Dimensionality of Responses to Customer Satisfaction with Low-Involvement Low-Risk Frequent Purchases: the Example of Grocery Retailing

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Abstract

This working paper explores affective, cognitive, conative and action consequences of customer satisfaction focusing on the dimensionality of responses to satisfaction and their interrelations. For the purpose of the present working paper, affective, cognitive, conative and action consequences of customer satisfaction are operationalised as loyalty dimensions following the recommendations by Oliver (1997). Yet, before applying the analysis to the interrelations of satisfaction and loyalty, the research presented in this working paper tests this commonly recognized factor structure of loyalty and its applicability to retail settings. As a result of the test, a different factor structure emerges that suits the research context better than the commonly recognized loyalty dimensions proposed by Oliver (1997).

The working paper looks further into the type of responses to customer satisfaction, revealing affective/emotional rather than cognitive/rational nature of satisfaction consistently with findings by Cadotte, Woodruff and Jenkins (1987), Fornell and Wernerfelt (1987), Halstead, Hartman, and Schmidt (1994), Mano and Oliver (1993), Neal (1999), Oliver (1981, 1989, 1992, 1993, 1997), Spreng, MacKenzie and Olshavsky (1996), Westbrook (1987), Westbrook and Oliver (1991), Westbrook and Reilly (1983) and many other researchers. The research findings presented in this working paper suggest that neither cognitive nor action measures describe satisfaction judgments adequately and additional affective or conative measures are needed for that purpose. The research also finds that “relative” mixed cognitive-affective or cognitive-conative measures might also be suited to describe satisfaction judgments as compared to the purely cognitive measures.

The affective nature of satisfaction itself is also hypothesized to be the main reason behind the satisfaction influence mainly on affective and to the lesser extent also to cognitive-affective and cognitive-conative dimensions of loyalty, which is revealed in the course of the present research.

The empirical part of the working paper is based on a pan-national ad hoc survey of grocery retail customers (999 respondents) carried out in Estonia regarding their grocery and convenience goods retail purchases.

JEL classification number: M 31

Keywords: customer satisfaction, customer loyalty, consumer behaviour, consumer psychology, retailing
1. Introduction

This working paper explores affective, cognitive, conative and action consequences of customer satisfaction according to the *Framework for Customer Loyalty* presented by Dick and Basu (1994), *Relationship Profitability Model* offered by Storbacka, Strandvik and Grönroos (1994), *Service Profit Chain* proposed by Heskett *et al.* (1994), *Extended Service Profit Chain* presented by Soone (2004a, b) and *Intentions Formation Chain* proposed by Soone (2006), where satisfaction is modelled as a composite reflective second-order construct with formative first order constructs.

For the purposes of the present research, customer loyalty representing the consequent component of customer satisfaction according to Dick and Basu (1994), Heskett *et al.* (1994) and Soone (2004a, b, 2006) is modelled as the summation of affective, cognitive, conative and action responses to customer satisfaction respective to affective (Cadotte, Woodruff and Jenkins 1987; Halstead, Hartman, and Schmidt 1994; Mano and Oliver 1993; Oliver 1981, 1992, 1993, 1997; Spreng, MacKenzie and Olshavsky 1996; Westbrook and Oliver 1991; Westbrook and Reilly 1983), cognitive (Bolton and Drew 1991; Howard and Sheth 1969; Tse and Wilton 1988) and conative (Halstead, Hartman and Schmidt 1994; Westbrook and Oliver 1991) dimensions of satisfaction, as well as attitudinal and behavioural dimensions of loyalty (Dekimpe *et al.* 1997; Dick and Basu 1994; Howard and Pritchard 1997; Griffin 1995; Jacoby and Chestnut 1978; Soone 2004a, b), affective, cognitive, conative and action loyalty according to Oliver (1997, as cited in Oliver 1999), and affective and calculative commitment (Gustafsson, Johnson and Roos 2005; Verhoef 2003).

The present working paper seeks to analyze the nature, interrelations and classification of responses to satisfaction, verify the applicability of this classification to retail settings and discuss alternative classifications of responses to satisfaction that might facilitate explanation of consumer decision-making mechanisms, i.e. to propose a new, customer-centric structure of responses to customer satisfaction. Therefore, and for the reason of the limited volume of the working paper, the main emphasis will be put on the consequences of customer satisfaction rather than on the satisfaction construct itself, dimensionality, conceptualization and nature of which can be discussed additionally in a separate research in greater detail and need not be duplicated here.

2. Responses to Customer Satisfaction

Based on the literature review, responses to customer satisfaction can be classified into attitudinal (e.g. affective and cognitive) as well as behavioural (e.g. behavioural intentions and actual behaviour) categories, which might or might not be sequenced, yet are mostly presented as interwoven. Several definitions of customer satisfaction even imply the attitude or attitude-like nature of customer satisfaction. Classics of satisfaction research, Mano and Oliver (1993) state that satisfaction “… is best characterized as an attitude-like postconsumption evaluative judgment … varying along the hedonic … continuum” (p. 454). Yet, researchers make a clear distinction between two constructs – customer satisfaction and customer attitude, and it is accepted that customer satisfaction eventually becomes an input to a less dynamic attitude (Bolton and Drew 1991a). Oliver (1981) states that “[a]ttitude is the consumer’s relatively enduring affective orientation for a product, store or process (e.g. customer service), while satisfaction is the emotional reaction following a disconfirmation experience which acts on the base attitude level and is consumption-specific” (p. 42). Bitner, Booms and Tetreault (1990) support this position.
by proposing that satisfaction judgments are evaluations of individual service transactions, while individual’s general attitude towards the service firm is the expression of perceived service quality. Along the line of above-presented thinking, but omitting the quality dimension, Bolton and Drew (1991a) state that “[a]ttitude is the customer’s global evaluation of a product/service offering” (p. 2). Similar claims are presented also by Holbrook and Corfman (1985), and Olshavsky (1985).

Thus, although satisfaction is attitude-like in some respects, the concept of satisfaction is distinguished from attitude, which represents a more generalized evaluation (Oliver 1981; Westbrook and Oliver 1991) and satisfaction has been established as a key causal agent responsible for experience-based attitude change (Oliver 1980; Westbrook and Oliver 1991).

Yet, though supporting the hypothesis that customer satisfaction and attitude are interwoven, Bolton and Drew (1988, 1989) found that the distinction between customer satisfaction and customer attitude is rather blurred for frequently or continuously provided services (as the grocery retailing in the context of the present working paper is), particularly when changes in the service offering are subtle. The results of a later survey performed by Bolton and Drew (1991a) support this assumption that the attitude formation process is affected by the service change, backing the hypothesis that a favourable disconfirmation experience has a positive effect on attitude.


However, research findings by Hellier et al. (2003), Manrai (1995), Sheppard et al. (1998) and Storbacka et al. (1994) suggest that customer satisfaction does not influence behavioural intentions directly but rather indirectly through intervening variables. Hellier et al. (2003), Jones and Sasser (1995), Liljander and Strandvik (1995), Mittal and Lassar (1998), Sharma and Patterson (2000), Srinivasan (1996) and Storbacka et al. (1994) also suggest that while customer satisfaction is a major factor, there can be other variables which can impact upon behavioural intentions of consumers, as it was also proposed earlier. Contrary to the aforementioned findings, Bloemer and de Ruyter (1998), Bloemer and Kasper (1995), and Sharma and Patterson (2000) see these intervening variables only as moderators of the relationship between satisfaction and behavioural intentions. Dabholkar, Shepherd and Thorpe (2000) support this view by claiming that customer satisfaction strongly and directly mediates the effect of service quality on behavioural intentions.

Despite of the variety of opinions regarding consequences of customer satisfaction, most of the authors acknowledge the diverse nature of responses to
satisfaction, although proposing a variety of different terms to describe the response constructs.

3. Customer Loyalty as the Convenient Multi-faceted Summary Construct for Accommodating the Responses to Customer Satisfaction

Despite the essential, conceptual and outcome/product variety of responses to customer satisfaction, a vast proportion of these can be meaningfully accommodated under the customer loyalty construct without an extra stretch. According to Caruana (2002), “… loyalty, with its final effect on repurchasing by customers, is perhaps one of the most important constructs in services marketing” (p. 811). However, basing this claim on the previous literature, it is probably also the most extensive and stretched as well as debated concept in the domain of consumer behaviour.

“Real customer loyalty is a behaviour,” states Neal (2000, p. 21). Oliver (1999) echoes this claim by arguing that generally, indeed, “… loyalty has been and continues to be defined in some circles as repeat purchasing frequency or relative volume of same-brand purchasing” (p. 34). Brandt (2000) disagrees with Neal’s (2000) statement and attempts to call it ridiculous measuring loyalty with a three-component approach as many researchers have done – namely overall customer satisfaction, recommend intent, and repurchase intent. He takes “a position that is strongly opposed to the one offered” (p. 7) by Neal (2000) and states that the latter “seems to discount more than a quarter of a century’s worth of literature indicating that there is an important attitudinal or psychological component of customer loyalty” (ibid., p. 7). Contrary to Brandt’s (2000) views, Neal (2000) claims that all these constructs measure satisfaction rather than loyalty, thus recognizing only the behavioural component of customer loyalty and leaving out completely the attitudinal component of it.

Bloemer, de Ruyter and Wetzels (1999) explain this obsession with behavioural measure with the fact that most of the research originated from the field of packaged consumer goods (Jacoby and Chestnut 1978), adding that also in a services context, loyalty is frequently defined as observed behaviour (Liljander and Strandvik 1995), as “[u]ltimately it is actual behaviour that drives a service organisation’s performance” (p. 1085). Referring to Day (1969), they admit that behavioural measures have been criticized for a lack of a conceptual basis and for having a narrow, i.e. outcome-focused view of what is in fact a dynamic process; they also disclose according to recommendations by Storbacka et al. (1994) and Liljander and Strandvik (1995) that repeat purchasing behaviour may actually not even be based on a preferential disposition but on various bonds that act as switching barriers to consumers. Bloomer, de Ruyter and Wetzels (1999) conclude that “[d]uring the past decades, therefore, customer loyalty has also been approached as an attitudinal construct” (p 1085), which “… is reflected, for instance, in the willingness to recommend a service provider to other consumers” (p. 1085). They add that in addition to the behavioural and attitudinal (i.e. affective) dimensions of customer loyalty, it has been argued that there is also a cognitive side to loyalty, as recommended by Lee and Zeiss (1980). Thus, operationalisation of service loyalty would have to include behavioural, attitudinal and cognitive aspects in the composite loyalty index (Bloemer, de Ruyter and Wetzels 1999). All of these three elements are also present in the behavioural intentions battery that was developed by Zeithaml et al. (1996) with regard to services loyalty (ibid.).
Bloemer, de Ruyter and Wetzels (1999) also add that customer loyalty is frequently operationalised as top-of-mind recall in making a purchase decision (Newman and Werbel 1973; Bellenger et al. 1976; Dwyer et al. 1987); the product or service being a customer’s first choice among alternatives (Ostrowski et al. 1993) or price tolerance (Anderson 1996; Fornell et al. 1996).

Contrary to Neal’s (2000) statements and in line with recommendations by Biong (1993), Bloemer, de Ruyter and Wetzels (1999), Brandt (2000), Hallowell (1996), Lee and Zeiss (1980), Liljander and Strandvik (1995), Selnes (1993), Storbacka et al. (1994), and many other authors, Oliver (1999) summarizes well the status of behavioural dimension of loyalty by quoting Jacoby and Chestnut (1978) as follows:

*Jacoby and Chestnut (1978) have explored the psychological meaning of loyalty in an effort to distinguish it from behavioral (i.e., repeat purchase) definitions. Their analysis concludes that consistent purchasing as an indicator of loyalty could be invalid because of happenstance buying or a preference for convenience and that inconsistent purchasing could mask loyalty if consumers were multibrand loyal. Because of these possibilities, the authors conclude that it would be unwise to infer loyalty or disloyalty solely from repetitive purchase patterns without further analysis.* (Oliver 1999, p. 35)

Similarly to the recommendations by Bloemer, de Ruyter and Wetzels (1999) about the loyalty dimensionality, Oliver (1999) claims that “[t]he further analysis needed to detect true … loyalty requires researchers to assess consumer beliefs, affect, and intention within the traditional consumer attitude structure” (p. 35), i.e. cognitive, affective and conative phases/dimensions of loyalty, more specifically, all these three decision-making phases or dimensions must point to a focal preference if true loyalty exists. He uses Oliver’s (1997) framework which follows the cognition-affect-conation pattern but differs in that he argues that consumers can become “loyal” at each attitudinal phase relating to different elements of the attitude development structure, i.e., first in a cognitive sense, then affectively, later in a conative sense, and finally in a behavioural manner (*op. cit.*). Yet, he regrets that “[u]nfortunately, relatively little elaboration of this attitude-based framework has emerged” (*ibid.*, p. 35).

In the first loyalty phase proposed by Oliver (1997, as cited in Oliver 1999) – cognitive or belief-based loyalty – the attribute information available to the consumer indicates that one brand is preferable to its alternatives and directs loyalty toward the brand. In this phase, cognition can be based on prior or vicarious knowledge or on recent experience-based information. Yet, Oliver (1999) comments that this consumer state resulting from the first phase is of a shallow nature, explaining his statement as follows: “If the transaction is routine, so that satisfaction is not processed …, the depth of loyalty is no deeper than mere performance. If satisfaction is processed, it becomes part of the consumer’s experience and begins to take on affective overtones” (p. 35) thus allowing to move to the next phase.

In the second – affective – phase of loyalty development, a liking or attitude toward the brand is developed on the basis of cumulatively satisfying usage occasions and commitment at this phase is encoded in the consumer’s mind as both, cognition and affect while the loyalty exhibited is directed at the degree of affect or liking. For comparison, Grisaffe (2001) defines affective or attitudinal loyalty similarly as psychological attachment to the brand/product/service. As Oliver (1999) comments: “This reflects the pleasure dimension of the satisfaction definition – pleasurable
fulfillment … Whereas cognition is directly subject to counterargumentation, affect is
not as easily dislodged” (p. 35). He adds, however, that similar to cognitive phase,
affective loyalty also remains subject to switching, and illustrates this statement with the
data which show that large percentages of brand defectors claim to have been
previously satisfied with their brand.

The conative phase of loyalty development is influenced by repeated episodes
of positive affect and contains the deeply held commitment to buy. However, as Oliver
(1999) comments, “… this commitment is to the intention to rebuy the brand and is
more akin to motivation. In effect, the consumer desires to repurchase, but similar to
any “good intention,” this desire may be an anticipated but unrealized action” (p. 35)
and therefore it is desirable to guide the consumer to the next phase.

In the action loyalty phase, the motivated intention in the previous loyalty state
is transformed into readiness to act, and according to the study of the mechanism by
which intentions are converted to actions, it is referred to as “action control” (Kuhl and
Beckmann 1985) and is accompanied by an additional desire to overcome obstacles that
might prevent the act (Oliver 1999). If this phase is repeated, action inertia develops,
facilitating further repurchase (ibid.).

In the present working paper, customer loyalty to the grocery store will be
operationalised according to the recommendations by Anderson (1996), Biong (1993),
Bloemer, de Ruyter and Wetzels (1999), Boulding et al. (1993); Brandt (2000), Fornell
et al. (1996), Gustafsson, Johnson and Roos (2005), Hallowell (1996), Jacoby and
(1993), Parasuraman, Berry and Zeithaml (1991a), Parasuraman, Zeithaml and Berry
(1988), Reichheld and Sasser (1990), Storbacka et al. (1994), Verhoef (2003) and other
researchers along the affective, cognitive, conative and action loyalty dimensions
proposed by Oliver (1997, as cited in Oliver 1999), as follows:

- **cognitive loyalty**: first choice (i.e. the grocery store being the first shopping
  location to choose) (Aydin and Özer 2005), calculative commitment (Gustafsson, Johnson and Roos 2005), price tolerance (i.e. price differential
  related switching behaviour) (Fornell 1992; Zeithaml, Berry and Parasuraman
  1996);
- **affective loyalty**: referrals (Aydin and Özer 2005), Boulding et al. 1993;
  Parasuraman, Berry and Zeithaml 1991a; Parasuraman, Zeithaml and Berry
  1988; Reichheld and Sasser 1990; Selnes 1993; Zeithaml, Berry and
  Parasuraman 1996) and affective commitment (Gustafsson, Johnson and Roos
  2005; Verhoef 2003);
- **conative loyalty**: propensity to switch (Aydin and Özer 2005, Heskett et al.
  1997, Pritchard and Silvestro 2005);
- **action loyalty**: share-of-customer (i.e. share-of-wallet).

Oliver (1997) “… argues that consumers can become “loyal” at each attitudinal
phase relating to different elements of the attitude development structure” (Oliver 1999, p.
35). He theorizes that consumers become loyal in a cognitive sense first, then later in an
affective sense, still later in a conative manner, and finally in a behavioural manner, described
as “action inertia” (ibid.).
4. Research Model

The research model examined in this section is constructed for the purpose of empirically investigating the research questions raised in this study. To delineate customer satisfaction, customer loyalty and customer attitude constructs, the affective commitment component of affective loyalty is modelled as a separate third-order attitude construct within the loyalty second-order construct separate from satisfaction dimensions to test the hypotheses whether affection can be best explained when regarded as a standalone factor, as recommended by Oliver (1981), Verhoef (2003) and several other researchers; as a component of customer satisfaction, as suggested by Gustafsson, Johnson and Roos (2005); or component of customer loyalty, as advocated by Biong (1993), Bloemer, de Ruyter and Wetzels (1999), Brandt (2000), Hallowell (1996), Lee and Zeiss (1980), Liljander and Strandvik (1995), Oliver (1999), Selnes (1993), Storbacka et al. (1994), and many other authors.

Fornell (1992) states that: “[t]here is no consensus on how to measure it [customer satisfaction]” (p. 11) and adds that Hausknecht (1990) has identified over 30 different measures that have been used in previous satisfaction research. Lin (2003) suggests that a deeper understanding of the interactions between satisfaction and its related factors still has a long way to go in enabling a more effective measurement in the customer satisfaction field.

For the reason of absence of unanimity in satisfaction measurement and also in measurement of its consequences, the research model used here is constructed following the modelling efforts of Dick and Basu (1994), Heskett et al. (1994), Soone (2004a, b, 2006), Storbacka, Strandvik and Grönroos (1994) and Zeithaml, Berry and Parasuraman (1996). The main variables/constructs included in the model can be divided into three main groups:

1. customer satisfaction as the focal variable;
2. consequences of customer satisfaction, i.e. four types of loyalty including calculative and affective commitments;
3. other factors independent of satisfaction and loyalty variables, i.e. opportunity to choose between alternative shopping locations.

As most of the researched constructs are not directly observable and this results from the nature of satisfaction judgments and their consequences rather than from the measurement techniques, the data collection will be carried out by inquiring the respondents about their judgments; it will be presumed that responses received from respondents reflect adequately their satisfaction judgments and their consequences, and no further verification is necessary. The error that can result from this kind of inquiry could express itself through weaker construct intercorrelations and thus lower the probability of high correlations rather than increase it, resulting in a purer model as well as higher statistical conclusion and external validities. Hence, this does not pose a problem for the present research.

According to recommendations by Burke, MacKenzie and Podsakoff (2003), the research model is constructed as a composite latent variable model and is therefore formative in nature, for which reason the internal consistency is not implied. The model uses the research findings by Binner (1990), Bloemer, de Ruyter and Wetzels (1999), Dick and Basu (1994), Fornell (1992), Giese and Cote (2000), Gustafsson, Johnson and Roos (2005), Heskett et al. (1994), Soone (2004a, b; 2006), Storbacka, Strandvik and Grönroos (1994) and other authors in constructing the factor structure, relationships and
hypotheses of causal directions of influence between the constructs. Additionally, results of the studies on national satisfaction indices and recommendations by Aydin and Özer (2005), Fornell et al. (1996), Hackl et al. (2000), Johnson et al. (2001) on these have been taken into account in factor structure, relationships and causality modelling. The recommendations from literature and previous research findings were adjusted to the research context, purpose and generally accepted or logical to assume presumptions in retailing. Following the aforementioned principles, the model consists of the reflective third-order satisfaction factor causally influencing the formative second-order loyalty construct composed of reflective first-order factors, and is presented on Figure 1.

**Figure 1. Composite Latent Variable Model of Customer Satisfaction and Its Consequences**

Hereinafter the abbreviations of the factor names presented in the model on Figure 1 will be used instead of full names for clarity purpose. Regarding the affective
and calculative commitment measures, the AC1, AC2, AC3, AC4 and AC5 captions will be used to refer to variables Q17a, Q17b, Q17c, Q17d and Q17g interchangeably, where appropriate, with the same regard to CC1, CC2 and Q17e with Q17f. While captions beginning with Q indicate the order number of questions in the questionnaire, AC and CC refer to inclusion of variable into a specific construct (ACM or CCM) thus simplifying the analysis. Therefore, where appropriate, the AC and CC versions of captions will be used.

As conative loyalty factor is constituted of only one sub-factor, namely negative propensity to switch, and this sub-factor, in turn, is constituted of only one variable, the face validity is assumed between those respective constructs. The same applies to share-of-customer measure and its respective second-order factor affective loyalty. However, all these four factors are modelled separately for the two main reasons: first, to demonstrate the composition and interrelation of factors found in theory, and second, to emphasize the factor levels of the model by attaching different labels at different level of generalization to variables. These differences will be omitted in the course of data analysis, where appropriate.

In models proposed by Aydin and Özer (2005), Dick and Basu (1994), Heskett et al. (1994), Soone (2004a, b), Storbacka, Strandvik and Grönroos (1994) and Zeithaml, Berry and Parasuraman (1996), loyalty is modelled as the consequence of satisfaction judgments and is further divided into four different dimensions according to Oliver (1999) with affective commitment, calculative commitment and behavioural intentions measure incorporated into loyalty, yet measured independently from it. Thus, the present research will also seek to answer the research questions whether commitment measures can be incorporated into loyalty construct and whether behavioural intentions constitute the essential part of loyalty. Another hypothesis regarding calculative commitment is modelling it as part of value component antecedent to satisfaction judgments.

Yet, value is an important component omitted from the satisfaction-loyalty model, which is, however, often used to explain the loyalty behaviour. Neal (1999) states that “[f]or most customers, loyalty isn’t an attitude: value drives loyalty, not satisfaction” (p. 19) and “[s]atisfaction is a necessary but not sufficient component of loyalty” (p. 19). Heskett et al. (1994) take one step back and claim that value drives customer satisfaction rather than has a direct influence on loyalty. Lin (2003) supports this claim and suggests that “…high customer delivered value … is expected to satisfy customer needs and wants by customers“ (p. 204), thus referring to the causal link from value to satisfaction rather than loyalty. Patterson and Spreng (1997) state that “… value … is completely mediated through satisfaction in influencing repeat purchase behaviour” (p. 429).

Following the recommendations of Aydin and Özer (2005), Heskett et al. (1994), Liljander and Strandvik (1995), Patterson and Spreng (1997), Spreng et al. (1993), and Storbacka, Strandvik and Grönroos (1994), value is viewed in the present working paper as a mediator between service quality and customer satisfaction, and thus an indirect antecedent of loyalty decisions. According to the present research model, value mediates the impact of perceived quality on satisfaction judgments and thus precedes customer satisfaction constituting input of it, where customers are either satisfied or dissatisfied with the value delivered by the service provider, among all other antecedents of satisfaction. The value component is also incorporated in the calculative commitment measures, which are reflective in nature and thus the direction of causality is from commitment to formative cognitive loyalty measure. Based on the above, for the
reason that the value component is counted in directly in both, reflective second-order as well as formative first-order constructs, and following the non-redundancy principle, the value factor is not modelled as a separate construct in the research model presented above. The omission of the value factor is supported also by Johnson et al. (2001), who observed on the basis of their study of four national satisfaction indices the relationship between customer expectations and perceived value being unclear as the measures of customer expectations are related to quality, not value. Johnson et al. (2001) also claim that the perceived quality construct already contains the price perception factor similarly to value (v. Bolton and Drew 1991b; Buzzell and Gale 1987; Lin 2003; Monroe 1979, 1990; Monroe and Krishnan 1985; Patterson and Spreng 1997; Sawyer and Dickson 1984; Sweeney 1994) and thus measurement of both, perceived value and perceived quality causes tautology. Several other national studies (e.g. Fornell et al. 1996; Hackl et al. 2000) also suggest that the link from expectations to value is not significant (Johnson et al. 2001). Aydin and Özer (2005) add that “… there is … no satisfactory account of the path from perceived quality to perceived value in the models” (p. 429). Johnson et al. (2001) conclude by stating that the links from perceived quality to perceived value, and from perceived value to loyalty are problematic, and should be removed from the model.

The image component in the model is inherent from the European Customer Satisfaction Index (ECSI; v. Johnson et al. 2001) and Turkish Customer Satisfaction Index (TCSI; v. Aydin and Özer 2005), where it is treated as a direct causal influencer of loyalty. The causal links from satisfaction through image as a mediator to loyalty are adopted from TCSI as the most recent development in the domain of customer satisfaction indices.

The factor representing opportunities to choose between different shopping locations is included in the model for the reason that it may substantially influence the action loyalty (according to Oliver 1997, 1999) in form of inertia (v. Griffin 1995) or spurious (v. Dick and Basu 1994; Howard and Pritchard 1997; Zeithaml, Berry and Parasuraman 1996) loyalty even in absence of cognitive and affective forms of loyalty described by Oliver (1999), as customers remain with the store because they see no alternatives.

In a similar way with opportunity to choose, membership of the loyalty program is factored in the hypothesis that it is both influencing satisfaction rather than being result of it, as well as creating a binding effect and switching barrier against defection of customers. However, it is not expected to have a significant effect on loyalty behaviour according to the research findings by Soone (2004c). Research indicates that the top three influencers of grocery retail customers’ behaviour in Estonia are location, product range and price level followed by service and product quality far behind, with loyalty programs even not showing in the top 10 of the factors.

As the present study aims at discovering the interrelations of consumer decision making triggers and consequences rather than uncovering comparative strengths of separate shopping locations, thus classifying under consumer psychology rather than competitive strategy discipline, only the factors reflecting the state of customers will be included in the analysis (e.g. first choice, commitment, propensity to switch, etc.), and no distinct factors related to the characteristics of particular shopping location (e.g. image of the store, range of goods, etc.) will be included separately, assuming their indirect inclusion already in the formerly mentioned factors reflecting the reactions of consumers. Therefore, although included in the model, image, opportunity to choose and membership of loyalty program are not factored in the
analysis as separate variables due to the fact that image and loyalty program membership should already be included in affective and cognitive as well as conative loyalty factors and need not be counted in twice, while opportunity to choose will be used to filter the cases, if necessary. Omission of choice factor is also suggested by the Cognitive Dissonance Theory, which states that in case of discrepancy between attitudes and behaviour, e.g. opportunities to behave, it is most likely that the attitude will change to accommodate the behaviour. Thus, in case of limited choice, the respondents should adjust their attitudes accordingly, which allows for analysing interrelations between the psychological factors in interest as well as using the choice factor as a filter variable to analyze the consumer psychology.

5. Data Collection and Sampling

The data collection was carried out in homes of respondents in the form of face-to-face interviews based on a standard structured questionnaire. The interviews were conducted in Estonian and Russian by 83 professional interviewers who have received special training for conducting such kind of interviews. Interviewers were recruited through a professional market research agency from among their staff members regularly carrying out data collection.

Questionnaire. Regarding the questionnaire, customer satisfaction was inquired together with its consequences and other related factors. As suggested by Fornell (1992), “[m]easuring customer satisfaction in the context of other interrelated variables … leads not only to better reliability and validity (Fornell and Yi 1992) but also to improved ability to translate customer satisfaction changes into repurchase behavior” (p. 12). This recommendation was also taken into account in the questionnaire, as according to Hellier et al. (2003), Anderson, Fornell and Mazvancheryl (2004), Fornell (1992), Blalock (1981), Fornell (1982, 1989, 1992), Fornell and Yi (1992), Giese and Cote (2000), Marsh and Yeung (1999), Veloutsou et al. (2005), variables take on the meaning depending on the context in which they are applied (i.e. chameleon effect).

Sample. Data collection was carried out in respondents’ homes, predominantly after the working hours. The general set of the sample consists of the permanent residents of the Republic of Estonia aged 15–74 (1,047,818 residents according to the Statistical Office of Estonia as of 01 January 2005). The sample size constituted 999 respondents, which is sufficient to claim the survey representative of the opinion of the permanent residents of the Republic of Estonia.

Sampling procedure and data collection. To find respondents, a sample compiled in a 2-stage random selection was used. In the first stage, 100 interview spots were selected to guarantee the representation of all counties and larger cities in accordance with their actual proportions in the Estonian population. Also the actual proportions of the urban and rural population were maintained, for which purpose we used the territorial sampling model based on the Statistical Office of Estonia databases as of 01 January 2005. For finding the respondent’s address, interviewers used the starting-address method, according to which an interviewer received a randomly selected address where she/he has to conduct the first interview and then moves further according to the fixed step to insure the random inclusion of interview locations in the sample.

In the second stage, the interviewer selected respondents following a “young man rule” implying that the youngest, but at least of 15 years old male person at home
was interviewed as the first priority. If no men were at home, the youngest female person of 15 or more years was interviewed. This way the respondent group that usually is most difficult to find at home was given an extended chance to enter the sample. As a result, the sample became more balanced and representative of both genders as well as different age cohorts. Upon completion of the data collection the cases were weighted to the full compliance with the sampling model.

6. Research Findings

Data tests and factor structure. Before analyzing the data for factor structure, statistical significance tests were carried out to determine the internal consistency of the data. All tests returned the significance value of $\alpha=0.000$ (2-tailed test).

To analyze the factor structure of the proposed model, the variables attached to each factor, i.e. survey questions, were factor analyzed using the Principal Component Analysis as the extraction method and Varimax with Kaiser Normalization for rotation. For greater accuracy, the cases were excluded list wise and Eigenvalues were set at 1 as the extraction criteria.

The initial factor analysis returned two factors explaining 59.704% of the total variance. If the explanatory power of the factor model is “edgy” (cf. Niglas 2002), then the communalities showed lower than appropriate extraction values (0.295 for PSW and 0.360 for SOC) according to recommendations of Niglas (2002). However, the factor loadings suggest a clear convergence of affective loyalty sub-factors (REF and ACM) and their variables (REF and AC1-AC5) into one group, yet grouped together with calculative commitment measure CC1, choice factor FCH and price sensitivity PSW. The result suggests CC1 variable, constituting the core of the second factor, grouping together with SOC and to some extent also with AC5, indicating the strong economic bias of action loyalty, i.e. price elasticity or value sensitivity.

Factor analysis was repeated with the same conditions restricting the sample only to respondents having a rather wide (6 out of 7) or very wide (7/7=there is a variety of options to choose from) choice of shopping locations. As a result, 600 cases were filtered out and 399 remained, measured by number of rows in SPSS working data file and returning t-test at $\alpha=0.000$ (2-tailed test) level. The detailed composition of this subsample [hereinafter referred to as OPT(6;7)] is presented in Table 0.

However, the factor analysis with the extraction rule of Eigenvalues greater than 1 did not return any meaningful results, distributing the factor loadings quite evenly across both factors of 2-factor solution, suggesting a slight affective predomination in the first factor (ACM, CCM), and cognitive (FCH, PSW), conative (SW) and action (SOC) emphasis in the second one, although with some affective (REF) undertones. However, due to the limited explanatory power of the model (52.667%), quite low communalities of some factors (0.193 for SOC and 0.305 for PSW) as well as contradictory results of analyses based on full and sub-sample OPT(6,7), it is not possible to make even a slight statement about the division of

| Table 1. Descriptive Statistics for OPT(6;7) |
|---|---|
| Factor | N |
| REF | 399 |
| AC1 | 398 |
| AC2 | 397 |
| AC3 | 397 |
| AC4 | 397 |
| AC5 | 397 |
| CC1 | 397 |
| CC2 | 397 |
| FCH | 399 |
| PSW | 397 |
| SW | 399 |
| SOC | 398 |

Source: Original calculations by author.
variables into factors, although the initial factor loadings suggest the emergence of two main factor groups. However, it is clearly evident from the analysis that with the increase of opportunities to choose (OPT), location (CC1) loses its importance and the share-of-customer (SOC) becomes more dependent on FCH, PSW and SW, although to a lesser extent, presuming multi-store loyalty. Yet, the analysis will further be conducted using the full sample in the attempt to develop a single model of responses to customer satisfaction.

To enhance the number of factors as well as improve the communalities and determine the factor membership in greater detail, the number of factors was gradually increased. With a 3-factor solution, SOC and CC1 demonstrated a clear distinction from the remaining group (REF, AC1-AC5, CC2, FCH, PSW and SW), separating into different factors. With the 4-factor solution, PSW separated from the main group into a distinct factor and a rather interesting solution was generated with 5 factors, further separating also the CC2 variable. The 5-factor solution is presented in Table 0. The data presented in the table indicates clearly the grouping of ACM variables AC1-AC5 and their influence on REF, FCH and SW; however, it also suggests a bit weaker influence on the latter factors as well as stated loyalty AC5 of the factor CC2 or price-related judgments. In this way, the factor model explains 79.955% of the total variance of all factors. By increasing the number of factors to 5, the model exhibited remarkably higher communalities than in case of the 2-factor solution, with all factors being at or above 0.596 level.

The most interesting solution, however, in the context of the present working paper, for the author of it, was delivered by further enhancing the model with 1 additional factor into a 6-factor solution, thus separating SW and FCH more clearly from the affective group of AC1-AC5 and suggesting that REF is connected more strongly to the former rather than latter factor group. The 6-factor solution explained 84.956% of the total variance and all variables were extracted with communalities at 0.735 or higher. The factor loadings of the 6-factor solution are presented in the following Table 0.

The results suggest variables CC1, PSW and SOC being rather separate, thus supporting the model for SOC, yet presenting variables CC1 and PSW as rather distinct independent factors relatively free from influence of other variables. ACM factors still

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF</td>
<td>0.776</td>
<td>0.302</td>
<td>-0.088</td>
<td>0.051</td>
<td>0.045</td>
</tr>
<tr>
<td>AC1</td>
<td>0.804</td>
<td>0.249</td>
<td>0.061</td>
<td>0.199</td>
<td>0.069</td>
</tr>
<tr>
<td>AC2</td>
<td>0.864</td>
<td>0.078</td>
<td>0.102</td>
<td>0.234</td>
<td>-0.018</td>
</tr>
<tr>
<td>AC3</td>
<td>0.874</td>
<td>0.046</td>
<td>0.215</td>
<td>0.095</td>
<td>0.044</td>
</tr>
<tr>
<td>AC4</td>
<td>0.865</td>
<td>0.262</td>
<td>0.124</td>
<td>0.113</td>
<td>0.057</td>
</tr>
<tr>
<td>AC5</td>
<td>0.599</td>
<td>0.430</td>
<td>0.275</td>
<td>0.207</td>
<td>0.072</td>
</tr>
<tr>
<td>CC1</td>
<td>0.930</td>
<td>0.097</td>
<td>0.107</td>
<td>0.930</td>
<td>-0.014</td>
</tr>
<tr>
<td>CC2</td>
<td>0.274</td>
<td>0.854</td>
<td>0.194</td>
<td>0.123</td>
<td>-0.039</td>
</tr>
<tr>
<td>FCH</td>
<td>0.634</td>
<td>0.472</td>
<td>-0.160</td>
<td>0.038</td>
<td>0.132</td>
</tr>
<tr>
<td>PSW</td>
<td>0.265</td>
<td>0.144</td>
<td>-0.013</td>
<td>0.942</td>
<td>0.042</td>
</tr>
<tr>
<td>SW</td>
<td>0.589</td>
<td>0.434</td>
<td>-0.088</td>
<td>0.152</td>
<td>0.172</td>
</tr>
<tr>
<td>SOC</td>
<td>0.089</td>
<td>0.020</td>
<td>0.080</td>
<td>0.037</td>
<td>0.982</td>
</tr>
</tbody>
</table>


a Rotation converged in 6 iterations.

*Source: Original calculations by the author.*
demonstrate a relatively clear and distinct grouping with strong influence of REF and some weaker impact of FCH. But the most interesting findings are factors 2 and 3, the former incorporating most strongly the variables REF, FCH and SW with the weak influence of AC1, AC2 and AC4, and the latter factor accommodating CC2 with a strong influence of AC5.

The second factor consisting of REF, FCH and SW as the main variables and AC1, AC2 and AC4 as the secondary variables, is remarkable for its explanation of consumers’ judgments according to the Cognitive Dissonance Theory developed by Festinger (1957). This theory postulates that individuals seek consistency among their cognitions (i.e. beliefs and opinions) and when the inconsistency (i.e. dissonance) between attitudes or behaviours occurs, they behave towards eliminating this dissonance. Thus, once a consumer has chosen a particular store to be his/her first choice shopping location (FCH), then according to Cognitive Dissonance Theory, s/he also has to be consistent in his/her judgments about patronizing this store (reversed SW) as well as reference behaviour (REF), recommending this store to others under ceteris paribus conditions. As such, the second factor of REF, FCH and SW is an important manifestation of the validity of foundations of Cognitive Dissonance Theory in regard to consumer behaviour.

Inclusion of variables AC1, AC2 and AC4 into factor 2 supports the aforementioned findings regarding the Cognitive Dissonance Theory as AC1 is an indication of emotions toward the store, AC2 reflects the perceived mix of emotional relationship quality, delivered value through care and mutual attitudes, and AC4 demonstrates the mix of affect with cognition (rather than conation, as it is an expression of willingness rather than intention), all being strongly inter-related with FCH and SW directly, and with REF through the Cognitive Dissonance Theory. Thus, Cognitive Dissonance Theory strongly supports the emergence of the second factor based on REF, FCH and SW as the main variables and AC1, AC2 and AC4 as the secondary influencers. This second factor can be called the Dissonance Set after the Cognitive Dissonance Theory, which offers a good

Table 3. Rotated Component Matrix(a) with 6-factor Solution

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF</td>
<td>0.568</td>
<td>0.629</td>
<td>0.127</td>
<td>0.064</td>
<td>-0.010</td>
<td>-0.004</td>
</tr>
<tr>
<td>AC1</td>
<td>0.711</td>
<td>0.411</td>
<td>0.210</td>
<td>0.185</td>
<td>0.034</td>
<td>0.065</td>
</tr>
<tr>
<td>AC2</td>
<td>0.822</td>
<td>0.303</td>
<td>0.090</td>
<td>0.214</td>
<td>0.046</td>
<td>-0.010</td>
</tr>
<tr>
<td>AC3</td>
<td>0.880</td>
<td>0.211</td>
<td>0.114</td>
<td>0.063</td>
<td>0.116</td>
<td>0.071</td>
</tr>
<tr>
<td>AC4</td>
<td>0.798</td>
<td>0.373</td>
<td>0.261</td>
<td>0.089</td>
<td>0.061</td>
<td>0.066</td>
</tr>
<tr>
<td>AC5</td>
<td>0.620</td>
<td>0.167</td>
<td>0.526</td>
<td>0.167</td>
<td>0.138</td>
<td>0.115</td>
</tr>
<tr>
<td>CC1</td>
<td>0.117</td>
<td>0.027</td>
<td>0.099</td>
<td>0.000</td>
<td>0.983</td>
<td>0.056</td>
</tr>
<tr>
<td>CC2</td>
<td>0.234</td>
<td>0.254</td>
<td>0.890</td>
<td>0.091</td>
<td>0.089</td>
<td>-0.008</td>
</tr>
<tr>
<td>FCH</td>
<td>0.365</td>
<td>0.735</td>
<td>0.228</td>
<td>0.062</td>
<td>-0.035</td>
<td>0.065</td>
</tr>
<tr>
<td>PSW</td>
<td>0.230</td>
<td>0.174</td>
<td>0.116</td>
<td>0.942</td>
<td>-0.001</td>
<td>0.032</td>
</tr>
<tr>
<td>SW</td>
<td>0.290</td>
<td>0.787</td>
<td>0.138</td>
<td>0.192</td>
<td>0.096</td>
<td>0.082</td>
</tr>
<tr>
<td>SOC</td>
<td>0.076</td>
<td>0.079</td>
<td>0.019</td>
<td>0.029</td>
<td>0.055</td>
<td>0.989</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
\(^{a}\) Rotation converged in 6 iterations.
Source: Original calculations by the author.

1 Refers to the consistency of cognitions.
framework for the analysis of this factor. However, in this research it will be referred to as Reference Loyalty, as it forms the basis for reference behaviour and acts as a reference for the respondent’s own future behaviour, thus explicating the nature of the present construct better.

From the third factor composed of AC5 and CC2 it is clearly visible that the “cocktail” of affect and loyalty as understood by customers is strongly connected to the economic characteristics of the shopping location. However, there can be a bidirectional influence – the affect and loyalty component AC5 can be caused by the price level, perceived value and justice; or vice versa: the perceived price level or value can be justified on the basis of likeliness, thus both – AC5 and CC2 – variables being both, dependent and independent variables at the same time. The factor analysis, however, does not allow for establishing the causality between the factors, and for this reason, the causal directions can only be proposed on the basis of theory, previous research results and logic.

Another plausible explanation for emergence of AC5 together with CC2 in one factor is connected to interpretation of the question as such. This explanation is called for by the fact that AC5 inquiring affective reflection of conative loyalty, factors with conative loyalty SW very weakly (0.167 in factor 2) and so does the SW in regard to AC5 (0.290 in factor 1 and 0.138 in factor 3). Thus, this allows for the assumption that respondents may treat AC5 as a conditional statement not connected to SW and FCH factors. This discord between affective reflection of conative loyalty (AC5) and propensity to switch (SW) as well as first choice (FCH) is an important issue for further research.

However, the initial findings of factor analysis do not support the factor model constructed on the basis of previous literature and suggests a different factor model, which is presented on Figure 2.

Based on the 6-factor solution discussed above, which was founded on variables constituting the model constructed on the basis of literature review, the combination of AC1-AC5 variables together with REF as the first group was included in the first factor, as it was also the case with the initial model. In the second factor, variables REF, FCH and SW were combined based on the Cognitive Dissonance Theory. As the second new factor, calculative loyalty (CAL) was formed on the basis of AC5 and CC2, reflecting the loyalty component connected to calculative payoff from shopping location patronage. Although not directly suggested by factor analysis, PSW variable was included in the CAL factor for its rational calculative nature indicating actions in case of changing payoff ratio and thus suggesting the price elasticity of demand. Two remaining variables – CC1 and SOC – were combined together to reflect the potential of the customer: first, from the viewpoint of physical accessibility (CC1) determining more than most of the other factors the maximum potential SOC, and share-of-wallet (SOC) itself, which is an indication of how much of the maximum potential is actually exploited. A few variables/factors were renamed to better reflect their substance, e.g. CC1, which was renamed into the first-order factor location (LOC) having the face validity with second-order factor accessibility (ACC). Price tolerance (PTL, formerly PSW) as the second-order factor (also with face validity to PTL) was added to generalize the first-order factor and better reflect the structure of the model, and SOC-ACL factor was included the way it was in the previous model.

Second-order factors with face validity are included in the model again to emphasize its structure created by factors composed of several variables and to generalize the nature of the variables with face validity on the second level.
Given that both models – original as well as the new one – are composed of the same number of factor levels (3 levels), they were tested for descriptive power using factor analysis. The descriptive power of factor models was analyzed by determining the total variance explained by the models. In doing that, the cumulative percentages of explained variance weighted by factor loadings were multiplied between the levels of each model. The total average explanatory power coefficients for both models are presented in Table 4 and Table 5.

During the stages of factor analysis, communality proved to be rather low only in the last (3) stage of merging all factors together, where the analysis returned unacceptably low communality for ACL factor at 0.097. However, as the aim of the analysis was to test the total explanatory power of the model constructed on the basis of literature, the variables were “forced” into the model without much regard of the communality values or explanatory power at separate levels of the model. All other
communalities throughout the stages of factor analysis, however, proved to be acceptable with values above 0.600 with only PSW remaining at the moderate level of 0.482.

**Table 4. Explanatory Power of the Initial Literature-based Model**

<table>
<thead>
<tr>
<th>REF</th>
<th>AC1</th>
<th>AC2</th>
<th>AC3</th>
<th>AC4</th>
<th>AC5</th>
<th>CC1</th>
<th>CC2</th>
<th>FCH</th>
<th>PSW</th>
<th>CNLsw</th>
<th>ACLxx</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>86.072</td>
<td>ACML=76.910</td>
<td>CCML=60.731</td>
<td>53.010</td>
<td>53.010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>AFLL=66.198</td>
<td>CGLL=46.329</td>
<td>59.335</td>
<td>59.335</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>LOYL3=42.141</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Original calculations by the author.

As it was also the case with the literature-based model, the communalities for the new proposed model proved to be low only in one case at the last stage (3) of analysis (0.140), indicating the low fit of the action component of loyalty. The results of respective calculations for the new model are presented in Table 5.

**Table 5. Explanatory Power of the New Model**

<table>
<thead>
<tr>
<th>FCH</th>
<th>CNLsw</th>
<th>REF</th>
<th>AC1</th>
<th>AC2</th>
<th>AC3</th>
<th>AC4</th>
<th>AC5</th>
<th>CC2</th>
<th>PTLpsw</th>
<th>LOCxx</th>
<th>ACLxx</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>86.072</td>
<td>ACML=76.910</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>RFLL=72.886</td>
<td>AFLL=76.135</td>
<td>CALLN=60.656</td>
<td>CVIL=64.832</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>LOYLN=45.119</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Original calculations by the author.

However, the new model indicated a slightly better explanatory power (42.141% against 45.119%, yet both unacceptably low, except for testing) in terms of summary explanatory power than the literature-based model, which allows to assume its better explanatory power of responses to customer satisfaction.

However, due to the factor structure differences between the literature-based and new model, as well as low summary explanatory power and low communalities in case of both models together with controversies in literature regarding the inclusion of variables in larger loyalty phases, both of the presented models are treated solely as an illustrative rationale for exploration of separate variables and their interrelations rather than composite constructs and relationships between these, as the main goal of the present research is the analysis of interrelationship of satisfaction judgments and consecutive responses to these rather than arguing about the dimensionality and nature of loyalty, which is a fruitful area for further research, although widely explored already. To give a more concise view on interrelations between constructs, affective commitment variables will also be factored together based on the Cronbach’s alpha of 0.923 on non-standardized items and 0.924 on standardized items. However, to give a more detailed overview, also the initial variables AC1-AC5 will be preserved. Additionally to the above structural models, the perceived price level together with perceived price-quality ratio will be included in calculations of variable interrelations to augment the scope of research and recency will be added from RFM (Recency-Frequency-Monetary Value) Model together with the time since the last patronage.

**Interfactor correlations.** To determine the interfactor correlations, a correlation analysis was conducted. Pearson’s rho (ρ) was used as a parametric correlation coefficient for most of the researched variables, except for the place factor (PLC) and participation in loyalty programs (FUP) among the focal variables, and most of the
socio-demographic classifiers, where according to the nature of non-parametric data
the Spearman’s $r$ was calculated instead. As correlations presume close-to-normal
distribution, all variables (except for PLC and FUP) were transformed first by
exponentiating the initial variables appropriately until the skewness resulted in 0.000.
Before exponentiation, variables AC1-AC5 were factored together into an ACML
factor, which was further exponentiated on its own. Prior to exponentiation, the scales
of non-7-scale measures (LON, LST and SOC) were also adjusted to 7-scale.

However, as mostly such transformation for elimination of skewness resulted
neither in remarkably higher probability scores ($p$) nor in different correlation
coefficients (both $\rho$ and $r$; except for the composite ACML variable and initial as well
as adjusted LON and LST variables with open-ended questions, where respondents were
able to choose the appropriate value themselves, and only regarding the correlations
between old, adjusted and normed versions of these variables), the initial values of
variables will be used to determine the correlations to avoid the distortion of the results
through multiple transformations. The schematic result of interfactor correlations is
presented on Figure 3.

**Figure 3. Interfactor Correlations**

![Diagram of interfactor correlations]

* Correlation is significant at 0.95 level.
** Correlation is significant at 0.99 level.

Correlation is stronger than $\rho=0.3$.
Correlation is stronger than $\rho=0.7$.

*Source: Original figure by the author.*
Affective/emotional rather than cognitive/rational influence of satisfaction. The findings from correlations back up the suggestions reflected in the factor analysis regarding the affective nature of satisfaction: regardless of causality, the correlations between customer satisfaction and emotional, i.e. affective measures (such as affective commitment sub-measures AC1-AC5 and summary measure ACML as well as REF, FCH and SW measures, which proved to be of affective nature according to the results of factor analysis as well as literature) are much stronger than of satisfaction and measures of calculative (CC1, CC2, PSL, PRL, PQR), conative (SW) or action (SOC, LON, LST) nature. It is also interesting to observe that all affective commitment measures factored together result in a much higher correlation with satisfaction than any of the measures do separately.

The rather affective nature of responses to customer satisfaction is well visible from the correlations between the loyalty measures themselves: not only are AC1 and AC4 highly correlated ($\rho=0.804$, $p=0.000$) within the affective commitment factor, indicating the affective attitude towards the perception of behavioural intentions, but all affective comment measures have also moderate correlations with SW ($0.494<\rho<0.594$, $p=0.000$; for ACML: $\rho=0.624$, $p=0.000$) and FCH ($0.493<\rho<0.627$, $p=0.000$; for ACML: $\rho=0.638$, $p=0.000$).

The relatively high correlation with image ($\rho=0.733$, $p=0.000$) is another argument in favour of the affective rather than cognitive influence as well as nature of satisfaction, suggesting that customers may construct satisfaction judgments largely based on image as well as adjust image according to their satisfaction experience. It is important to mention again the issue of transaction-specific vs. global nature of satisfaction here, as transaction-specific satisfaction judgments might form the input to image variable, which may further influence the global satisfaction judgments. However, this hypothesis needs yet to be tested.

Absolute cognitive measures do not connect to satisfaction adequately. It is interesting to observe that although a major influencer of the choice of grocery retailer according to EMOR (2004, 2006) and Soone (2004a, b, c), location does neither carry any emotional value nor is connected to cognitive, conative or action dimensions of consequences of customer satisfaction. As the same result was evident from factor analysis where the CC1 split from other variables into a separate factor already in the 3-factor solution, it is logical to assume that satisfaction does not have much influence over it, and that satisfaction occurs rather independently from location and is more dependent on other, presumably personal or in-store characteristics.

CC1 as such can also be treated as presumption of access, for which it should not be used as dependent variable to measure the consequences of customer satisfaction. However, it might play an important role in non-satisfaction-related loyalty. Thus CC1 can be excluded from the model of responses to customer satisfaction, but must be definitely included in loyalty and consumer behaviour models. This suggestion is also backed up by the observations of market trends supported by recent studies by EMOR (2004, 2006), which indicate that location and access to the store is becoming less and less the issue and consumers – especially “weekend shoppers” – are willing to travel longer and longer distances in order to get a more favourable mix of store attributes.

Another variable which does not have correlations with customer satisfaction above low correlation coefficient values, is the perceived price level of the store (PRL), for which the highest correlation coefficient (significant at $p=0.000$ level) in absolute terms is with CC2 as the potential payoff from patronizing the particular store ($\rho=-0.212$). On the one hand, it indicates the relatively little correlation between price and
payoff, which might result from acknowledging the somewhat different value offerings of the stores [based on particular store ($P_{\text{PRL}/\text{PLC}}=-0.163$, $p=0.000$), image ($P_{\text{PRL}/\text{IMG}}=0.113$, $p=0.000$), patronage longevity, i.e. habits ($P_{\text{PRL}/\text{LONG}}=0.153$, $p=0.000$), loyalty programs ($P_{\text{PRL}/\text{LOY}}=-0.133$, $p=0.000$), etc.] or vice versa – on the very similar price level of comparable stores. However, the correlation coefficients in this case are too low to determine the basis for differentiation, and this is also not the goal of the present research.

On the other hand, and most importantly, the low correlation between PRL and CS demonstrates the small effect of perceived price level on satisfaction and vice versa, as the relationship in this case is most likely to be bidirectional, and allows for exclusion of price level from the satisfaction model. However, again – as price level is one of the top three influencers of grocery shopping location according to EMOR (2004, 2006) and Soone (2004a, b, c), it is important to include it into modelling of loyalty and consumer behaviour.

To generalize, it is possible to hypothesize that cognitive/calculative measures presented in absolute terms (i.e. price level rather than price/quality ratio etc.) applying to the “rational nature” of consumers, correlate with satisfaction weakly and therefore can be excluded from satisfaction modelling in grocery retail sector. It is logical to assume that absolute and unambiguously (e.g. numerically) measurable values (e.g. distance and price) do not depend on satisfaction judgments, although might rather influence the satisfaction, thus being included in antecedents of satisfaction decisions (e.g. in value) as well as in loyalty not related to satisfaction (cf. Heskett et al. 1994; Soone 2004a, b; Storbacka, Strandvik and Grönroos 1994). Hence, such measures need not to be counted in twice.

“Relative” cognitive-emotional measures might describe the consequences of satisfaction judgments more adequately than “absolute” cognitive/rational measures. As it might be advised on the basis of the results, “absolute” (e.g. non-relative) and cognitive (rather than affective) measures have little relationship with satisfaction (v. sup.), which is, at least in case of grocery services in the current context, mostly of affective nature. As such, for example, perception of price level (PRL) alone does not reflect the satisfaction judgments well ($P_{\text{PRL}/\text{CS}}=0.080$, $p=0.016$) while the descriptive power of all affective commitment measures (AC1-AC5) is above $\rho=0.53$ and of summary measure ACML at $\rho=0.727$ (all significant at $p=0.000$ level).

This finding suggests again the relatively affective nature of satisfaction judgments and their consequences, implying the use of relative measures containing in addition to cognitive “absolute” measures, such as price level (PRL), also the component containing an emotional part, such as perceived quality (being both, affective and cognitive by nature), resulting in price/quality ratio (PQR), rather than suggesting the use of cognitive-only measures. Indeed, the price/quality ratio (PQR) correlates with satisfaction scores at much higher level than sole price level (PRL) does, i.e. at $\rho=0.483$ ($p=0.000$). As surprising as it might be, economic payoff (CC2) appears also to be of mixed nature stemming from correlation as well as factor analysis. The plausible explanation for such inclusion is that while customers evaluate PRL as solely a numerical cognitive variable unambiguously measurable by certain index, CC2 includes also the value and emotional touch to the judgment, such as service, environment, etc. resulting in a mixed nature of that variable. The third mixed variable, for instance, is price sensitivity (PSW), which also takes into account other than price-related sides when making the price-based switching decision.
The tendency of higher performance of affective or mixed affective-cognitive measures compared to cognitive-only measures, is supported by factor as well as correlation analysis, as it is, for example, well visible from the correlation of CS with CC1 ($\rho=0.157$ at $p=0.000$), which is about 4-5 times lower than with any of the affective commitment measures, and about three times lower than the correlation between CS and mixed variable PRL ($v. \ sup.$).

Taken all together, mixed measures demonstrate also higher descriptive power in regard to future behavioural intentions than purely cognitive ones, resulting in higher correlation with reversed propensity to switch measure (SW) in most cases, which allows to suggest the avoidance of purely cognitive measures when describing the consequences of satisfaction judgments and preference for either affective or relative affective-cognitive measures.

Influence of customer satisfaction on action loyalty. A rather surprising finding that can even be regarded as controversial to recommendations by Bitner (1990), Bloemer, de Ruyter and Wetzels (1999), Cardozo (1965), Dick and Basu (1994), Giese and Cote (2000), Heskett et al. (1994), Heskett, Sasser and Schlesinger (1997), Kamakura, Mittal, de Rosa and Mazzon (2002), Storbacka, Strandvik and Grönroos (1994) and Soone (2004a, b, 2005), yet well in line with findings of Hallowell (1996), is that share-of-wallet (SOC), i.e. action dimension of loyalty, is relatively independent from satisfaction, correlating at only $p=0.110$ ($p=0.001$), which together with findings from Soone (2004c) and EMOR (2004, 2006) suggests that other factors than satisfaction may be more important in influencing the actual shopping behaviour.

Another surprising finding is the even lower influence of perceived price/quality ratio (PQR) on SOC, which is almost non-existent ($p=0.069$, $p=0.037$). Here it is also suitable to remind that PQR/CS correlation was on average $p=0.483$ ($p=0.000$) while location (CC1) and CS were rather weakly correlated again ($p=0.157$, $p=0.000$). Taking into account the suggestion by Fornell (1992) that “[t]he impact of customer satisfaction for repeat business and customer loyalty is not the same for all industries” (p. 7), it is reasonable to assume that for retailing industry the share-of-wallet indicator might be influenced by other factors than satisfaction more strongly than by satisfaction itself, the other factors being such as range of goods or accessibility by car, as well as consumer-specific factors like shopping habits (weekend or daily shoppers), etc. Satisfaction and affective measures play a certain role ($p=0.149$ at $p=0.000$ for SOC/AC1 correlation, $p=0.096$ at $p=0.004$ for SOC/AC2, $p=0.156$ at $p=0.000$ for SOC/AC3, $p=0.155$ at $p=0.000$ for SOC/AC4, $p=0.163$ at $p=0.000$ for SOC/AC5 and $p=0.164$ at $p=0.000$ for SOC/ACML), but their influence on purchase volume needs to be investigated further in the context of other variables influencing the share-of-wallet.

However, due to the low correlation coefficients between SOC and all other variables, it is difficult to make definite claims regarding the influence of customer satisfaction over share-of-wallet, as also a finding controversial to the previously mentioned may hold suggesting that SOC might be influenced the strongest by CS and affective commitment variables if the selection was limited to the researched set of variables, as their correlation coefficients are about twofold compared to SOC correlations with other variables. Thus, this remains an important issue for further research.

It is important to mention that SOC is also somewhat influenced by patronage longevity (LON; $p=0.164$, $p=0.000$). However, this correlation is too low to make any definite statements. As previously mentioned, it is not feasible to make any firm
conclusions regarding the SOC on the basis of correlation analysis as the values of all correlation coefficients fall into a low/non-existent range according to both, Tähtinen (1993) and Rowntree (1981, 1991).

Lower correlation coefficients may also result from the freeform scale of 0-100% where customers had to evaluate their patronage concentration, as these self-evaluated scales are often considered to result in a rather high measurement error, which, in turn, can lower the correlation coefficients while leaving the confidence level high and almost unchanged.

Emergence of reference/reflective loyalty. As already described in the results of factor analysis in the section testing the structure of the literature-based model, reference/reflective loyalty emerges as a strong and totally separate factor group comprising the judgment of shopping location as the first choice (FCH), referrals (REF) and reversed propensity to switch (SW).

The emergence of this group can be well justified by the Cognitive Dissonance Theory, which proposes that individuals seek consistency among their cognitions and when inconsistency occurs, they usually change attitudes to accommodate the behaviours. Thus, the decision regarding a particular shopping location being the first choice for a person (FCH) is influenced by his/her conation towards the future behaviour (SW). In this case, SW serves as a proxy for actual behaviour and FCH might be called “an internal/inward reference”, as the person refers himself/herself to a particular store. There is also another reference component to consumer behaviour: the “external/outward reference”, which is represented by referrals (REF, $\rho_{\text{REF/PSW}}=0.566$, $p=0.000$).

It is reasonable to propose that both, FCH and REF are equally or to a comparable extent influenced by SW (for SW/FCH: $\rho=0.566$, $p=0.000$; for SW/REF: $\rho=0.590$, $p=0.000$), while the direction of the influence between FCH and REF ($\rho=0.625$, $p=0.000$) is from the former to the latter – a person has to make his/her decision before recommending it to others, not vice versa. These interrelations are graphically presented on Figure 4.

However, it is important to note that recommendations can be based not only on actual but also conditional choices, for example, taking into account the background of the person seeking advice or the context of reference. For example, even if a person is not patronizing a certain store due to its unfavourable location from this person’s point of view, s/he might still recommend the store to someone seeking advice who is living in the neighbourhood of that store. To generalize, it is justified to say that the person is more likely to make an outward referral in case the inward referral is made or is likely to be made in

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**Figure 4. Interrelations of Reflective/Reference Loyalty Components and Satisfaction**

![Diagram](https://example.com/diagram.png)

CS Customer satisfaction  
FCH First choice  
REF Word-of-mouth referral  
SW Propensity to switch  

All correlations are significant at $p=0.000$ level.  
Parametric correlations are based on Pearson’s $\rho$.

*Source: Original figure by the author.*
circumstances with the person whom it is addressed to, i.e. in case the subjective judgments are positive no matter what the objective obstacles are, or in case the subjective judgments would be positive under ceteris paribus conditions.

The Cognitive Dissonance Theory gives also a good explanation for the somewhat higher correlation between reference variables themselves ($\rho_{FCH/REF}=0.625$, $p=0.000$) compared to the correlation between conative SW measure and reference factors (SW/FCH: $\rho=0.566$, $p=0.000$; SW/REF: $\rho=0.590$, $p=0.000$): the variables on the same affective level are much better aligned already by their nature than measures on different levels of affect and conation, and as cognitive dissonance requires constant adjustment of these levels to each other, the same-level measures are somewhat higher correlated than those on different levels.

But almost equally important with emergence of the separate reflective/reference loyalty factor, relationship between and within its levels, is the relationship of its components with satisfaction, which is also presented on Figure 4. While having a strong correlation with REF ($\rho_{CS/REF}=0.774$, $p=0.000$) according to both, Rowntree (1981, 1991) and Tähtinen (1993), customer satisfaction (CS) exhibits somewhat weaker yet still average correlations with FCH ($\rho_{CS/FCH}=0.591$, $p=0.000$) and SW ($\rho_{CS/SW}=0.615$, $p=0.000$). This can be explained by the fact that while recommendations are rarely restricted by objective factors on behalf of recommender and do not carry normative behavioural consequences, they may reflect the “true” judgments better, as they are unobstructed by barriers thus being realized in a “purer” environment, while the FCH factor has to be adjusted by partially objectively determined opportunities to switch according to the Cognitive Dissonance Theory and both SW and FCH get somewhat distorted by the environment/context therefore resulting in lower correlation coefficients. On the other hand, it might be feasible to claim that REF is influenced by the satisfaction judgments to a comparatively larger extent compared to other influencing factors external to the model presented in the present research, than SW and FCH are. Whichever might be the reasons, it is possible to conclude that REF is most likely a more appropriate measure to determine the “true” satisfaction-based preference of respondents, while FCH is taking into account the contextual restrictions and reflects the “adjusted” preference counting also in measures external to consumer satisfaction.

The aforementioned web of interrelations is an important finding in theory as well as for practical application, as it explains the interrelations of and between the levels of internal/inward and external/outward reference behaviour, their relations to propensity to switch and connections of all these to customer satisfaction, as well as proposes some explanations for the reasons behind these interrelations and mechanisms of their influences.

Affective nature of reference/reflective loyalty. It is also interesting to observe that the basis for any reference behaviour – either internal/inward reference in the form of first choice (FCH) or preceding propensity to switch (SW), or external/outward reference (REF) – is mainly of affective nature: while the correlation with the affective commitment measures (AC1-AC5 and ACML) and other measures of affective nature [such as satisfaction (CS) and image (IMG)] is in range from $\rho=0.469$ to $\rho=0.774$ being above or close to $p=0.6$ in most cases (all significant at $p=0.000$ level), then correlation with factors of more cognitive nature such as goodness of location (CC1), price level (PRL) and share-of-wallet (SOC) lies in the range from $\rho=0.072$ to $\rho=0.157$ (all statistically significant at $p=0.030$ or higher, except for PRL/FCH at $p=0.041$, $p=0.211$; and PRL/SW at $p=0.021$, $p=0.523$), which indicates a rather low relationship between
reference/reflective loyalty measures and variables of cognitive rather than affective nature. At the same time, for “mixed” variables such as price/quality ratio (PQR) or payoff (CC2) the correlation coefficient with reference/reflective loyalty measures is between $0.419 \leq \rho \leq 0.487$ (all statistically significant at $p=0.000$ level) further motivating the proposal regarding the affective nature of this type of loyalty consequences.

Based on the aforementioned, it is possible to conclude that similarly with satisfaction, also reference/reflective loyalty is mainly of affective nature and should be treated as such. The main value for practitioners lies in the fact that while carrying affective traits, reference (FCH, REF) and choice (FCH) behaviours can be influenced by emotional means much more effectively and efficiently than can be done through rational arguments. This does not mean, however, that consumers would not like to get better prices, location, etc., but better prices or location or other similar “objective” characteristics of the store is unlikely to induce the reference behaviour of consumers, although the FCH factor may be determined by these “objective” traits. Thus, it might be generalized that the “subjective” emotional experiences determine the extent of reference/reflective loyalty and can be the basis for choice among alternatives, while the “objective” sides might result in the choice of location, but very likely might carry little influence on reference/reflective loyalty measures.

There is also another logical hypothesis: if divided into a primary consideration set and already filtered set, the “objective” measures might serve as preconditions for inclusion into this primary set while the “subjective” measures filter the options into the second set. There might also be the opposite case – consumers may wish to choose the shopping location by a “subjective” set of measures (e.g. image, customer service, etc.), while totally disregarding the “objective” set (e.g. location, price level, etc.). However, this is not the usual case but is more characteristic of luxury consumption, which usually excludes the grocery shopping in Estonia.

In any case, additional investigation is needed to determine the triggers of components of reflective/reference loyalty and their structure in greater detail and establish the causal relationships among these constructs as well as of these constructs with satisfaction.

7. Summary, Conclusions and Directions for Further Research

To conclude, it is justified to claim that satisfaction should indeed be treated as an affective attitude-like judgment, following the recommendations by Bolton and Drew (1991a), Mano and Oliver (1993), Hunt (1977), Oliver (1981, 1989) and Westbrook and Oliver (1991): the research findings suggest that the affective side of this psychological state strongly dominates over the cognitive one (v. sup.). On the basis of research findings we can recommend that for its nature, customer satisfaction is a somewhat better predictor of affective loyalty dimensions than cognitive ones even under high price sensitivity conditions, which are the common denominator of all grocery and convenience goods retail shops in Estonia. However, the particular strength of influence still needs to be determined for each industry and particular context separately.

Churchill and Surprenant (1982), Lin (2003), Swan, Trawick and Carroll (1980), Westbrook (1980) were backed up to some extent regarding the presence of both, cognitive and affective traits in satisfaction judgments. However, as presented earlier, affective traits seem to dominate over cognitive ones in consequences of customer satisfaction regarding the grocery retail services. Yet, the cognitive dimensions of loyalty might be an important addition in explicating the consumer behaviour in grocery sector parsimoniously, but due to the market characteristics, competitive situation or other influences, variables reflecting the cognitive dimension of loyalty did not appear to be the dimension strongly connected to satisfaction judgments.

It is important to note again that the influence of satisfaction on mixed measures containing either affective or conative traits is much stronger than that on purely cognitive or action measures. The most logical plausible explanation here lies in the predominantly affective nature of satisfaction, as the constructs can be hypothesized to influence each other according to the common qualities/traits of these constructs, i.e., affective constructs influence the affective judgments the strongest, while cognitive measures should act in a similar way regarding the other cognitive variables. However, it is important to add that the importance attributed by consumers to particular constructs in certain contexts also plays a crucial role in determining the exact interrelations of these constructs.

Generalizing the satisfaction influence on loyalty dimensions taking into account the findings regarding the nature of satisfaction, dominant traits of loyalty constructs, and influence of satisfaction on loyalty dimensions as well as interrelations between these loyalty dimensions themselves, it is possible to hypothesize that satisfaction influences the strongest the affective dimension of loyalty ($0.534 \leq \rho_{\text{PCS/ACM,ACML,RFL,IMG}} \leq 0.774$, all significant at $p=0.000$ level), followed by mixed affective/cognitive qualities ($0.409 \leq \rho_{\text{PCS/CC2,PQR}} = 0.483$, $p=0.000$), then by predominantly conative (mixed conative/cognitive) traits ($\rho_{\text{PCS/PSW}} = 0.351$, $p=0.000$), and only afterwards, without almost any correlation with CS, by action ($\rho_{\text{PCS/SOC}} = 0.110$, $p=0.001$) and purely cognitive ($\rho_{\text{PCS/PRL}} = 0.080$, $p=0.016$) measures. The graphical representation of this generalization is presented on Figure 5.

Based on the above, it is possible to pose two hypotheses regarding the affective and conative traits and satisfaction (CS): (1) conative measures carry some strong affective traits (most likely); and (2) CS involves also strong conative traits (as recommended by Halstead, Hartman and Schmidt 1994, Neal 2000 and Westbrook and Oliver 1991). This issue, however, remains a fruitful topic for

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**Figure 5. Graphical Representation of Satisfaction Influence on Loyalty Dimensions**

Source: Original figure by the author.

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further investigation; yet the present research findings recommend some inclination towards the first presented hypothesis.

Additionally, further research is needed into the nature of satisfaction and its influence on different dimensions of loyalty, which is authored by findings of the present research allowing to hypothesize that independent variables of some type/dimension affect the dependent variables of the same type/dimension the strongest, while having much less/lower influence on the variables of other types/dimensions; this hypothesis, however, needs to be tested by further research.

Finally, the analysis of the factor structure of affective, cognitive, conative and action consequences of customer satisfaction operationalised as loyalty dimensions following the recommendations of Oliver (1997), returned the result suggesting that also other, alternative factor structures may be justified for some particular research purposes, contexts and methodologies, being of superior descriptive power in these cases than the aforementioned model. As one of the important findings, the reflective/reference loyalty factor emerged, encompassing referrals, first choice and propensity to switch and thus indicating the adherence of consumer behaviour to the Cognitive Dissonance Theory widely accepted in psychology.

This concludes the working paper discussing the present research. All questions regarding the present research should be directed to the author of the working paper. Any use of the information included in the working paper must be properly referenced.

References


