0.63; $\lambda = 0.78-0.81$, $t > 25.0$, $p < 0.000$).

This study develops a multi-item scale to measure the *certainty* construct so that each evaluation on each item of the satisfaction scale in the left column corresponds to one item in the right column in the form: “How confident do you feel with your evaluation of these items: (1) Totally not confident/(7) Totally confident” (Spreng & Page, 2001; Yi & La, 2004) (Paper 4 and 5). The reliability and validity of the construct is relatively high (CR = 0.95; VE = 0.86; $\lambda = 0.92-0.93$, $t > 23.0$, $p < 0.000$).

A seven-point Likert scale measures *subjective ambivalence*, and the respondents answered by marking the appropriate position on the scale regarding three statements framed as: “I have mixed feelings about eating fish”; “I feel conflict toward the issue of eating fish”; and “I have mixed emotions about eating fish” (Jonas et al., 2000). The measurement of the construct has proven to be high reliability and validity (CR = 0.91; VE = 0.77; $\lambda = 0.79-0.92$, $t > 28.0$, $p < 0.000$) (Paper 2).

Three items on a seven-point semantic scale measure *involvement*, in the form: “For me, choosing and eating fish is: (1) Unimportant/Important; (2) Of no concern/ Of great concern; and (3) Not significant/Significant (Zaichkowsky, 1985; O’Cass, 2001). The analyses showed the high reliability and validity of the construct (CR = 0.90; VE = 0.75; $\lambda = 0.79-0.90$, $t > 28.0$, $p < 0.000$) (Paper 2).

Manipulation of knowledge and product risk

In Paper 5, an experiment was a 2 (knowledge: low versus high) \times 2 (perceived risk: low versus high) between-subjects factorial design. The participants were assigned randomly to four groups corresponding to four scenarios under manipulated conditions of knowledge and

risk. Participants were instructed to imagine themselves in the situation described in the scenario.

Knowledge. Each participant in the high-knowledge groups was provided with 15 pieces of information about the quality standards, materials, ingredients, recipes, uses, and product benefits on the label of the product as well as the common ways to choose, store, and use general canned products. The participants in the low-knowledge groups were only provided with five pieces of information on the product (see Fabrigar et al., 2006).

Product risks. In the high-risk subgroups, the participants were told that this product was a new product at the stage of market testing and the quality and safety had not been certificated by the Food Safety Department. In addition, the participants were also told that the Food Safety Department reports that a relatively high ratio of cases of risks occurring for consumers using general canned products come from products that are not clear in origin and are produced without a quality and safety certificate. By contrast, in the low-risk subgroups, the participants were told that this product was a new product, which had passed the stage of market testing and received a certificate of product quality and safety from the Food Safety Department. A similar procedure to manipulate perceived risk was used in previous studies (Campbell & Goldstein, 2001; Gurhan-Canli & Batra, 2004).

Corresponding questionnaires to four cells of the experiment were developed (low versus high knowledge \times low versus high risk). Specifically, each participant was asked to read information about the product and information about how to choose, store, and use it, then answered some specific questions about the knowledge that the participant perceived. Next, each participant read a brief description containing the risk manipulation of the product, and was asked to evaluate their perceptions of risks regarding the product. The participants were then served the same meal with a canned sardine and a piece of bread. After having the meal,

the participants were asked to indicate their level of satisfaction feelings (i.e. transaction-specific satisfaction) and their certainty for each corresponding item of satisfaction based on their sensory experience of the product. Finally, they were asked to rate their (re)purchase intention (i.e. intentional loyalty) and answer demographic questions. The items were identical for all versions of the questionnaire and almost similar to the measures mentioned above.

Transaction-specific satisfaction is measured by four items: “Overall, after eating this product, it makes me feel: (1) Dissatisfied/Satisfied; (2) Unpleasant/Pleasant; (3) Dull/Exciting; (4) Bored/Enjoyable (Olsen, 2002).

To measure *intentional loyalty*, four items on a seven-point semantic scale are used with the following question in the experiment: “How likely is it that you will buy, expect or want to choose to eat this product again if it is available in the market during next month with a given price unit at 7.500 VND?”: (1) I intent to buy/eat this product; (2) I want to buy/eat this product; (3) I expect to buy/eat this product”; and (4) “The probability for me to buy/eat this product” rated on a scale from (1) “very unlikely” to (7) “very likely” (Streukens & de Ruyter 2004).

In addition, the similar measures as mentioned above of certainty, subjective knowledge and perceived risk are included in the questionnaires corresponding to the four scenarios.

The reliability and validity of the measures of these five constructs were evaluated by a confirmatory factor analysis. The results support the appropriate psychological characteristics of the measures of the intended constructs (Anderson and Gerbing, 1988). Cronbach’s alpha ranges from 0.77-0.93. All the CR exceeds the minimum value of 0.60. All the VE surpass the recommended threshold of 0.50. The individual item loadings on the constructs are all highly significant ($p < 0.001$; t -value > 5) with values ranging from 0.63 to 0.97.

PART II. MAIN FINDINGS AND CONTRIBUTIONS

Main findings and contributions are in turn discussed on each of the three research objectives. The discussions as a main contribution of the first objective focus on the non-linearity in different conceptual relationships between satisfaction and loyalty in relation with hypothesis 1. The contributions of the second objective are through testing and discussing the combined moderator effects of attitude strength's properties (e.g. involvement, ambivalence, certainty and knowledge) in the satisfaction–loyalty relationship in relation to the hypotheses from 2 to 6. The contributions of the last objective come from the research settings in Vietnam where food/fish risks are common. Different roles of perceived risk especially in interacting with knowledge affecting the satisfaction–loyalty relationship involving hypotheses 7 and 8 will be discussed. Generally, this thesis contributes with new thoughts on the moderators in the satisfaction–loyalty relationship within the food/fish contexts in general and particularly in Vietnam.

2.1. Main findings and contribution

2.1.1. Different forms of the satisfaction–loyalty relationship

The *first objective* is to shed light on the non-linearities of the relationship between satisfaction and loyalty in hypothesis 1. This objective is based on Paper 1 which tests the non-linear effect of satisfaction on loyalty under the different conceptual relationships across different hierarchies within one product category using different functional forms. The findings show a throughout view about the non-linearity and dynamics in the relationship between satisfaction and loyalty including the context of testing a new product. Our approach also helps to detect the specification of the satisfaction–loyalty relationship

Hypothesis 1 stated that satisfaction has a linear positive effect, a quadratic effect and a cubic effect on loyalty. The empirical evidence generally support this hypothesis. The findings indicate that cumulative satisfaction has a cubic effect with a decreasing return of on intentional loyalty in an S-shape form, but has a quadratic effect with an increasing return on behavioural loyalty in a U-shape form. In particular, this thesis has first provided empirical evidence to support the non-linear effect with an increasing return in a U-shape form of transaction-specific satisfaction on intentional loyalty.

Generally, the results are consistent with previous findings supporting a non-linear effect of satisfaction on loyalty (Agustin & Singh 2005; Anderson & Mittal 2000; Bowman & Narayandas 2004; Homburg et al. 2005; Mittal & Kamakura 2001; van Doorn & Verhoef 2008), but show an inconclusive picture about the satisfaction–loyalty relationship. This means that the non-linear nature can vary depending on the contexts, situations, types of products or services, hierarchical levels of products, used functional forms, conceptual frameworks and research designs (Agustin & Singh 2005; Homburg et al. 2005; Mittal & Kamakura 2001; Söderlund, 1998; Streukens, & de Ruyter, 2004; van Doorn & Verhoef 2008). Thus, these findings provide an insight about the formation of consumer loyalty from satisfaction.

2.1.2. The moderator effect of strength-related properties

The *second objective* of this thesis is to investigate the moderator role of involvement, ambivalence, knowledge and certainty in the satisfaction–loyalty relationship. In particular, these moderators effect are tested in a combined approach. This objective addresses several important gaps in previous studies. First, this is the first to investigate the moderator role of ambivalence in the interaction with involvement affecting the satisfaction–loyalty relationship. Second, it is also the first to test the combined moderator effects of objective

knowledge and perceived certainty in the satisfaction–loyalty relationship. Finally, several mixed findings in previous studies involving the effects of ambivalence, involvement and knowledge are also discussed and tested. Five general hypotheses (H2-H6), based on more specific hypotheses from Papers 2, 3, 4 and 5 are presented in relation to this objective.

Hypothesis 2 suggested that involvement both mediated and moderated the satisfaction–loyalty relationship. This hypothesis is supported by the data (Paper 2). In addition to a positive effect of satisfaction on loyalty, the findings indicate the significantly positive associations between satisfaction and involvement and between involvement and loyalty. It means that involvement plays a role as a partial mediator between satisfaction and loyalty rather than a complete mediator as in previous studies (Johnson et al., 2001; Olsen, 2007). Involvement is also found to moderate positively the satisfaction–loyalty relationship (Paper 2). The findings, therefore, help to extend the traditional theories of attitude strength (e.g. Lavine et al., 2000; Visser et al., 2006) to confirm involvement as an important attribute of satisfaction strength (Chandrashekar et al., 2007).

In hypothesis 3, it was suggested that ambivalence had a negative effect on both satisfaction and loyalty, as well as a negative moderator effect on the satisfaction–loyalty relationship. The results did not support this hypothesis. Although a significantly negative association between ambivalence and satisfaction was found, the direct and moderator effect of ambivalence on loyalty and the satisfaction–loyalty relationship were not significant.

However, hypothesis 4 explored the interaction between ambivalence and involvement by suggesting that ambivalence influenced negatively on involvement and moderated indirectly negatively the satisfaction–loyalty relationship via involvement. This hypothesis was supported (Paper 2). The findings provided not only a significantly negative effect of ambivalence on involvement, but also supported a significantly moderator effect of

ambivalence on the satisfaction–involvement relationship. Thus, ambivalence moderates the satisfaction–loyalty relationship in a different mechanism relative to previous studies (e.g. Olsen et al., 2005), indirectly rather than directly. It means that the indirect effect of satisfaction on loyalty through involvement is weaker when ambivalence increases. Therefore ambivalence and involvement, as well as the combined role of these constructs, are important to understanding and explaining the relationship between satisfaction and loyalty.

Hypothesis 5 focused on the effects of consumer knowledge on satisfaction, loyalty and the satisfaction–loyalty relationship. It was suggested that knowledge had a positive effect on both satisfaction and loyalty and to moderate the satisfaction–loyalty relationship. This thesis explored the moderator role of knowledge under different measures (i.e. subjective versus objective) (e.g. Cordell, 1997; Park & Moon, 2003) and different research designs (i.e. survey versus experiment) (Capraro et al., 2003; Cooil el al., 2007; Evanschitzky & Wunderlich, 2006; Fabrigar et al., 2006) as well as in terms of its contents and nature (i.e. market expertise versus product knowledge) (Chiou et al., 2002; Chiou & Droge, 2006; Cooil el et., 2007; Fabrigar et al., 2006).

Hypothesis 5a proposed a positive effect of knowledge on satisfaction, but it was not supported. The findings (Paper 3) indicated a significant positive effect of subjective knowledge on satisfaction. However, manipulated knowledge had no significant effect on satisfaction (Paper 5). The reason may be that in cross-sectional surveys (Paper 3) subjective knowledge has been measured, thus it can contain the information of other variables with which knowledge is correlated (Fabrigar et al., 2006). In addition, repeated experiences with the products may make correlations between satisfaction and knowledge increase as a function of repeated action over time (Alba & Hutchinson, 1987; Park et al., 1994).

Next, hypothesis 5b suggested a positive effect of knowledge on loyalty and was supported by empirical evidences. The findings from Paper 3 showed that the association between subjective knowledge and loyalty was not significant. However, the results from both Papers 4 and 5 confirm that higher objective and manipulated knowledge leads to a higher level of consumer loyalty towards the products. This means that relevant knowledge plays a role as a drive for action.

Furthermore, hypothesis 5c still proposed that knowledge had a positive effect on certainty. This hypothesis was supported (Paper 5). The certainty of the respondents in the high-knowledge condition was found to be significantly higher than one of the respondents in the low-knowledge condition. These findings are consistent with previous studies (Martinez-Poveda et al., 2009; Smith et al., 2008). Thus, the investigation of certainty as a moderator in the satisfaction–loyalty relationship (e.g. Chandrashekar et al. (2007) (see next parts) should be considered in the presence of knowledge.

Importantly, hypothesis 5d suggested that knowledge could moderate the satisfaction–loyalty relationship and was strongly supported by the data. The findings throughout Papers 3, 4, and 5 illustrated the complex moderator mechanism of knowledge in the satisfaction–loyalty relationship. Previous studies suggested that consumer knowledge could moderate positively or negatively the relationship between attitude/satisfaction and behaviour/loyalty depending on the nature and contents of the measures of knowledge (Chiou et al., 2002; Fabrigar et al., 2006; Capraro et al., 2003). Subjective knowledge as expertise (Paper 3) was found to moderate negatively the satisfaction–loyalty relationship. However, when knowledge is measured or stimulated focusing more on evaluative products (Fabrigar et al., 2006), both objective and manipulated knowledge (Papers 4 and 5) were found to moderate positively the satisfaction–loyalty relationship (Chiou et al., 2002; Fabrigar et al., 2006).

Therefore, the difference in the content and nature of knowledge leads to different effects of knowledge on the satisfaction–loyalty relationship. It is always suggested in the literature (e.g. Olsen, 1999; Lavine et al., 2000; Fabrigar et al., 2006; Visser et al., 2006) that an attitude based on high knowledge could be a strong attitude which implies that the predictive power of the attitude on its consequences should be enhanced. However, satisfaction based on high market expertise versus product relevant knowledge as found seems to be a weak versus strong attitude. Therefore, these findings contribute to the literature by providing a comprehensive view about the moderator role of knowledge in the satisfaction–loyalty relationship as well as clearly illustrating the role of relevant knowledge as a property of satisfaction strength.

Finally, hypothesis 6 proposed that certainty would have a positive effect on loyalty and moderate positively on the satisfaction–loyalty relationship. This hypothesis was almost supported. Certainty was found to have a significantly direct effect on repurchase loyalty (Paper 4), but its direct effect on purchase intention was not significant (Paper 5). Importantly, certainty moderated positively the satisfaction–loyalty relationship (Papers 4 and 5). The positive moderator role of certainty in the satisfaction–loyalty relationship found supported the previous suggestions (Dick & Basu, 1994; Olsen, 1999) and is consistent with Chandrashekar et al.'s (2007) findings. However, by measuring certainty as an independent construct from satisfaction judgments, this study provides additional empirical evidence supporting the moderator role of certainty in the satisfaction–loyalty relationship.

2.1.3. The role of product risks in the satisfaction–loyalty relationship

The *third objective* of this thesis is to test the different effects of perceived risk on satisfaction, loyalty, certainty and on the satisfaction–loyalty relationship. In particular, these roles of perceived risk are discussed in the interaction with knowledge. Two hypotheses (H7

and H8) were proposed in relation with this objective and were tested on the basis of the findings from three Papers (Papers 3, 4 and 5). The findings in these Papers are multiple and contribute to the general understanding of the role of perceived risk and knowledge in the formation of satisfaction, certainty, loyalty as well as the movement from satisfaction to loyalty.

Hypotheses 7a and 7b suggested a negative effect of perceived risk on satisfaction and loyalty. Perceived risk as a product attribute (Dowling, 1986) was found to effect negatively on satisfaction (H7a, Paper 3). Thus, the role of perceived risk as a product attribute is similar to other cognitive constructs as antecedents of satisfaction, such as perceived quality and price (Evanschitzky & Wunderlich, 2006; Olsen, 2002). When perceived risk is defined as an overall construct, it has a strong negative effect on loyalty (H7b, Paper 4) (Grewal et al., 2007; Yuksel & Yuksel 2006). However, manipulated risk in the controlled experiment (Paper 5) was found to affect only on loyalty but not on satisfaction. This contradicts with some previous findings (Chen & Li, 2007; Yuksel & Yuksel, 2007). Risk can influence intention without influencing satisfaction, probably because risk is more closely associated with expectations about future consequences than an ultimate transaction-specific evaluation of a new product. Therefore, the findings are generally supported hypothesis 7b, but not hypothesis 7a.

Next, hypothesis 7c proposed a negative effect of perceived risk on certainty and was supported (Paper 5). The certainty of the respondents in the low-risk condition was significantly higher than one of the respondents in the high-risk condition (Bauer, 1960; Bennett & Harrell, 1974; Dowling & Staelin, 1994). Thus, along with knowledge as mentioned in hypothesis 5c, perceived risk should be included as a source of certainty as a moderator in the satisfaction–loyalty relationship (e.g. Chandrashekar et al. (2007)).

In addition, hypothesis 7d suggested that perceived risk moderated negatively the satisfaction–loyalty relationship. The findings supported this hypothesis by indicating that perceived risk (Paper 4) and especially manipulated risk (Paper 5) had a negative moderator effect on the relationship between satisfaction and loyalty. The consideration of the moderator effect of perceived/manipulated risk provides a deeper insight into the mechanism of the formation of loyalty from satisfaction in high risk and uncertain situations. Satisfaction may fail to predict loyalty under these situations.

After all, hypothesis 8 was built to reflect the interaction between knowledge and risk to influence on satisfaction, loyalty, certainty and the satisfaction–loyalty relationship. Specifically, it was suggested that knowledge had a negative effect on risk in hypothesis 8a, and moderated negatively the effect of risk on satisfaction in hypothesis 8b. The findings showed a negative effect of subjective knowledge on perceived risk (Paper 3) to support hypothesis 8a. Hypotheses 8b was also supported by a negative moderator effect of subjective knowledge, which reduced the negative effect of perceived risk on satisfaction (Paper 3).

Furthermore, in hypotheses 8c and 8d, knowledge was suggested to moderate negatively the effect of risk on loyalty (H8c) and certainty (H8d). However, this thesis did not find empirical evidence supporting these two hypotheses. The interaction between manipulated knowledge and manipulated risk had no significant effect on loyalty and certainty (Paper 5). This means that manipulated knowledge did not affect the direct effects of manipulated risk on loyalty and certainty.

Finally, hypothesis 8e proposed that knowledge reduced the negative moderator effect of risk on the satisfaction–loyalty relationship. Findings from Paper 5 indicated that the negative moderator effect of manipulated risk on the satisfaction–loyalty relationship was weaker in the conditions of higher manipulated knowledge than lower manipulated knowledge (Paper

5). This means that manipulated knowledge moderates negatively the moderator effect of manipulated risk on the satisfaction–loyalty relationship, or hypothesis 8e was supported.

Only a few studies included both perceived risk and knowledge in their studies (Chen & Li, 2007; Damen & Steenbekkers, 2007; Frewer et al., 1994). This thesis is the first to empirically examine the combined role of perceived risk and knowledge within a satisfaction–loyalty framework. This thesis found that higher knowledge not only leads to a lower perceived risk but also moderated the negative effect of perceived risk on satisfaction, and especially on the satisfaction–loyalty relationship. The findings are consistent with previous suggestions that increasing consumer knowledge is an appropriate strategy to reduce perceived risk (Damen & Steenbekkers, 2007; McCurdy et al., 2006; Redmond & Griffin, 2005). These findings also support the suggestions of previous studies that consumer knowledge plays a role as a moderator in the cognition-affection-behaviour (Capraro et al., 2003; Evanschitzky & Wunderlich, 2006).

2.1.4. The combined role of moderators

Finally, this thesis also has other important contributions to the satisfaction and loyalty literature out of the proposed hypotheses. First, although all the above findings were concluded on the basis of each separate hypothesis, the tested effects including direct, indirect, and moderator effects were evaluated simultaneously. Therefore, the effect of each construct generates an additional explanation in relation with the effects of other constructs. This combined approach, thus, provides a more comprehensive view than most previous studies testing moderators one-by-one (e.g. Anderson & Srinivasan, 2003; Evanschitzky & Wunderlich, 2006; Homburg & Giering, 2001) or only including only one moderator in their studies (e.g. Capraro et al., 2003; Olsen et al., 2005). Second, this thesis emphasizes using a wide range of methods in estimating proposed models, especially in applying the recent

developments in SEM (e.g. Ping, 1995; Edwards & Lambert, 2007). Different research designs (e.g. survey and experiment) were used to make our findings more robust. Finally, while most previous studies were conducted in the contexts of developed countries, this thesis investigated consumers in a developing country (Vietnam) where the wild characteristics of the domestic markets and consumers with low incomes dominate. The problems of morality and opportunism such as poor or low quality of products strongly reduce consumers' trust, increase potential risks and damage consumers' beliefs. These unique features of the research contexts enhanced the importance of the studies in the thesis.

2.2. Managerial implications

Based on the findings, this thesis has several managerial implications.

First, marketers and managers should be aware of possible non-linearities when predicting loyalty based on consumer satisfaction (Agustin & Singh, 2005; van Doorn & Verhoef, 2008). However, our study does not emphasize the use of a specific form but an effort to detect a specification with a superior predictive power in a range of competitive models. With the complex nature of the satisfaction–loyalty relationship, an increased unit of satisfaction at different levels of satisfaction can generate an unequal increase in loyalty. Thus, marketers and managers should understand how the changes in different levels of satisfaction influence consumer loyalty, and then financial performance. For example, the non-linear effect of satisfaction on loyalty may occur because high satisfaction is believed to meet not only the most basic needs (e.g. food), but also higher-level needs (e.g. safety) (Maslow, 1970). A decreasing return effect of cumulative satisfaction on intentional loyalty may occur because Vietnamese consumers always considered fish as the most important food for their meals. An increasing return effect of cumulative satisfaction on behavioural loyalty may reveal that the highly frequent consumption of fish may also meet consumers' higher-level needs, such as the

needs for safety or bodily fitness. Thus, a marketing strategy that communicates fish as a food product which can fulfil different levels of need hierarchies may help to increase consumer loyalty towards fish in this market.

Second, as previous studies call for an insight to explain and understand the complex mechanism of satisfaction (Chandrashekar et al., 2007; Olsen, 2007; Olsen et al., 2005), this study suggests that managers and marketers should not only understand the levels of satisfaction, but also understand its strength. Importantly, the pairs of satisfaction strength's properties, such as involvement and ambivalence, certainty and knowledge, are proven to effect loyalty and the satisfaction–loyalty relationship in a combined and interactive way. Therefore, marketing strategies should exploit these mechanisms to increase the efficiency and effectiveness of marketing efforts. For example, it would be better for managers and marketers to focus their efforts on increasing consumers' knowledge by providing them with relevant information and knowledge about the product. This strategy is expected to push faster the movement from satisfaction to loyalty by not only increasing the relative amount of knowledge about the products in consumers' memory relative to competitors, but also consolidating their certainty. Similarly, an effort to increase consumer involvement, such as promoting fish as a healthy and tasty meal, may fail for ambivalent consumers. Thus, it should be combined with an effort to reject the sources of ambivalence, such as negative feelings or the inconvenience of fish (Olsen, 2004; Olsen et al., 2005).

Finally, although satisfaction–based management has been confirmed as a vital strategy for companies, it is not sufficient to generate loyalty (Anderson & Sullivan, 1993; Homburg & Giering, 2001), especially with the presence of high perceived risk. Thus, management attention should focus on risk-reducing strategies for customers. Quality control combined

with giving consumers a quality guarantee when buying a fish product, are two possible strategies (Angulo & Gil, 2007).

2.3. Limitations and suggestions for future research

The findings and implications of each study and the integrated conceptual model presented in this thesis must be viewed in light of its limitations. This thesis will discuss these limitations and suggest directions for future research.

First, involvement is a controversial concept consisting of many aspects and many approaches exist to define it (O’Cass, 2001; Thompson et al., 1995). Thus, the inclusion of different aspects of involvement may generate a more complete view about the phenomenon.

Second, ambivalence was measured in many ways (Olsen et al., 2005), but this thesis approached the definition of subjective ambivalence and assessed subjective ambivalence mostly on affective conflicting aspects. Therefore, future research can assess objective ambivalence and/or include cognitive conflicting aspects as well as cognitive-affective conflicts in subjective ambivalence (Thompson et al., 1995).

Third, different facets of knowledge exist in the literature (Alba & Hutchison, 1987) and the different dimensions of knowledge have been shown to have unequal effects on different outcome variables (Cordell, 1997; Park et al., 1994). Future studies would benefit by including other types of knowledge, such as declarative, procedural, schematic knowledge or knowledge about product class and so on.

Next, different forms of risk exists in the literature (McCathy & Henson, 2005 for a review), however the studies only tested the relationships between overall risk and its consequences. Thus the different effects of the facets of product risk are not easy to distinguish. Future

studies could manipulate and test separately each form of risk such as functional, social, financial, performance, psychological risk.

In addition, in an attempt to discuss and test a parsimonious model, this thesis did not include other possible antecedent variables such as perceived quality, social norms, moral obligation, perceived behavioural control and other barriers (e.g. Conner & Armitage, 1998; Olsen, 2007). The study has not considered other moderators of the satisfaction–loyalty relationship such as demographic characteristics (Cooil et al., 2007; Homburg & Giering, 2001; Mittal & Kamakura, 2001), relational characteristics (Seiders et al., 2005) or situational characteristics (Evanschitzky & Wunderlich, 2006). Several variables, such as trust, delight, negative experiences, may explain the non-linear effect of satisfaction on loyalty (Agustin & Singh, 2005; Homburg et al., 2005; van Dorn & Verhoef 2008). Thus, the investigation of these variables in relation to the non-linear effect of satisfaction on loyalty may provide a fruitful avenue for future research (van Dorn & Verhoef 2008).

Finally, the findings in Papers 1, 2, 3, and 4 were based on cross-sectional data. The samples were collected conveniently. Thus, the causality of the proposed relationships and the generalisation in the estimated models was problematic. In Paper 5, this thesis used an experimental design to overcome the problem of causality. However the empirical results from experiments are difficult to generalise. The studies of this thesis only cover the products within one product category (fish). Thus, future research should expand to other products or services as well as test hypotheses using a more representative sample of a population. Furthermore, most of the findings presented in this thesis were based on self-reported measures of, for example, behavioural loyalty. Objective measures may give better results (Seiders et al., 2005). The development of consumer loyalty is dynamic (Oliver, 1997), thus

longitudinal designs are expected to provide a deeper insight (Cooil et al., 2007; Johnson et al., 2006).

2.4. Conclusion

As a summary, this thesis tests the non-linear relationships between satisfaction and loyalty and tests the combined role of involvement and ambivalence, and knowledge and certainty, in relation with a context factor, perceived risk, affecting the satisfaction–loyalty relationship. The findings addressed the three main objectives. First, satisfaction is an important predictor of consumer loyalty, but the relationship between these two constructs is complex, linear or non-linear. Second, the properties of satisfaction strength (e.g. involvement, ambivalence, knowledge, and certainty) moderate the satisfaction–loyalty relationship in one way or another. While certainty and involvement directly moderate the satisfaction–loyalty relationship positively, ambivalence indirectly moderates this relationship negatively via the mediator role of involvement. Subjective knowledge negatively moderates the satisfaction–loyalty relationship, but both objective knowledge and manipulated knowledge play a role as positive moderators in this relationship. Finally, perceived risk influences negatively on both satisfaction and loyalty, but manipulated risk only influences on loyalty but not satisfaction. Importantly, both perceived risk and manipulated risk are found to moderate negatively the satisfaction–loyalty relationship.

This thesis contributes to a deeper understanding of the role of satisfaction strength's properties and perceived risk as drivers and barriers in moving from consumer satisfaction to loyalty. The findings are consistent with most previous research within the field. However, this thesis has important additional contributions theoretically and practically by providing both a theoretical mechanism and empirical evidence supporting the moderator effects of ambivalence, objective knowledge, perceived certainty and product risks on the satisfaction–

loyalty relationship. Another notable point is that the combined effects or the interactions between the pairs of moderators, such as involvement and ambivalence, knowledge and certainty, knowledge and perceived risk, generate a unique feature of this thesis. Therefore, management implications should be considered in relation with this approach.

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