DISSERTATIONES RERUM OECONOMICARUM UNIVERSITATIS TARTUENSIS

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ANDRES KUUSIK

Segmentation of repeat visitors using passive mobile positioning data: customer loyalty based approach

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Supervisors: Professor Urmas Varblane (PhD), University of Tartu, Estonia
Professor Rein Ahas (PhD), University of Tartu, Estonia

Opponents: Professor Frank Witlox (PhD), Ghent University, Belgium
Professor Katri Kerem (PhD), Estonian Business School, Estonia

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Tiru, M., Kuusik, A., Lamp, M-L., Ahas, R. (2010). LBS in marketing and tourism management: measuring destination loyalty with mobile positioning data. *Journal of Location Based Services*, 4(2), 120–140.

Kuusik, A.; Varblane, U. (2009). How to avoid customers leaving: the case of the Estonian telecommunication industry. *Baltic Journal of Management*, 4(1), 66–79.

Kuusik, A. (2007). Affecting Customer Loyalty: Do Different Factors Have Various Influences in Different Loyalty Levels? University of Tartu, Faculty of Economics and Business Administration, Working Paper Series (1–28). Tartu: Tartu Ülikooli Kirjastus

II Conference publications and presentations

Kuusik, A.; Ahas, R.; Tiru, M. (2010). The ability of turism events to generate destination loyalty towards the country: an Estonian case study. Mäeltsamees, S.; Reiljan, J. (Eds.). *Discussions of Estonian Economic Policy* XVIII (156–175). Berlin – Tallinn Berliner Wissenchafts-Verlag, Mattimar

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Kuusik, A.; Ahas, R.; Tiru, M. (2009). Analysing Repeat Visitation on Country Level with Passive Mobile Positioning Method: as Estonian Case Study. Mäeltsamees, S.; Reiljan, J. (Eds.). *Discussions of Estonian Economic Policy* XVII (140–155). Berlin – Tallinn: Berliner Wissenchafts-Verlag, Mattimar

Kuusik, A.; Ahas, R.; Tiru, M. (2009). Korduvkülastuste analüüsimine riigi tasandil passivse mobiilpositsioneerimise meetodiga: Eesti juhtum. In: Eesti Majanduspoliitilised Väitlused : Majanduspoliitika Euroopa Liidu riikides – aasta 2009, Värska, 1–3 juuli 2009. (Toim.) Sulev Mäeltsamees (TTÜ), Janno Reiljan (TÜ). Berlin-Tallinn: Beriner Wissenschafts-Verlag, 51–55.

INTRODUCTION

List of papers

This dissertation is based on the following original publications, which will be referred in the text by their respective numbers.

I **Kuusik, A**.; Varblane, U. (2009). How to avoid customers leaving: the case of the Estonian telecommunication industry. *Baltic Journal of Management*, 4(1), 66–79.

II Tiru, M., **Kuusik, A.,** Lamp, M-L., Ahas, R. (2010). LBS in marketing and tourism management: measuring destination loyalty with mobile positioning data. *Journal of Location Based Services*, 4(2), 120–140

III **Kuusik, A.;** Tiru, M.; Ahas, R.; Varblane U. (2011). Innovation in destination marketing: the use of passive mobile positioning for the segmentation of repeat visitors in Estonia. *Baltic Journal of Management*, 6(3). Accepted, in print.

The importance of the topic

Repeat visitation is a topic handled in both tourism and destination marketing. Both areas are growing in importance. The crucial role that tourism plays in generating growth and jobs, its increasing importance and its impact on other policy areas ranging from regional policy, diversification of rural economies, maritime policy, employment, sustainability and competitiveness to social policy and inclusion (‘tourism for all’) is widely acknowledged throughout the European Union (Eurostat… 2010). The tourism industry is a very important element of most countries’ economies. For example, in 2008, over three per cent of the GDP of 12 of the 27 EU member states came from international tourism receipts, whilst in seven of these countries, the proportion was greater than five per cent. Tourism plays a very important role in the new EU member states: Estonia, for example, saw 5.1 per cent of its GDP being generated by international tourism in 2008 (Tourism… 2010). Therefore, the tourism industry should be given high priority by the government and efforts should be taken in order to develop a highly professional marketing strategy for the tourism industry at the macro level.

Destination marketing is also becoming increasingly more important. Due to globalisation, countries and regions are faced with increasing competition from each other. They are competing for direct foreign investment, visitors and residents, and as venues for business (Kotler et al. 1999). The more mobile capital, people and enterprises become, the more attractive these destinations must be. For this reason, “place marketing” as a specific discipline has arisen. The element of place marketing which deals with tourism is called “destination marketing”. Destination marketing facilitates the development of tourism policy, which should be co-ordinated with the regional development strategic plan. The marketing of destinations should also guide the optimisation of tourism and the maximisation of benefits for the region (Buhalis 2000).

Repeat visitation could also be treated as a behavioural expression of visitors' (destination) loyalty. Since the 1980s the emphasis of marketing strategies has shifted from one-off transactions to long-term relationships (Gummesson 1999). Nowadays the retention of loyal customers is more important than winning new ones. Research carried out by different authors has identified several reasons for this:

- *Reduction of marketing costs.* According to previous studies, it can cost as much as six times more to win a new customer than it does to keep an existing one (Rosenberg et al. 1984).
- *Lower customer management costs.* Start-up costs in a new relationship are high but it is possible to reduce or even eliminate the maintenance costs of an ongoing relationship. Therefore there is a high probability that an account will become more profitable as the relationship lengthens (Buttle 2004). Depending on the particular industry, it may be possible to increase profit by up to 60 per cent after reducing potential migration by 5 per cent (Reichheld 1993).
- *Increasing purchases.* A long-term customer is more likely to expand the relationship with a supplier and purchase a wider variety of the supplier's products than a short-term one (Bowen et al. 2001). In addition, when suppliers know their customers better, they are more able to make the right offers and therefore increase up and cross-selling (Buttle 2004).
- *Reduction of risks.* Over time, trust and commitment between partners are likely to develop. For the supplier this secures stable revenue and profit streams. Therefore demand, revenue, profit and customer behaviour becomes more predictable (Buttle 2004).
- *Positive word-of-mouth (WOM*). Loyal customers are more likely to tell their friends and colleagues about their favourite organisation or brand (Shoemaker et al. 1999; Reichheld 2003).

The above-mentioned reasons are extremely relevant to the tourism industry. The increasing number of destination alternatives and thus competition for market share requires destination managers to think about customer retention and how to encourage customers to keep returning and continuing to re-purchase. The study by Wang (2004) revealed that repeat visitors spend more on shopping, meals outside the hotel, local transport and hotel accommodation than first-time visitors. Shani, Rivera and Hara (2009) discovered that repeat visitors to cultural events spend more money, recommend the events to others, stay longer and visit more venues while at the event. Oppermann (1999) has added that having knowledge of the amount and type of loyal tourists helps to forecast total demand, design infrastructure and create positioning strategy. Several authors (Oppermann 2000; Buttle 2004; Petrick 2004, etc.) have pointed out that repeat visitation indicates a customer's positive attitude, which leads to positive word-of-mouth. Positive WOM increases the supplier's reliability and decreases the customer's perceived risk (Bowen et al. 2001).

Finally, the importance of segmentation should also be clarified. Segmentation involves dividing one large heterogeneous market into smaller homogeneous markets using different criteria (Wedel and Kamakura 2000). The organisational benefits of market segmentation have become widely accepted in academic marketing management literature (Quinn 2009). The most important aspect of market segmentation mentioned by the majority of authors is a better understanding of the customer (Dibb et al. 2002; Beane and Ennis 1987), which leads to increased effectiveness of marketing strategies (Ter Hofstede et al. 1999). There are several reasons for that:

- Providers can customise their offerings in ways that maximise customer use, meaning that they can charge premium price (Bolton and Myers 2003; Albert 2003).
- Providers can look for new product opportunities (Beane and Ennis 1987).
- Providers may standardise their offerings to a greater degree, thereby enabling cost reductions and more efficient allocation of critical resources (Bolton and Myers 2003; Kumar et al. 2009)
- Providers can customise their communication strategies (Beane and Ennis 1987; Albert 2003)

Papadopoulus (1989) stated that an effectively coordinated marketing planning process is vital for a national destination marketing organisation. He pointed out that identifying visitor profiles and segmentation of travellers based on their motivation is one of the most important phases in the marketing planning process. Buhalis (2000) underlined the need for market segmentation in the design of destination products and services. Therefore, in conclusion, the segmentation of repeat visitors should improve the effectiveness of destination marketing strategies and lead to the creation of new products and services facilitating the growth of the tourism industry.

The aim and research tasks

The aim of this dissertation is to create a framework for the segmentation of repeat visitors using passive mobile positioning data.

Repeat visitation as a behavioural expression of destination loyalty could be treated as a kind of customer loyalty in the destination marketing context (see Figure 1). Therefore, to reach the aim of the dissertation, the major focus is directed not only at repeat visitation and passive mobile positioning but also at the examination of the concepts of customer loyalty.

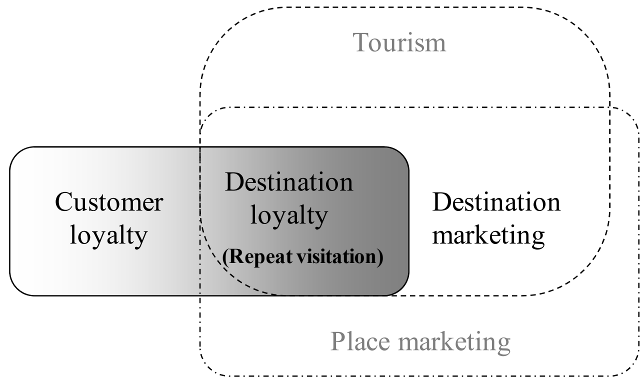

Figure 1. The focus of the dissertation. Source: compiled by the author

The field of customer loyalty has been rather comprehensively explored by a number of different authors. There are behavioural, attitudinal and composite multidimensional treatments of customer loyalty (see Section 1.1). The gap which this dissertation will fill is the disunion of these treatments and the lack of a complete, integrated and systematised approach which covers all different treatments of customer loyalty and enables the segmentation of visitors based on different types of customer loyalty.

Until now, repeat visitors have mainly been treated as one homogeneous segment by authors on the subject. One reason for the lack of segmentation of repeat visitors until now was the absence of necessary data. The traditional statistics on tourist flows, such as inbound visitor and accommodation statistics do not provide researchers with information concerning the choice of destination or the evaluation of objects of interest and the infrastructure used. In addition, in many European Union (EU) member states as in Estonia, inbound visitor statistics are no longer recorded. There are often tax violation problems with accommodation statistics in Eastern European countries and other states, and overnight stays do not show the daily geographical movement of people (Ahas et al. 2008). The author believes that passive mobile positioning (PMP) is a method which may enable the collection of data required for the segmentation of repeat visitors. PMP data is concerned with the location of call activities of mobile telephones in network cells that is automatically stored in the memory of service providers (the PMP method is described in more detail in Section 2.2).

Due to the novelty of the PMP method and segmentation principles, an exploratory approach to research is applied. The author attempts to discover which segments could be detected and how with the use of PMP.

Destination marketing, which could be understood as the intersection of place marketing and tourism, is not the main focus of this dissertation. It is considered only as an input and output factor for the segmentation of repeat visitors. On the one hand the goals of destination marketing determine the reasons for the segmentation of repeat visitors and on the other hand the composed segments will be used for the creation, execution or improvement of destination marketing strategies. Tourism and place marketing as wider fields of research are also out of focus in this dissertation and will be treated only as context for repeat visitation. Therefore, to achieve the aim of the dissertation the following research objectives are proposed:

1. Explore the concepts of destination loyalty and more generally customer loyalty to understand the nature of repeat visitation.
2. Explore the links between repeat visitation and tourism, place and destination marketing to understand the reasons for repeat visitation.
3. Systematise the different types of customer loyalty and based on that work out the framework for the segmentation of repeat visitors.
4. Outline the data and methodology needed for segmentation of repeat visitors.
5. Discern the existence of different loyalty segments and the need to distinguish between them.
6. Find out whether the mobile positioning method is able to provide necessary data for segmentation and whether the proposed framework of segmentation is applicable for real empirical data.
7. Critically analyse the limits of the passive positioning method and the limits of the whole framework proposed by author.

The structure of the dissertation

This dissertation is structured into theoretical, empirical and discussion elements (see Figure 2). The first part of the dissertation consists of two chapters. The first chapter covers research objectives 1–3, provides the theoretical foundations for the study of repeat visitors and comprises two sections. The chapter begins with the exploration of the concept of customer loyalty (Section 1.1). Unidimensional stochastic, determined and multidimensional loyalty concepts are explored. Based on different concepts and a previous definition, a new conceptualisation of customer loyalty and a system of loyalty types is proposed. Section 1.1 should be seen as a basis for Section 1.2 and for the first empirical study.

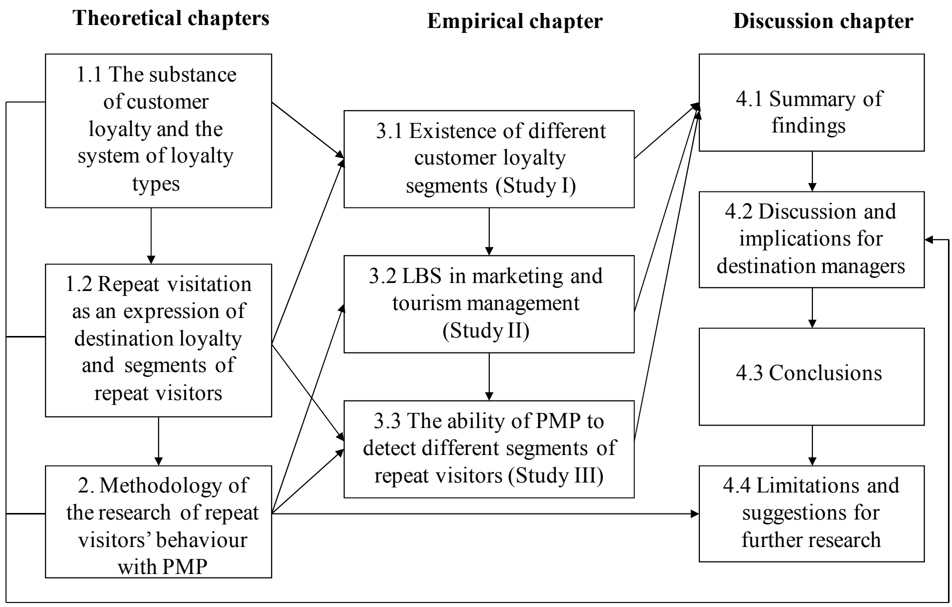

Figure 2. The structure of the dissertation
Source: compiled by the author

In section 1.2 the conceptualisation of destination loyalty and repeat visitation is addressed, which is followed by a discussion on visitors and destinations. In combining the result of this discussion with the definition of customer loyalty addressed in first section, a new definition of destination loyalty is proposed. The knowledge set out in the previous two sections is combined and synthesised. As a result, deductive segments of visitors are presented in Figure 10. The author also proposes how different types of visitors could be divided into the loyalty segments and direct and indirect ways for identifying loyalty segments (Figure 12) are under the consideration. This section sets the framework for the third empirical study and for the overall discussion of the dissertation.

The second chapter proceeds with the methodological questions (research objective 4) and comprises three sections. In the first (Section 2.1.) the author presents the different characteristics and measures required for the identification of loyalty segments. In the second section (Section 2.2.) the nature and possibilities of the mobile positioning method are explored. The section ends with a list of characteristics which are observable with the passive mobile positioning method and could therefore be used for the detection of loyalty segments or visitor types. Section 2.3 summarises the methods which are used in the empirical studies presented in the dissertation.

The third chapter covers research objectives 5 and 6 and consists of three empirical studies. The first study is not related to repeat visitation but considers the loyalty based segmentation of customers in detail. It is very closely related to Section 1.1, showing that the impact of the different factors affecting loyalty is dependant on the level of loyalty of the customers and therefore the detection and differentiation of different loyalty segments is important.

The second empirical study introduces the possibilities offered by passive mobile positioning and is therefore closely related to the second chapter. The main objective of the study is to work out the algorithm for the detection of repeat visits. With the use of the generated algorithm and the characteristics presented in Section 2.2, some descriptive statistics about repeat visitation in Estonia are presented.

The third empirical study has an integrative role in the context of this dissertation. Almost all the learning from the theoretical chapters are used and combined. In this study the testing of the proposed framework for the segmentation of repeat visitors using PMP data is accomplished. Different characteristics are used for the direct or indirect detection of repeat visitors' segments. Figure 9 in the third case study shows the distribution of visitors to Estonia in the loyalty segments identified.

The last chapter of the dissertation covers research objective 7. It consists of four sections and offers a short overview of empirical results, discussion and conclusions based on these results, as well as a presentation of the limitations of the dissertation and some suggestions for future research.

Originality of the research and its practical relevance

This dissertation presents several novel aspects for dealing with repeat visitors. First, the focus on repeat visitors and long-term relationships is novel. As Karavatzis (2005), Skinner (2008) and Rainisto (2003) have stated, the literature on place and destination marketing is shifting towards branding. Skinner (2008) even pointed out that place marketing is turning into place branding. She explains the difference between these two terms: "place marketing" is more concerned with overall management issues and the term "place branding" is more closely linked to a place's promotional activities, creating a distinct identity in the minds of the various target groups. At the same time, traditional marketing is shifting towards relationship marketing and customer relationship management (Gummesson 1999). The principle that it is cheaper to keep hold of existing customers than attracting new ones, as propounded by Rosenberg and Czepiel already in 1984, is observed today in most companies. The author of the current dissertation insists that there is a need to apply this approach to the long-term relationship between a host country and its visitors. Therefore in the current dissertation, place and destination marketing are treated in the context of relationship marketing and the focus is on repeat visitors. The reasons for that are already presented above in the section on the importance of the topic.

The second innovative aspect is the data collection method for segmentation. The rapid diffusion of relationship marketing at an organisational level is caused by the rapid development of information technology solutions enabling the collection and analysis of data on customer behaviour. Unfortunately, similar developments in destination marketing at the country level are quite modest. Information on tourist flows is limited mainly to data on tourist accommodation. Within the last decade, information and communication technologies (ICT) and geographical information systems (GIS) are advancing surveying methods in geography and tourism studies (Ahas et al. 2008). One of the emerging subjects in geographical studies is connected to mobile phone positioning datasets and location-based services (LBS). Mobile positioning data has great potential for applications in space-time behaviour studies addressed in the study of tourism geography. In this dissertation (especially in sections 2.2 and 3.2) the use of the PMP as part of the process of monitoring visitors and providing new data sources for detecting and measuring different segments of visitors will be presented.

The third new approach is related to subjects recognised as visitors and repeat visitors. In the literature, usually only recreation tourists are treated as visitors and especially in the case of repeat visitors (see for example Alegre and Cladera 2009; Oppermann 1998; Mitchell and Greatorex 1993; Milman and Pizam 1995, Gitelson and Crompton 1984; Baloglu 2001, etc.). In Section 1.2 the concept of the repeat visitor will be expanded and therefore in this dissertation other subjects in addition to recreation tourists, for example business visitors, foreign workers and long haul drivers are also treated as visitors and repeat visitors.

The fourth innovation is that in Section 1.1 an improved approach to customer loyalty will be proposed. This new approach enables the development of several loyalty segments instead of the former definitions that only allowed a simple binary choice – loyal or not loyal.

The fifth and the final new approach taken in this dissertation is the new method of segmentation of repeat visitors proposed in Section 1.2. In previous literature, repeat visitors are treated as one homogeneous entity. Only a few authors, for example Oppermann (2000) and Baloglu (2001) went into greater depth with their analysis and put forward more detailed segments to describe repeat visitors. While repeat visitation is an expression of loyalty in this dissertation, different approaches to loyalty-based segmentations will be systematised. Based on that knowledge, a new approach to the segmentation of repeat visitors will be proposed.

In Figure 3 all the new approaches are presented. The dotted line signifies some of the potential practical outcomes. First of all the development of the new segmentation framework should lead to user-driven innovation of the passive mobile positioning method, which means that the PMP method will be refined by users due to the continuously expanding knowledge and the needs raised through the exploitation of the method. This has already happened partially through the development of the new framework, when the emerging needs for the new kind of data had to be satisfied by the development of the PMP method.

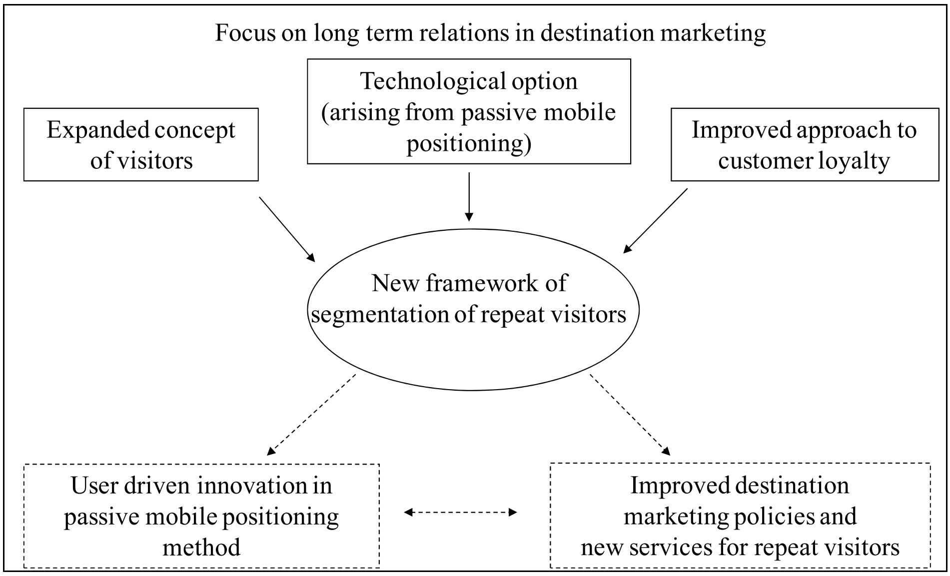

Figure 3. New approaches and potential practical outcomes of the dissertation.
Source: compiled by the author

Further development and use of the new framework of segmentation should lead to the continuous improvement of the PMP method and to the creation of new tools and services targeted at destination managers (user driven innovation). New kinds of data created by PMP tools using the new framework could be used as valuable input for improvements in a destination marketing strategy and for the development of new services for different segments of repeat visitors.

Research methodology and the contribution of individual authors

In this dissertation, repeat visitation is analysed in the customer loyalty context. It is possible to conduct the analysis of customer loyalty at a macro and a micro level. The micro level is linked to attitudes – answering questions as to why a customer is loyal and what kind of variables affect his/her loyalty to a certain brand or destination. The macro or aggregated level observes mainly the behaviour of the entire sample and little emphasis is placed on the understanding of any single behaviour (Jacoby and Chestnut 1978). In recent literature the analysis has usually been conducted at a micro level. In most cases the effect of different factors on recreational tourists' destination loyalty is analysed. In this dissertation the main focus of the analysis is at the macro level, due to the research question: how to divide repeat visitors into subgroups if there is only aggregated data available. However, the dissertation also deals with the micro-level analysis as during the segmentation process the potential motives of the visitors are ascertained and analysed. In addition, as Table 1 shows, all empirical studies looked at in this study differ from each other in terms of their focus and the level of analysis.

Table 1. Level of analysis in the studies included in this dissertation

Study	Level of analysis	Reason
Study 1	Micro	The influence of different factors on loyalty is analysed
Study 2	Macro	Special algorithm of aggregated data is developed
Study 3	Macro / micro	Aggregated behavioural data used for deduction of reasons of behaviour on micro level

Source: compiled by the author

According to Wedel and Kamakura (2000) the method of the segmentation in the referenced studies is a-priori descriptive and is based on general (nationality) and specific (usage frequency, etc.) observable criteria. This is partly due to the descriptive nature of the dissertation. Positivistic post-hoc segmentation methods (for example cluster analysis) are not used because the type and number of segments were determined based on the literature prior to data collection. The literature review composed by Tkaczynski and Rundle-Thiele (2011) reveals that the use of descriptive statistics as a method in segmentation literature is widely used. The selection of segmentation criteria is predetermined by the database used. Following Oppermann (2000), the use of behavioural data for measuring destination loyalty was suggested because the collection of attitudinal data is not necessarily the most practical method, and the aim of the dissertation is also to propose a framework for segmentation of repeat visitors using available general and specific behavioural data. Considering the aim and the nature of the data, only quantitative data analysis is used.

All published studies are co-authored. In the first study the author of the dissertation was the primary author. Professor U. Varblane made suggestions for the improvement of the paper. For the second and third studies a research group was formed. There were four key people in the group: the author of the dissertation, Margus Tiru from Positium LBS, Professor Urmas Varblane and Professor Rein Ahas. In the second study Margus Tiru was the primary author. The author of this dissertation made a contribution to the theoretical overview and helped with the interpretation of the results. In the third study the author of this dissertation was the primary author. Margus Tiru designed the queries for retrieving data from the database, Professor U. Varblane helped with the methodological framework and Professor Rein Ahas described the nature and limitations of the passive positioning method.

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First, I would like to thank Professor Urmas Varblane who has been more than just a supervisor. He has been a great inspiration and a patient adviser, motivator and organiser. His positive attitude helped me to discover the energy to continue on several occasions. I also want to thank my co-supervisor, Professor Rein Ahas, who introduced me to the world of geography and delivered me to destination marketing. I am also very thankful to Professor Jorma Larimo who has acted as a third supervisor and whose very practical comments helped me a great deal.

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1. FRAMEWORK FOR STUDING REPEAT VISITORS BEHAVIOUR – REPEAT VISITATION AS A KIND OF A CUSTOMER LOYALTY

1.1.Systematisation of the concepts of customer loyalty

The term "**loyalty**" originates from the Old French "loialte" and from Latin "lex"or "legalem". Dictionaries trace the word back to the 15th century and offer etymological explanations that loyalty is a faithful adherence to one's promise, oath, word, etc.; faithful adherence to the sovereign or lawful government; fidelity to a superior, or to duty, love, cause, a principle, etc.; a state of being loyal. Loyal is one who is unswerving in allegiance; true to obligations, duty, love, etc.; faithful in allegiance to the sovereign or constituted government. (Webster's…1953; The Oxford…1955)

Loyalty has received scant attention in philosophical literature compared to the attention it has experienced in the literature of more applied fields of marketing, psychology, sociology, political economics, etc. (Ladd 1972; Kleinig 2008). The first influential philosophical work "The Philosophy of Loyalty" was written by Josiah Royce (1908), who defined loyalty as the willing, practical and thoroughgoing devotion of a person to a cause. A man is loyal when, first, he has some cause to which he is loyal; when, secondly, he willingly and thoroughly devotes himself to this cause; and when, thirdly, he expresses his devotion in some sustained and practical way, by acting steadily in the service of his cause.

Fleming (1963) defines loyalty as a person's devotion or sentiment of attachment to a particular object, which may be another person or group of persons, an idea, a duty or a cause. Schaar (1972) defines loyalty as a feeling of attachment to something outside the self, such as a group, an institution, a cause or an ideal. According to him the sentiment carries with it a willingness to support and act on behalf of the objects of one's loyalty and to persist in that support over an extended period of time and under conditions which exact a degree of moral, emotional or material sacrifice from the individual. He states that in the context of political discourse, the concept of loyalty lies between patriotism and obligation: loyalty is cooler in emotional tone, more rational in its bases, and less comprehensive in its object than patriotism; and it is warmer, less rational, and more comprehensive than obligation. Kleinig (2008) states that loyalty can be characterised as a practical disposition to persist with an intrinsically valued (though not necessarily valuable) associational attachment, where that involves a potentially costly commitment to secure or at least not to jeopardise the interests or well-being of the object of loyalty.

Altogether, philosophical treatments of loyalty leave quite a lot of room for interpretation. Loyalty could be treated as a feeling or sentiment (Fleming 1963; Shaar 1972) or as a practical disposition or thoroughgoing devotion (Kleinig 2008; Royce 1908); as a heart of all virtues and as the true willingness (Royce 1908) or as a result of rational choice (Kleinig 2008; Schaar 1972) or even of an obligation (Schaar 1972).

Customer loyalty has received a remarkable amount of attention in literature since 1923 when the pioneering work by Melvin Copeland was published. He proposed that three types of consumer attitude towards the brand could be identified: recognition, preference and insistence (Copeland 1923). Despite that there are hundreds of papers about customer loyalty that have been published during in the almost 90 years since then, yet still no clear conceptual definition of customer loyalty accepted by all has emerged so far. Colombo and Morrison (1989) have stated that only the fantasy of researchers limits the number of different definitions of customer loyalty.

Over time there have been several different concepts used in the literature by different authors in the context of customer loyalty. Those concepts could be classified on the basis of dimensionality or determinism that they assign to the loyalty phenomenon (see Figure 4).

	Unidimensional	Multidimensional
Stochastic	Loyalty as a behavioural concept	–
Determined	Loyalty as an attitudinal concept	Loyalty as a symbiosis of attitudinal and behavioural constructs

Figure 4. Classification of customer loyalty concepts based on dimensionality and determinism. Source: compiled by the author

Customer loyalty as a behavioural concept

Until 1970, theories of behavioural loyalty dominated, highlighting the primary repeat buying behaviour. It was the time when the use of consumer panel data was very popular. These approaches looked at customer loyalty as a stochastic behavioural phenomenon and did not attempt to explain why customers behave loyally. As Odin et al. (2001) concluded, the stochastic approach considers loyalty behaviour as being inherently inexplicable, or too complex to be comprehended. Bass (1974), as one representative of stochastic theories, stated that even if behaviour is caused by some variables, the bulk of the explanation lies in a multitude of variables which occur with unpredictable frequency, therefore, in practice, the process is stochastic.

As stochastic theories did not explain the reasons for behaviour, they offered only operational definitions of customer loyalty. Some theories have considered customer loyalty as a **function of the share of total purchases**. For example Cunningham (1956) has defined loyalt*y as the proportion of total purchases represented by the largest single brand used or by the two largest single brands used.* Womer (1944) showed in his article how to use consumer panel data for loyalty analysis and thereby used brand share of total purchases in the same category as a loyalty measure. Carman (1970) and his associate Stromberg proposed an entropy measure of brand loyalty which also rests on the proportion of purchases going to particular brand. (In the literature several authors use the term *brand loyalty*. In this dissertation it is regarded as a synonym of *customer loyalty*. The author prefers to use the term *customer loyalty* because customers can be loyal to things other than brands.)

Farley (1964) has stated that a customer is brand loyal if the number of different brands consumed is low over a certain time period, which in other words suggests that if the number of different consumed brands is low the proportion of those single brands is high in terms of consumption. This concept has also been used since. Tranberg and Hansen (1986) distinguished loyalty segments based on the number of different brands used, where the segment of "loyals" included consumers who primarily bought one brand. Nowadays, SCR (Share of Category Requirements) and its different derivatives are very popular loyalty measures. They rely on the concept of the share of total purchases (Bhattacharya et al.1996; Danaher et al.2003; Stern and Hammond 2004; Singh et al. 2008).

Other theories considered loyalty as a **function of buying frequency or buying pattern.** Tucker (1964) concluded that brand loyalty is at least in part a function of the frequency and regularity with which a brand has been selected in the past. Following his results and approach several authors have defined loyalty as existing when a subject selected the same brand in four successive trials before any inducement to switch brands was offered (see for example McConnell 1968). Sheth (1968), in developing his factor analytical model, defined brand loyalty as a function of a brand's relative frequency of purchase in time-independent situations, and as a function of relative frequency and purchase pattern for a brand in time-dependent situations (for example if a new product is launched onto the market). Blattberg and Sen (1976) divided consumers into the different loyalty segments based on the proportion of purchases devoted to their favourite brand, on buying frequency and on buying pattern. Loyalty as a tendency to behave repeatedly could also be classified as a buying pattern. For example Reynolds, Darden and Martin (1974–1975) viewed loyalty as a tendency for a person to continue over time to exhibit similar behaviours in situations similar to those he has previously encountered.

Around the same time (the 1960s and 1970s) **probability-based theories** became very popular. These theories defined brand loyalty as a function of the probability of repurchasing the same product. They were related to buying frequency and buying pattern concepts, because both used consumer panel data and the probability of repurchase was possible to calculate if the frequency of former purchases was known. As Lawrence has stated, the origin of statistical learning theory has been attributed to a paper by Estes published in 1950 in the field of mathematical psychology. Estes formalised assumptions about the process of learning as it was understood in the theory of behaviourism. As a mathematical model the stochastic learning model was developed by Bush and Mosteller in their book *Stochastic Models for Learning,* which appeared in 1955 (Lawrence 1975). Kuehn was the first researcher who, in his 1958 dissertation, adopted the Bush-Mosteller model to brand buying behaviour and proposed the initial version of linear learning model of brand loyalty (Jacoby and Chestnut 1978). The linear learning model postulates that the probability of buying a brand at time t depends on the sequence of all past purchases before time t (Kuehn 1962).

Alongside Kuehn, Harary and Lipstein (1962) were developing probabilistic methods for explaining and predicting brand loyalty. They took the approach of Markov chains as a basis by which the probability of the event depends only on the last event and all other events before have no effect. The third direction in the use of probabilistic methods was the use of the Bernoulli model. In the Bernoulli model the brand choice behaviour is assumed to follow a zero-order process. Frank (1962) found some evidence that the probability of purchasing a brand for each buyer remains constant over time and is therefore independent of purchase history. Bass et al. (1984) presented a good overview of studies of stochastic learning models whether they support a fit of zero-ordered, first-ordered or infinite-ordered learning processes or not. Learning models have been in use for several decades. For example in 1991 Wernerfelt used the Markovian approach and defined the consumer as brand loyal if his purchasing pattern depends positively on the last brand purchased. More exactly: a customer is brand loyal if his possibility of buying a particular brand at time t, conditional on identical purchase at time $t-1$, is larger than the corresponding unconditional probability (Wernerfelt, 1991). Bayus (1992) used the probability of purchasing the same brand of home appliance as the one previously owned as a loyalty measure. Later, Yim and Kannan (1999) followed the first-order Markov model to operationalise the reinforcing loyalty behaviour they used in their model.

The strength of behavioural approaches to loyalty is that they rely on real buying behaviour data rather than on the subjective appraisal of customers in terms of what they intend to do. As O'Malley (1998) notes, behavioural measures provide a more realistic picture of how well the brand is doing *vis-à-vis* competitors, and the data generated facilitates the calculation of customer lifetime value, enhances the prediction of purchase probabilities, and assists in developing cost-effective promotions. However, behavioural approaches also have several shortcomings and problems. Jacoby and Chestnut have identified nine major problems, beginning with the lack of attempts to offer a logical-conceptual basis for operationalisation and ending with reliability, validity and sensitivity problems of operational definitions. They also pointed out the inconsistency between behavioural approaches, which means that in one approach the customer is classified as a loyal customer and following another he or she is seen simply as a customer (Jacoby and Chestnut 1978). The above- mentioned strength is also a big weakness. The past might not be the best predictor of the future. Behavioural models describe how customers have behaved, but in changing conditions it is not enough to deduce future behaviour (Day et al. 1979). In addition, it is problematic to be sure that the behavioural data reflects truly loyal behaviour when considering preferences or the that the behaviour was habitual or forced (for example the preferred product was out of stock) or was influenced by promotional activities (Bhattacharya et al. 1996).

Customer loyalty as an attitudinal concept

During the late 1960s the popularity of stochastic models waned and some deterministic views on loyalty were proposed. McConnell (1968) tried to prove that loyalty depends on the perceived quality of the brand and talked about the preferences the subjects of his experiment quickly developed for the brands. Later Day (1969) highlighted that *there is more to brand loyalty than just consistent buying of the same brand – attitudes, for instance.* (Actually, attitude in loyalty definitions was emphasised already in 1923 by Copeland and in 1944 by Guest.)

As was shown in Figure 3 it is possible to divide deterministic approaches, whether they be one or multidimensional ones. If one-dimensional approaches stress the attitude towards the object or behaviour, the multidimensional approaches underline the behaviour which is caused by attitude. Approaches and definitions which could be classified as one-dimensional deterministic equalise attitude with loyalty – i.e. loyalty is a certain attitude or the constancy of the certain attitude. In Table 2 there are some examples of one-dimensional deterministic definitions of loyalty. As the table shows, there are three dominant aspects related with most of them: constancy of preference, commitment or attachment and willingness to sacrifice.

Table 2. Some authors who used attitudinal concept to define or measure customer loyalty

Constancy of preference	Commitment or attachment	Willingness to sacrifice	Other
Copeland (1923)	Assael (1987)	Dwyer et al. (1987)	Fournier (1988) – partnership
Guest (1944)	Oliver (1999)	Morgan and Hunt (1994)	Dupe (2000) – psychological identification
Chaudury (1955)	Dupe (2000)	Wong and Sohal (2002)	Hofmeyr and Rice (2000) – happiness of the marriage
	Park et al. (2010)	Reichheld (2003)	Rundle-Thiele (2005) – allegiance
		Prichard et al. (1999) – resistance to change	Gambetti and Graffigna (2010) – engagement

Source: Compiled by author

As already mentioned, Melvin Copeland (1923) was the first known researcher who defined the highest level of loyalty as brand insistence: the attitude of mind with which the customer accepts no substitute unless it is an emergency. He used the terms *recognition*, *preference* and *brand insistence* to label different levels of loyalty. Guest (1944) defined brand loyalty as the constancy of preference over a period of years in the life of the individual. Chaudury (1995) says that loyalty is a consumer's preference to buy a single brand name in a product class and it is a result of the perceived quality of the brand and not its price.

Assael (1987) defined brand loyalty as a commitment to a certain brand arising from certain positive attitudes. Oliver (1999) has defined loyalty as a deeply held commitment to rebuy or repatronise a preferred product or service in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour. Dupe (2000) has used *social attachment* as similar term to commitment in his approach to customer loyalty. According to him, loyalty is a continued psychological identification and social attachment arising from involvement with a social or political institution, whether a class movement, car brand, sports team, beer, political party, religion, etc. Park, MacInnis, Priester, Eisingerich and Iacobucci (2010) have defined *brand attachment* as the strength of the bond connecting the brand with the self.

Oliver (1999) and Assael (1987) have defined loyalty as a commitment. Several authors have treated commitment as loyalty or as a similar concept to loyalty. For example Dwyer, Schurr and Oh (1987) defined commitment as an enduring desire to maintain a valued relationship. Morgan and Hunt (1994) treated the commitment in the similar way: as an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum effort to maintain it; that is, the committed party believes the relationship is worth working on to ensure that it endures indefinitely. Similarly, Wong and Sohal (2002) have deduced that commitment implies a willingness to make short-term sacrifices to realise longer-term benefits. All these definitions are very similar to Reichheld's approach to customer loyalty. For Reichheld (2003) customer loyalty is the willingness of someone (a customer, employee, friend) to make an investment or personal sacrifice in order to strengthen a relationship. Prichard, Havitz and Hovard (1999) have defined commitment as a tendency to resist change, which could also belong to this group of definitions.

Finally, there are a lot of authors whose approaches to customer loyalty are so distinct that there is no common category for them. For example Hofmeyr and Rice (2000) defined commitment as a state of mind in the form of the happiness of the marriage between the consumer and the brand. Some researchers (e.g. Allen and Meyer 1990; Patrick et al. 2003; Fullerton 2003) have conceptualised commitment as a multidimensional construct. Most of them distinguish at least two dimensions – affective and continuance commitment. The first is based on liking and identification and the second on dependence and switching costs. Rundle-Thiele (2005) defined loyalty as the state or quality of being loyal, where loyal is defined as customer's allegiance or adherence towards an object. Fournier (1998) has conceptualised loyalty as a long-term, committed and affect-laden partnership. In recent literature new concepts have emerged that are similar to loyalty and commitment. For example Gambetti and Graffigna (2010) have analysed different treatments of the concept of *engagement* in marketing literature. They found that in some cases engagement has been defined in academic marketing literature as a synonym for commitment and loyalty.

In the definitions presented above, loyalty was treated as a presumption of the repeat behaviour – as a desire to rebuy. But actually the act of repeat buying was not presumed to take place as proof of the loyalty. When the strengths of the attitudinal approach are quite clear – the occurrence of the attitudinal loyalty should exclude habitual or forced repeat behaviour – then with weaknesses things are less clear. Some authors declare that the attitudinal loyalty approach lacks power in predicting actual purchase. Even a strong attitude towards a brand may provide only a weak prediction of whether or not the brand will be bought on the next purchase occasion because any number of factors may co-determine which brand will be selected (Uncles et al. 2003; Mellens, Dekimpe and Steenkamp 1996). Mellens, Dekimpe and Steenkamp (1996) have added that attitudinal measures are often data observed at a single point in time and therefore are incidental in nature. On the other hand there is a plethora of authors who claim that there is a link between attitude and behaviour (e.g. Kraus 1995; Baldinger and Rubinson 1996; Bandyopadhyay and Martell 2007). Some authors suggest that it is not the attitude towards the object, but the attitude towards performing repeat behaviour that has the predictive power (Ha 1998; Bennett and Rundle-Thiele 2002).

Customer loyalty as a symbiosis of attitudinal and behavioural constructs

Day (1969) introduced the two-dimensional concept of brand loyalty, which stated that loyalty should be evaluated with both behavioural and attitudinal criteria. In his study he showed that 30 per cent of customers who behaved loyally did not have a very or extremely favourable attitude towards the brand. Nowadays the majority of researchers agree that loyalty is a multidimensional and determined construct. There are two dominating and most-often cited works in this field. The most widespread supported definition of customer loyalty in marketing literature is proposed by Jacoby and Kyner (1973). The approach they proposed is as follows: brand loyalty is *"(1) the biased (i.e. non-random),(2) behavioural response (i.e. purchase), (3) expressed over time, (4) by some decision-making unit, (5) with respect to one or more alternative brands out of a set of such brands and (6) is a function of a psychological (decision making, evaluative) process"*. (Jacoby et al. 1973:2) Even though there are critics of this approach (see for example Tarpey 1974) it is the most popular and most cited conceptual definition of loyalty until now. Mellens, Dekimpe and Steenkamp (1996) have very profoundly analysed the definition proposed by Jacoby and Kyner. They found that by this definition the following condition must be satisfied (Mellens et al.1996).

(1) Brand loyalty is a biased process which means that it should not follow the zero-order process.
(2) Brand loyalty entails the actual purchase of a brand. Verbal statements of preference are not sufficient to ensure brand loyalty.
(3) If the behaviour is biased and expressed over time, this suggests that one should not only consider the number of times a specific brand is purchased during that period, but also the purchase pattern over successive purchase occasions.
(4) A decision-making unit does not have to be an individual or the actual purchaser. Other members of a household or a firm may also be involved in the decision-making process.
(5) A consumer may actually be loyal to more than one brand but in order to have brand loyalty, there must be an opportunity to choose from alternatives.
(6) Brand loyalty is a function of psychological process, which means that commitment towards the brand is an essential element of brand loyalty.

The second very influential approach to customer loyalty in marketing literature is that proposed by Dick and Basu (1994). They defined loyalty as the relationship between relative attitude and repeat patronage (see Figure 5).

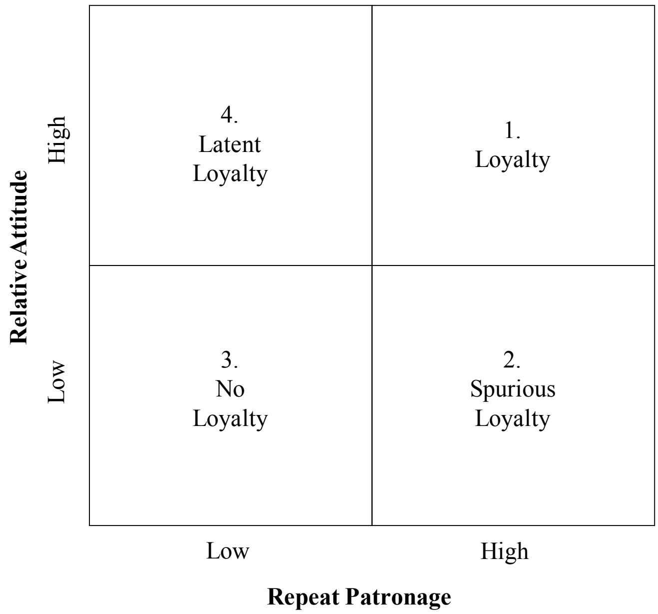

Figure 5. Loyalty as the relationship between relative attitude and repeat patronage (Dick and Basu 1994)

Following Dick and Basu (1994) the relative attitude indicates the degree of attitudinal differentiation. In the case of high relative attitude, the customer perceives the significant difference of attitude towards a target object compared with other entities. As the occasions when consumers patronise entities for which they have negative attitudes are rare, they take into consideration only positively valenced attitudes. By that approach loyalty exists only in the case of high relative attitude and high repeat patronage (quadrant 1 in Figure 5). Spurious loyalty (quadrant 2) is characterised by high repeat patronage and low relative attitude which could be caused by low involvement, social influences, situational factors, etc. In quadrant 4 in Figure 5 there is latent loyalty with high relative attitude but low repeat patronage (due to the other non-attitudinal influences). In the case of low relative attitude combined with low repeat patronage (quadrant 3) there is no loyalty.

Both Jacoby and Kyner (1973) and Dick and Basu (1994) stress that true loyalty lies in quadrant 1 in Figure 5. Rowley (2005) has tried to divide the loyal in quadrant 1 into four categories: *Captive, Convenience-seekers, Contended* and *Committed*. But if one is to read the descriptions of those categories, one should deduce that they can't all lie in this quadrant. *Captives* are described as those with a neutral attitude who continue to purchase a product because they have no choice. *Convenience-seekers* are described as those with no particular attitude to the brand who make routine, low involvement purchases. Both described categories fit into quadrant 2 as examples of spurious loyalty. In the case of *Contended* the description contains a positive attitude in relation to the brand but in this case the repurchase rate could be higher. This category fits into quadrant 4 or somewhere between quadrants 4 and 1. The only category that fits in quadrant 1 is *Committed*. This is positive in both attitude and behaviour. Story and Hess (2006) have also seen commitment as the strongest form of loyalty, as a true loyalty, where customers are loyal both attitudinally and behaviourally.

Universal integrated approach of customer loyalty

Based on approaches presented above, one could say that there exists no one universal definition of customer loyalty. Stochastic theories cover only quadrants 2 and 4 in Dick and Basu's framework. Attitudinal approaches cover only quadrants 1 and 2 and two-dimensional approaches are aimed only at quadrant 2 in the Dick and Basu's framework. For example, if one adheres to the most cited customer loyalty definition proposed by Jacoby and Kyner (1973), one should believe that the attitudinal definitions proposed by Oliver (1999) or Dupe (2000) are incorrect, because they do not demand the occurrence of real repeat behaviour as claimed in the second condition of the definition proposed by Jacoby and Kyner. The author of this dissertation believes that none of approaches presented above describes the concept of loyalty as a whole. Those approaches and definitions describe different kinds of loyalty – attitudinal or behavioural sorts of loyalty. To get a universal approach to loyalty, the author of this dissertation proposes that the definition proposed by Jacoby and Kyner (1973) and the approach proposed by Dick and Basu (1994) should be modified.

There are two problems with Jacoby and Kyner's definition. The first is related to condition number two, which requires an actual purchase and therefore excludes purely attitudinal approaches of customer loyalty. The second problem is the required set of alternative brands mentioned in condition number five, which is not in accordance with some aspects of the philosophical nature of loyalty. Therefore an improved universal definition of customer loyalty is proposed by the author as follows:

Customer loyalty is the (1) biased, (2) behavioural response (primary or secondary), (3) expressed over time, (4) by some decision-making unit, (5) with respect to one or more alternatives and (6) is a function of a psychological (decision making, evaluative) process.

Compared to the initial definition, conditions 1, 3, 4 and 6 remained unchanged – loyalty is a biased behavioural response which is expressed over time by some decision making unit and despite being either a feeling or rational choice it is always a function of (affective or cognitive) psychological process. The first significant difference occurs at the second condition which continually requires a behavioural response but not exclusively only in the primary form – nowadays firms are also able to evaluate the secondary behaviour in the form of doing word-of-mouth marketing for the company. Therefore if a customer somehow expresses to others his/her very positive attitude, psychological identification, allegiance or commitment towards something (the object of his/her loyalty), one should say that he/she is loyal. This also conforms to the philosophers' view which treated loyalty as a feeling or sentiment of devotion. Even if Kleinig (2008) treated loyalty as a practical disposition, he claimed that one is loyal if he at least does not jeopardise the interests or well-being of the object of loyalty.

The second significant difference is concerned with condition 5 which does not require the existence of an opportunity to choose among alternatives any more. Kleinig (2008) asserts that a third party is not always needed in order to be loyal to something but there should be a cost or challenge related to it. He puts forward an example when the loyal friend will simply manifest the loyalty by overcoming the inconvenience of having to get up at 2 a.m. to help his friend whose car has broken down. No third party is involved, but there is a cost related. Schaar (1972) pointed out that totalitarian states of the twentieth century have demanded of their subjects a degree of concentrated loyalty towards national political leaders, institutions and policies. Therefore customers can be committed to one thing even if there is no alternative and if customers are forced to behave loyally – there exists forced loyalty.

Additionally, the specific object of loyalty is not brought up any more. Indeed, in the literature the term *brand loyalty* is used often but according to the Dupe and the philosophers' definitions shown above, it is possible to be loyal to anything. Hence a high variety of terms like *store loyalty, service loyalty* and *destination loyalty* are used in the literature. For example *source loyalty* is defined as the degree to which retailers foresee the company as a wanted supplier in the future (Biong 1993). Therefore, the subject of this dissertation – repeat visitation – should be interpreted as a behavioural response to destination loyalty. The phenomenon of destination loyalty and the surrounding context is discussed in more detail in Section 1.2 of this dissertation.

Dick and Basu's approach has also two problems. Both of them are related with the axes of relative attitude. First, in the opinion of the author it is incorrect to use relative attitude as a preconditioning factor in defining loyalty. If to analyse the philosophical definitions of loyalty, it reveals that most commentators assert that loyalty is addressed to some particular object of loyalty (Ladd 1972; Royce 1908; Fleming 1963; Schaar 1972). As mentioned before, Kleinig (2008) has pointed out that there is no third party needed for loyalty. He has also stated that in most contexts the privileging of an object of loyalty does not require treating others badly: *loyalty to one's children need not mean the disparagement of others' children*. Therefore one can deduce that loyalty is affected by the object itself and not by the comparison of the object with other entities.

Therefore, instead of relative attitude, there should be attitude towards the object of loyalty used on this axes.

The second problem is related to the scale of the axes. In the original version the scale is from low to high relative attitude (Dick and Basu 1994). But by most definitions of attitude it should reflect evaluations of objects on a dimension ranging from positive to negative (Fabrigar et al. 2005). Even in the case of relative attitude, "high" and "low" do not show the valence of the evaluation. In their article, Dirk and Basu mentioned that they take into consideration only positively valenced attitude, but on the figure the axes label is misleading. Therefore author of this dissertation proposes that the name of the axes should be the *strength of the positive attitude*, which ranges from strong or high to weak or low. Now it is logical that if a person has a negative or very negative attitude towards the object, his/her strength of positive attitude cannot be high and should be low.

Based on the proposed renewed definition and previously described approaches of customer loyalty it is possible to point out two general types of customers – behaviourally and attitudinally loyal. Behaviourally loyal customers act loyally but have no emotional bond with the brand or the supplier. In the case of attitudinal loyalty an emotional bond has emerged between the customer and the brand. By this type of loyalty it is not important what the customer does but what he/she feels. Jones and Sasser accordingly call these two kinds of loyalty false or true long-term loyalty (Jones et al. 1995). Hofmeyr and Rice (2000) divide customers into loyal (behavioural) or committed (attitudinal) groups. As Dick and Basu (1994) have showed, these two concepts (behavioural and attitudinal) do not exclude each other. A loyally behaving customer does not have to be attitudinally loyal, but he or she can be.

There are several reasons why customers behave loyally without having any emotional bond with the supplier (in Dick and Basu's (1994) approach it was called *spurious loyalty*). First of all they could be **forced to behave loyally** if the poor financial status of the customer limits his or her selection of goods (Grönholdt et al. 2000), there is no alternative brand, or there are exit barriers created by the supplier (Buttle 2004). Secondly, in the case of **an inert loyalty** customers do no switch because of comfort, habit and low involvement – for example if brand differences are not great or important to the customer (Wernerfelt 1991), if the customer believes that the existing brand is better than another (Oliver 1999), or if the customer feels that the risk of choosing other brands could be worse than the existing one (Hofmeyr et al. 2000). Thirdly, in the case of **functional loyalty**, the customer has a very rational reason to behave loyally. For example Wernerfelt (1991) points out cost-based loyalty. Young and Denize (1995) concluded that clients remain in relationships because of the social and/or economic benefits they receive. Lewis (2004) and Kivetz, Urminsky and Zheng (2006) have shown how repeat behaviour is determined or influenced by rewards. Also, calculative commitment (Geyskens et al.1996) and continuance commitment (Allen and Mayer 1990; Fullerton 2003) are quite similar or closely related constructs to functional loyalty.

Attitudinally loyal customers are also divisible. By the treatment set out by Oliver (1999) it is possible to distinguish three phases of attitudinal loyalty. In the case of **affective loyalty**, the customer has some positive feelings aroused towards the brand. It is because of this that the customer is satisfied. If a customer has an inner urge aroused to prefer a concrete brand it is called **conative loyalty**. This bond is much stronger than in the case of affective loyalty. **Active loyalty** is the case where a customer has an inner urge to prefer a concrete brand and he or she is ready to overcome any obstacles to get this brand. It's an enduring desire to maintain a valued relationship. This is congruent with the previously mentioned definition proposed by Reichheld: loyalty is a willingness of the customer to invest in or donate to the strengthening of the relationship with the supplier (Reichheld 2003). Finally, in the case of **latent loyalty** (Dick and Basu 1994) the customer has positive feelings towards the object but expresses it through secondary behaviour rather than through repeat buying. In Figure 6 all the previously mentioned loyalty types are combined.

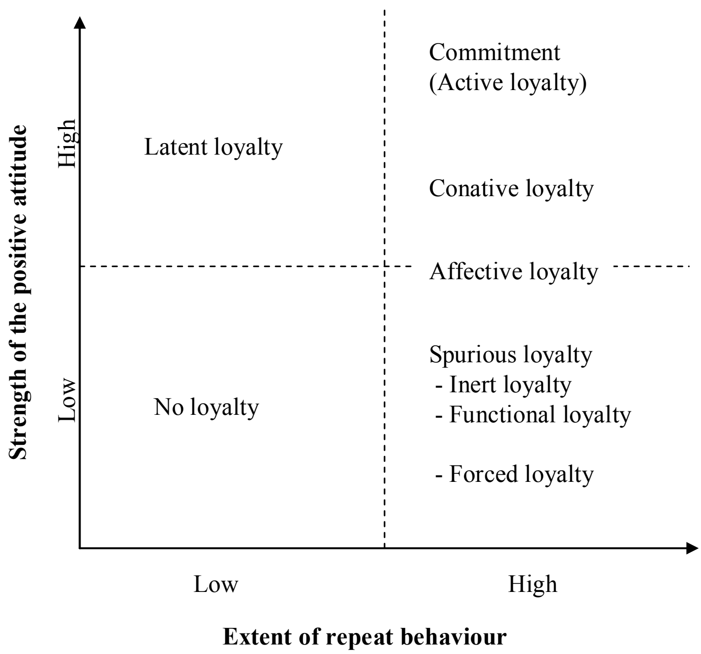

Figure 6. Typology of loyalty.
Source: compiled by the author

Dick and Basu's treatment forms the basis of this figure with two axes showing the strength of attitudinal or behavioural loyalty. The location of different loyalty types in Figure 5 is relative. They are somewhat differentiated by the strength of attitude but not differentiated by the extent of repeat behaviour – with the exception of latent loyalty all are located on the right-hand side of the figure. Different authors have not specified the extent of repeat behaviour in the case of different types of loyalty. Therefore the locations of different types of loyalty in Figure 6 are conditional.

1.2. Segmentation of repeat visitors based on customer loyalty types

Whereas repeat visitation is the behavioural expression of destination loyalty, it is obligatory to clarify first the concept of destination loyalty. There is no exact and well formulated definition for destination loyalty. As with definitions of customer loyalty, approaches of destination loyalty are also divisible into three categories: attitudinal, behavioural and composite (see Table 3).

Table 3. Definitions of destination loyalty

Attitudinal definitions	Composite definitions	Behavioural definitions
Intention to revisit (Kozak 2001; Petrick et al. 2001; Jang et al. 2007)	Interest to revisit and likelihood of revisit (Milman and Pizam 1995)	Repeat visitation (Fuchs and Reichel 2011; Taks et al. 2009; Wang 2004; Shani et al. 2009; Niininen et al. 2004)
Willingness to recommend (Chen and Gursoy 2001)	Psychological attachment and behavioural consistency (Baloglu (2001) Backman and Crompton (1991), Niininen and Riley (2003)	
Willingness to recommend and intention to revisit (Yoon and Uysal 2005, Vassiliadis 2008, Prayag 2008 and Morais and Lin 2010)	Lifelong returning caused by liking (Oppermann 1999; 2000)	

Source: compiled by author

In the literature numerous authors (see for example Kozak 2001; Petrick et al. 2001; Jang et al. 2007) treat destination loyalty as an intention to revisit the destination, which relates to the above mentioned attitudinal loyalty. Chen and Gursoy (2001) define destination loyalty as a level of a tourist's perceptions of a destination as a recommendable place which, according to Reichheld (2003), also shows attitudinal loyalty. Yoon and Uysal (2005), Vassiliadis (2008), Prayag (2008) and Morais and Lin (2010) have used both, willingness to recommend and intention to revisit, to describe destination loyalty.

Some authors (see for example Hernandez-Lobato et al. 2006; Kyle et al. 2004; Lee et al. 2007, Petrick.2004) have made distinctions between attitudinal and behavioural destination loyalty. Milman and Pizam (1995) have similarly distinguished interest of revisit (attitudinal) and likelihood of revisiting the destination (behavioural loyalty). Baloglu (2001), Backman and Crompton (1991) and Niininen and Riley (2003) have, similarly to Dick and Basu (1994) used a multidimensional concept, combining psychological attachment and behavioural consistency as dimensions of loyalty. Oppermann (1999; 2000) also stated that destination loyalty is a lifelong returning behaviour of visitors caused by liking and positive attachment to the destination.

Finally, some researchers focus only on repeat visitation, investigating the antecedents and the factors leading visitors to return to the same destination (for example Fuchs and Reichel 2011; Taks et al. 2009) or the consequences of repeat visits (for example Wang 2004; Shani et al. 2009). They do not link repeat visitation to the term loyalty. As Niininen, Szivas and Riley (2004) stated when commenting their results "Whether this implies loyalty or not is a matter of interpretation but it does reaffirm the idea of repeat behaviour as being important".

There are always two components in definitions of destination loyalty and repeat visitation – **visitor** as a subject and **destination** as an object – treated in the context of customer loyalty. On the Figure 7 destination loyalty is presented as an overlapping area of three concepts: visitor, destination and customer loyalty. Surprisingly, *visitor* and *destination* are not such simple constructs as they seem at first glance. Almost all of the above-mentioned authors have used the terms "visitor" or "tourist" in their approaches. Some of them (Vassiliadis 2008; Kotler et al.1999) have even used these terms as synonyms. If we follow their texts more carefully, we discover that the majority of the authors have used the terms "visitor" and "tourist" mainly only in the context of leisure and recreation. Actually, the terms "visitor" and "tourist" are much wider concepts. Geographers and researchers of tourism-related fields accept definitions proposed by the World Tourism Organization (UNWTO) which state the following (UNWTO 2010):

A visitor is a traveller taking a trip to a main destination outside his/her usual environment, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited. A visitor is classified as a tourist if his/her trip includes an overnight stay.

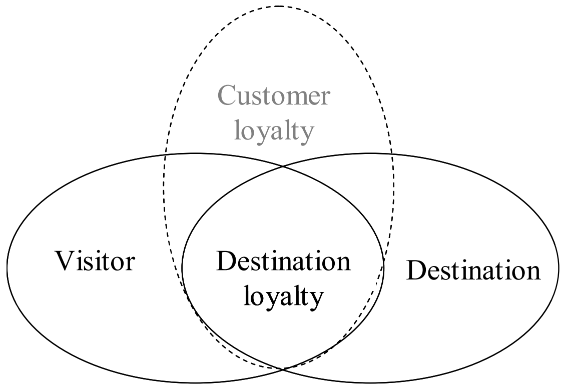

Figure 7. Visitor and destination as two core components of destination loyalty
Source: compiled by the author

Relying on those definitions, the UNWTO recommends the classification of travellers as visitors or tourists if the purpose of their visit is: business, holiday, leisure and recreation, visiting friends and relatives, education and training, health and medical care, religion, shopping or transit. In addition, nationals residing abroad should be treated as inbound visitors. However, the UNWO does not recommend that different kinds of workers (seasonal, short-term and long-term), students and long-term patients with families, diplomats and military personnel should be treated as visitors or tourists (UNWTO 2010). In the context of destination marketing where tourists are the main target segment, this classification is quite suitable. But in the place marketing context, where the target is also to make the place attractive to investors, foreign workers and students, new residents and other segments, this classification is not sufficient (see Figure 8).

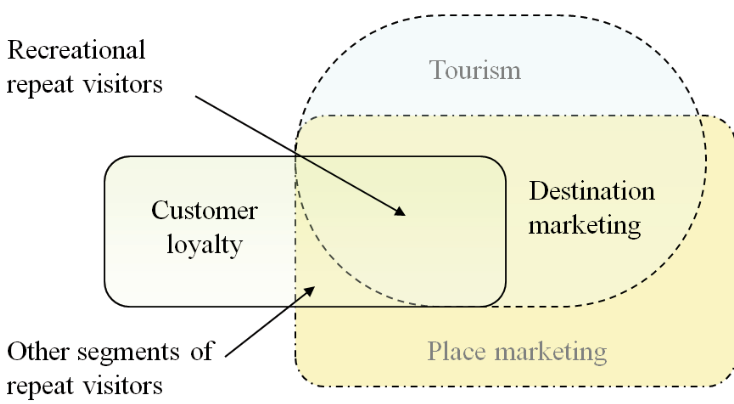

Figure 8. Segments of repeat visitors in the context of place and destination marketing.
Source: compiled by the author

Also it would be very useful for destination and place marketers if satisfied patients, diplomats, military personnel and transport crews would generate positive word-of-mouth abroad. Therefore, in this dissertation, all inbound travellers' segments that are somehow useful in the place or destination marketing context are treated as (inbound) visitors (see Figure 9).

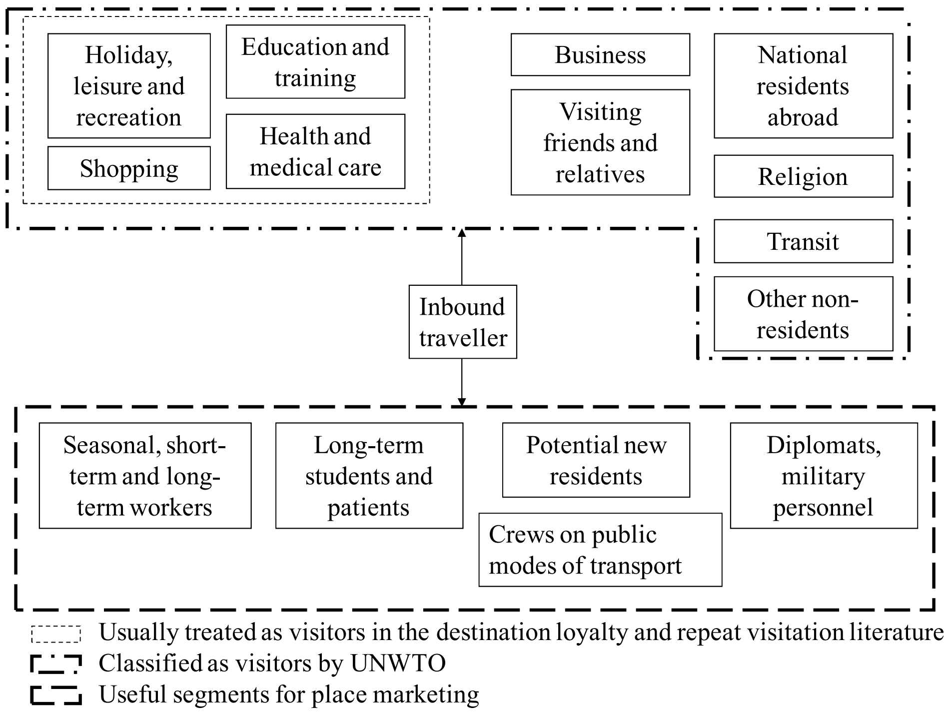

Figure 9. Segments treated as visitors in this dissertation.
Source: compiled by the author

A local tourism destination is defined by UNWTO (2007) as a physical space in which a tourist spends at least one overnight stay. It includes tourism products such as support services and attractions and tourist resources within one day's return travel time. It has physical and administrative boundaries defining its management, and images and perceptions defining its market competitiveness. Local destinations incorporate various stakeholders, often including a host community, and can nest and network to form larger destinations. Destinations could be on any scale, from a whole country, a region or island, to a village, town or city, or a self-contained centre (UNWTO 2007). Buhalis (2000) states that a destination is as a mix of all locally-offered products, services and experiences. Kozak and Rimmington (1998) note that tourist destinations are composed of attractions, facilities and services, infrastructure, hospitality and cost variables. Lichrou, O'Malley and Patterson (2008) suggest that a destination must be not treated as a static place concerning only physical aspects. A destination is a dynamic phenomenon, including also immaterial aspects (myths, culture, etc). Saraniemi and Kylanen (2011) and Framke (2002) have investigated in great depth the nature of the destination. Saraniemi and Kylanen (2011) showed that destinations could be viewed as anything – as a geographical area, a commodity, a unit of action, a socio-culturally constructed space, a set of institutions and actions, and so on. Framke (2002) concludes that a destination is a place with identity generated by activities, interests, infrastructure and attractions related with it. He also claims that a destination could be anything that exists somewhere in a certain time and offers any social activity to a tourist. The meaning of the destination depends on the purpose of the visitor. Thus, it is possible to conclude that a destination could be:

- a geographical area (city or country) – for example Paris
- a natural or artificial attraction – for example Disneyland in Paris
- an event – for example any concert or sport event in Paris.

In this dissertation, a destination is treated as a geographical area and therefore the definition proposed by UNWTO without the requirement to spend at least one overnight stay is most appropriate. The requirement of an overnight stay is not necassary because in this dissertation the focus is not only on tourists but on all visitors listed in Figure 9. Nevertheless, there is always a possibility to get more specific and choose an attraction or event as the destination. In those cases the selection of visitor segments should also be more restricted. In conclusion, combining the definition of customer loyalty arrived at in paragraph 1.1 with the concepts of destination loyalty, visitor and destination, it is possible to conclude the following:

Destination loyalty is the (1) biased (2) repeat visitation or secondary behaviour, (3) expressed over time, (4) by some decision-making unit related with inbound traveller(s), (5) with respect to one or more geographical area or other type of destination and (6) is a function of a psychological (decision making, evaluative) process. Therefore:

(1) Destination loyalty is a biased process which means that it should not follow the zero-order process.
(2) Destination loyalty entails actual repeat visitation and/or secondary behaviour in any form whereby an individual expresses his or her very positive attitude, psychological identification, allegiance or commitment towards the destination to others.
(3) If the behaviour is biased and expressed over time, this suggests that one should not only consider the number of times a specific destination is revisited during that period, but also the revisiting pattern.

(4) The decision-making unit does not have to be an individual or the actual visitor or group of visitors. Other members of a household or a firm may also be involved in the decision-making process.
(5) The decision-making unit may actually be loyal to different kinds of destinations and to several destinations at the same time.
(6) Despite being either a feeling or a rational choice it is always a function of (affective or cognitive) psychological process.

In the following, all loyalty types presented in Figure 6 (in Section 1.1) will be converted to the destination loyalty context and the following classification of repeat visitors will be proposed by the author.

Commitment, conative and affective loyalty. Oppermann (2000) has stated that destination selection and trip planning are highly involved decisions and therefore spurious loyalty is unlikely to occur. This statement is supported by research carried out by Hernandez-Lobato and others (2006) and Kaplanidou and Vogt (2007), which revealed that the loyal behaviour is determined strictly by attitudinal loyalty or by the intentions to revisit. Kozak (2001) and Alegre and Cladera (2009) found satisfaction with previous visitations to be a very important factor in the repeat visitation intention. Morais and Lin (2010) found that repeat visitors' intentions to patronise a destination were primarily affected by destination attachment – by cognitive and emotional connections towards a destination. Oppermann (1999; 2000) divided loyal visitors based on visitation frequency into three sub segments: somewhat loyal, loyal and very loyal. He called very loyal visitors those who had visited Australia more than six times during the eleven year period – meaning that the average gap between visits was no more than 2.2 years. Loyal visitors visited Australia four or five times during that period (the average gap between visits was 2.2 to 3.5 years) and somewhat loyal visitors to Australia visited two or three times during that period (the average gap between visits was longer than 3.5 years). As Oppermann (1999) linked the frequency of revisits to attitude (liking and attachment), it is possible to draw a parallel with Oliver's (1999) approach and treat very loyal visitors as committed, loyal visitors as conatively loyal, and somewhat loyal visitors as affectively loyal customers.

Spurious loyalty. Contrary to Oppermann (2000), the author of this dissertation believes that different types of spurious loyalty also exist among repeat visitors. For example, Oppermann (1998), Mitchell and Greatorex (1993); Milman and Pizam (1995), Gitelson and Crompton (1984) and Baloglu (2001) have found that one reason for repeat visitation is familiarity with the destination. This is related to risk avoiding behaviour – an even slightly dissatisfied tourist could come back to the same destination because it is still less risky than going somewhere else. An unknown destination could hide bigger risks than a familiar destination holds. According to this, and the approach by Hofmeyr and Rice (2000) presented Section 1.1, the appearance of the repeat visitation should be expressed as the existence of ***inert loyalty***.

In this dissertation it is proposed that those described as ***functionally loyal*** could be visitors who have a certain reason to revisit the destination (country) whilst at the same time having no considerable positive attitude towards the destination. For example they could revisit a country due to certain regular events they are interested in or due to shopping trips they undertake with certain regularity, or business travellers who regularly have business to do in a specific country. McKercher and Guillet (2011) have also raised the question as to whether the repeat visitor is loyal to the destination or to the brand of resort, or the style of vacation ("sea and sun", "skiing", "urban"). ***Forced to be loyal*** could be for example some very special types of workers – long distance lorry drivers or sailors, for example. It is very likely that repeat visitations of this segment are not associated with a positive attitude.

Latent and no loyalty. Oppermann (1999) has divided people who exhibit no repeat visits into the following groups: non-purchasers, disillusioned, unstable and disloyal. The first group also covers latently loyal visitors. The others are related to not loyal visitors. To conclude, the different loyalty segments of repeat visitors are presented in Figure 10.

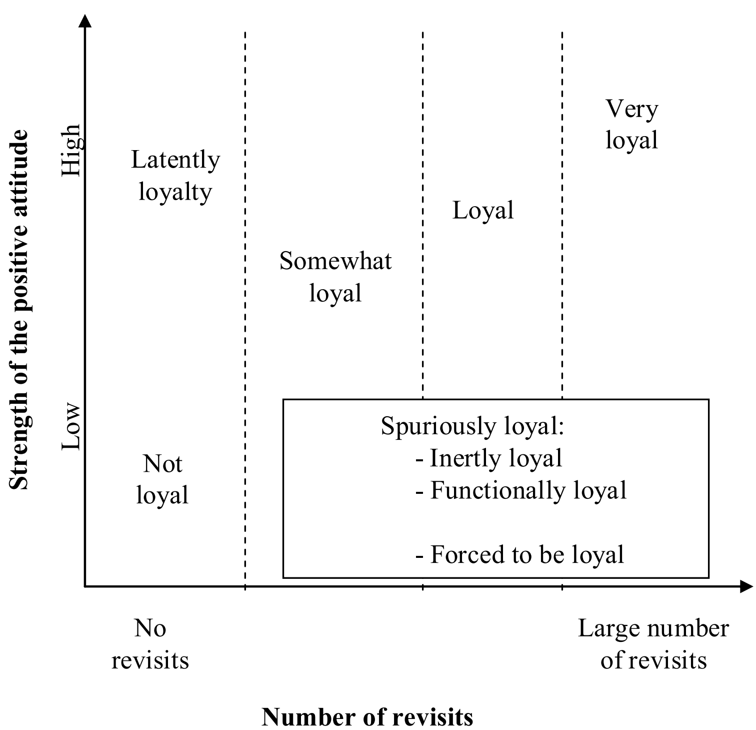

Figure 10. Segments of visitors based on loyalty
Source: compiled by the author

Compared with Figure 6, the placement of the different segments in Figure 10 are more exact. That is because Oppermann has specified the frequency of repeat behaviour for different levels of destination loyalty. By combining the segments presented in Figure 10 with those presented in Figure 9, the following consistency of loyalty segments are revealed (see Table 4).

Table 4. Allocation of visitors into loyalty segments

Loyalty segment	Visitors type
Very loyal **Loyal** **Somewhat loyal** **Inertly loyal** **Latently loyal** **No loyal**	Holiday leisure and recreation
	Other nonresidents
	National residents abroad
Functionally loyal	Education and training
	Shopping
	Health and medical care
	Business
	Visiting friends and relatives
	Religion
	Potential new residents
	National residents abroad
	Seasonal short and long-term workers
	Long-term students and patients
Forced to be loyal	Transit
	Crews on on transport
	Diplomats military personnel

Source: compiled by the author

As can be seen in Table 4, different types of visitors can be allocated to the several loyalty segments. Holiday, recreation and leisure visitors can, based on frequency of revisits, be divided into very loyal, loyal, somewhat loyal, inertly loyal, latently loyal and not loyal segments. Visitors with a special reason for revisits such as education, shopping or working are treated as functionally loyal visitors. And there could be visitors who have to revisit the destination as crews on transport, diplomats or military personnel – they are treated as forced to be loyal visitors. The allocation presented in Table 4 is not without problems and certainly needs improvement in future research. For example, business travellers are considered to be functionally loyal visitors, having business interests in the destination. But business travellers can also be allocated into the forced to be loyal segment if they are assigned to meet company clients, for example. There could also be other smaller and more specific groups of repeat visitors that are not presented in the table. For example, loyal visitors to certain events could be treated as functionally loyal because the reason for their revisiting the area is the certain regular event taking place. Therefore, the author of this dissertation proposes two ways of determining the destination loyalty segments (see Figure 11.).

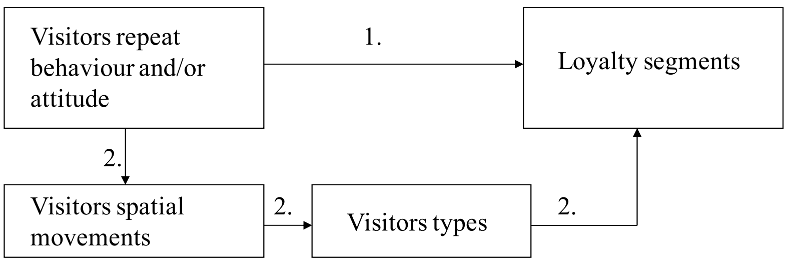

Figure 11. Direct (1.) and indirect (2.) ways of determining loyalty segments.
Source: compiled by the author

In the case of direct determination (labelled with a 1 in Figure 11), different behavioural and attitudinal variables to measure destination loyalty should be used for identifying loyalty segments. In the case of indirect determination (labelled with a 2 in Figure 11), firstly based on the repeat behaviour and spatial movements data, the types of visitors will be identified and after that based on Table 4 the belonging to the certain loyalty segment will be deduced.

2. METHODOLOGY OF THE SEGMENTATION OF REPEAT VISITORS USING MOBILE POSITIONING DATA

2.1. Characteristics of repeat visitation for detecting destination loyalty segments

Tkaczynski, Rundle-Thiele and Beaumont (2010) proposed the use of a two-step approach to segmentation: the first step should contain an identification of different relevant variables for segmentation, and in the second step, a survey and data analysis for the identification of segments should take place. In this section of the dissertation all possible variables to identify any kind of visitors or loyalty segments are under consideration. The methods of survey are dealt with in Section 2.2 and the methods of data analysis in Section 2.3.

There are plenty of methods that can be used to measure loyalty. Back in 1978, Jacoby and Chestnut described 53 methods to measure loyalty (see an overview in Jacoby et al.1978). All of them are rather complicated and contain numerous and serious problems. Jones and Sasser (1995) have proposed three measures of loyalty; the first one measures behavioural and other two attitudinal loyalty.

- **Customer's primary behaviour** – recency, frequency and amount of purchase;
- **Customer's secondary behaviour** – customer referrals, endorsements and spreading the word (WOM);
- **Customer's intent to repurchase** – is the customer ready to repurchase in the future.

In the case of primary behaviour the most common loyalty measure used by most major market researches is SCR (see Section 1.1. p.22), or any modification of that (Bhattacharya et al.1996). Li, Petrick and Zhou (2008) have stated that in the case of attitudinal loyalty, different scales are used to measure commitment, attachment, involvement or any other construct that in most cases are the same subject under different labels. Rundle-Thiele (2005) has proposed six factors to measure loyalty: attitudinal loyalty, resistance to competing offers, behavioural intentions, propensity to be loyal, complaining behaviour and behavioural loyalty.

In tourism literature, several authors have adopted a similar approach to Jones and Sasser (1995). Oppermann (2000) measured the number of revisits. Petrick (2004) measured the number of revisits, WOM and intention to revisit. As already mentioned in Section 1.2, Kozak (2001), Petrick et al. (2001) and Jang and Feng (2007) measured an intention to revisit the destination. Chen and

Gursoy (2001) used tourists' willingness to recommend a destination as an indicator of their loyalty. Yoon and Uysal (2005), Morais and Lin (2010), Prayag (2008) and Vassilisadis (2008) have used revisiting intention or willingness to repeat visits and willingness to recommend a destination as measures of a visitor's loyalty. Valle et al. (2006) have successfully tested a hypothesis that revisiting intention and willingness to recommend are adequate measures of destination loyalty intention. Li, Petrick and Zhou (2008) added that duration of stay and intensity (time devoted to purchase, use or participation certain activity) have also been used in leisure or tourism studies for the measurement of behavioural loyalty.

Due to the difficulties in measuring attitudinal loyalty (it usually presumes costly and complicated inquiries), behavioural measures are generally utilised more often to measure loyalty (Petrick 2004). The second problem is that the attitude does not always predict the real behaviour (in the case of latent loyalty). For example, despite the fact that Kyle et al. (2004) conceptualised psychological commitment as the attitudinal component of loyalty and an antecedent to behavioural loyalty, Kaplanidou and Vogt (2007) found that intention to revisit explains only 27 per cent of variance in revisiting behaviour. In the study of Hernandes-Lobato and others (2006), attitudinal loyalty explained only 17 per cent of variance in behavioural loyalty. Oppermann (2000) stated that while a composite (behavioural + attitudinal) measurement of loyalty could be the most comprehensive, it is not necessarily the most practical, since the measurement of attitudinal loyalty requires very lengthy questionnaires. Therefore he suggested the use of behavioural characteristics of destination visitation as a tool to measure destination loyalty. In more detail he proposed two characteristics: the number of visits and the frequency of revisits. He presumed that since destination selection and trip planning are highly-involved decisions, spurious loyalty is unlikely to occur and therefore most behaviourally loyal visitors are emotionally loyal at the same time. In addition, in brand loyalty studies it is not rare for authors to declare that they follow the multidimensional conceptual loyalty definition proposed by Jacoby and Chestnut but actually they use behavioural measures – for example DuWors and Haines Jr. (1990) used event history analyses or Yim and Kannan (1999) used SCR to assess the loyalty of consumers.

While this dissertation analyses destination loyalty on a macro level and partly due to the difficulties in measuring attitudinal loyalty mentioned above, only behavioural measures of destination loyalty will be considered in this dissertation. However, based on Section 1.2 of this dissertation, it should be said that repeat visitation could, in addition to the existence of an attitudinal (the customer likes the destination) loyalty, also express functional (it is somehow useful for the customer to visit the destination), inert (the customer is used to visiting a familiar and safe destination) and forced destination loyalty (the visitor is executing a task). Therefore, this dissertation will attempt, based on behavioural measures, to deduce the motivational and attitudinal reasons for repeat visitation. As a conclusion, the following behavioural indicators could be used as measures of loyalty:

- Number of revisits; Oppermann (2000), Petrick (2004)
- Frequency of revisits (Oppermann 2000)
- Sequence or pattern of visits (Oppermann 1999)
- Number of destinations visited (Patrick et al. 2003)
- Frequency of revisits compared to revisits to other destinations (Patrick et al. 2003)
- Length of stay (Li et al. 2008)
- Recency of revisits (Jones and Sasser 1995)

For indirect determination, some spatial movement indicators could be useful for detecting visitor types. Lew and McKercher (2006) have proposed different territorial and linear path models of tourist behaviour in local destinations. Territorial models show variations in the distances that tourists venture from their place of accommodation. The distance varies from zero (for example where the tourist stays in an all-inclusive resort hotel area) to unrestricted destination-wide movement. Linear path models show different types of paths that visitors take within the destination. Lew and McKercher (2006) also proposed three types of linear paths: point-to-point patterns, circular patterns and complex patterns (combinations of point-to-point and circular patterns). Therefore, the following spatial indicators could be used as attributes of visitor types:

- Size of the visited area
- Points (areas, events, places, attractions) visited within the destination
- Type of path of the visit
- The origin of the visit (nationality)

By combining behavioural and spatial indicators it could be possible to detect visitor type and thereafter come to conclusions about the loyalty segment those visitors could belong to. For example, Finnish (origin) visitors who revisit Tallinn very frequently (frequency), stay for only one or two days (length), visit a very small area (size of area) and exhibit a point-to point pattern (path) from the harbour to the shopping area and back (points visited) could be classified as shopping tourists and therefore could be functionally loyal.

2.2. Passive mobile positioning data used in included empirical studies

Shoval and Isaacson (2009) have described different possibilities for tracking tourists' spatial movements (see Figure 12). According to their treatment there are three main alternatives for data collection:

- *Direct observation*, where the researcher follows the subject(s) and observes and maps their movements,
- *Remote observation,* where observation will be carried out using different appliances to record and analyse the aggregate tourist flows, and
- *Non-observation*, where the time-space patterns will be identified, relying on the subjects' diaries and reports of their behaviour.

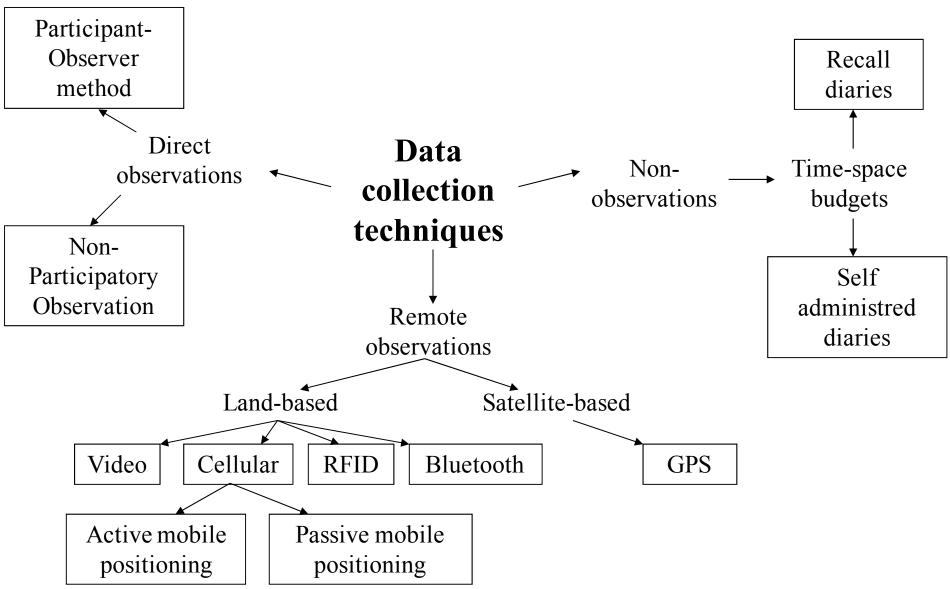

Figure 12. Tourist spatial behaviour data collection methods (Shoval and Isaacson 2009).

They also have brought out the strengths and weaknesses of those alternatives. In this dissertation, passive mobile positioning (PMP) will be used for data collection. This is a land-based cellular remote observation method. According to Shoval and Isaacson (2009), it is less costly than direct observation techniques and provides an objective snapshot of the subjects' behaviour. The weaknesses they highlighted are related to the accurate identification of the subjects and their motivations. Gruteserand and Hoh (2005) name two dimensions of uncertainty around identification: whether the user is who people think he/she is, and whether he/she is where people think he/she is. By using mobile phones, the tracking of movements is antennae or cell-based. GPS technologies could offer more accurate tracking data but despite that, GPS receivers are increasingly being embedded into mobile phones nowadays and the penetration of mobile phones is much higher (Shoval and Isaacson 2009). Mobile phones are widespread, and similar standardised data can be used around the globe (Ahas et al. 2008).

The information used in location based marketing surveys usually stems from personal positioning (Shoval and Isaacson, 2009). This has also been referred to as active mobile positioning (Ahas and Mark 2005), where the location of a person is determined by a special positioning inquiry. This information allows the examination of the movement of customers in time and space and the prediction of their behaviour. Such solutions have been proposed for communicating advertising, managing tourist destinations and developing geomarketing solutions. Another approach to using location information in marketing is guided by the logic of data mining (Andrienko et al. 2006; Liao et al. 2009), i.e. the logic that electronic databases, which have become very common these days, will be used for profiling user information. Locations, numbers of use and other related statistical data allow the identification of visitors with similar behaviour patterns or associated with a specific place on the basis of mass data analysis (Ahas et al. 2010). Mobile positioning can be divided into passive and active positioning. Active mobile positioning is used for mobile tracking where the location of the mobile phone is determined (asked for) with a special query using a radio wave. Passive mobile positioning is data which is automatically stored in memory or log files (billing memory; hand-over between network cells, Home Location Register, etc.) of mobile operators. The easiest method for passive mobile positioning is "a billing log" that is recorded for called activities. Any active use of a mobile phone (calls and SMS messages in and out, GPRS, etc.) is deemed call activity.(Ahas et al. 2010). PMP data is historical or real-time proximity data concerning the location of call activities or handovers of mobile telephones in network cells. Data as the location of telephones or call activities in the network; or the hand-over between network cells; or the intensity of calls in an antennae (Erlang values) is automatically stored in mobile operators' memory files (Ahas et al. 2008). From an electronic database, it is possible to find segments with similar characteristics with relatively little effort (Pura 2005).

In this dissertation, the data from Estonia's biggest mobile operator EMT (Estonian Mobile Telephone) was used. EMT covers nearly 99.9 per cent of the total land area of Estonia (Estonian Mobile... 2010), which measures approximately 45 000 km² (see Figure 13). Market studies show that EMT has a 46 per cent share of the local mobile phone market (TNS EMOR 2008, 2009). The method for data collection and analysis has been developed in Estonia in cooperation between the private company Positium LBS, mobile operators and the Department of Geography at the University of Tartu. The database used in this study consists of a spatial and temporal register of call activities of foreign mobile phones using EMT's roaming service. Call activity is any active use of a mobile phone in networks – incoming and outgoing calls, SMS, GPRS etc. Roaming service means that mobile phones registered in countries other than Estonia can be used on the Estonian network. The register includes the following parameters for every call activity:

- the exact time of call activity;
- the randomly generated unique ID number for the phone (not related to the phone or SIM card number);
- the antenna ID with the geographical coordinates of the antenna;
- the phone registration country – used as the nationality of the phone owner

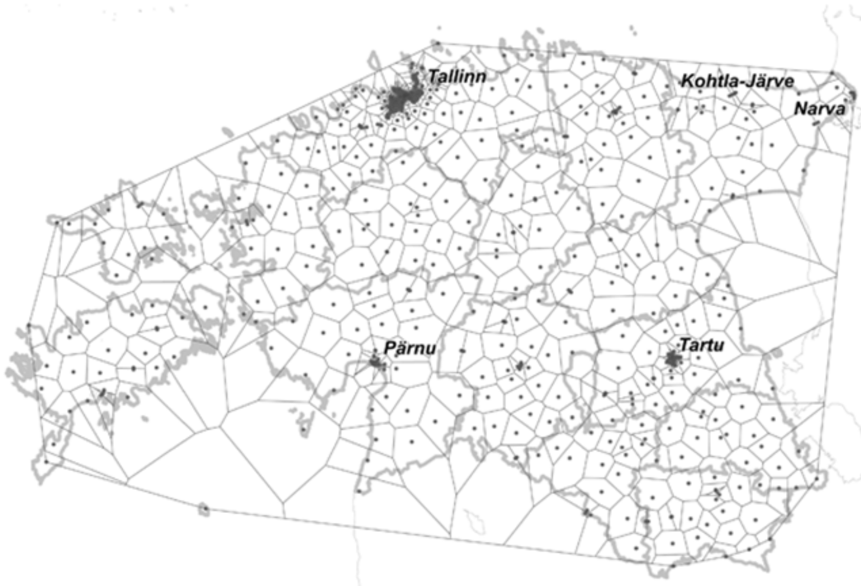

Figure 13. Distribution of network antennae of the EMT network in Estonia. Broadcasting areas of antennae are calculated based on Voronoi tessellation cells.

The geographical precision of the data is determined by the level of the GSM network cell (Cell ID). The spatial accuracy of the location information depends on the density of the mobile network. The accuracy is higher in urban areas, where the mobile network is denser and lower in less populated rural areas, including natural parks, swamps etc., where the mobile network is sparse and where less people dwell and move about. The measurements by Positium LBS show that the spatial precision in Estonia varies from 100–1,000 metres in larger cities (Tallinn, Tartu, Pärnu) to 1.5–20 kilometres in rural areas. Ahas and his colleagues have tested the quality of positioning data by comparing it with accommodation statistics. They found high correlations between the two databases (Ahas et al. 2008).

Due to privacy issues, the database is anonymous and does not contain any back-traceable personal information about the user of the phone. To recognise a person, which is essential in order to analyse repeat visits and loyalty, a randomly generated unique ID number is assigned to every phone. The ID generated by the mobile operator enables the identification of the calls made by one person during the study period. An example of a single entry in such a database is:

Country of origin: Latvia;
Time of call activity: September 8. 2007. 22:03:11;
Unique ID: 64353;
Location of antenna: E27-44-39.00 N59-25-49.00.

The use of mobile positioning data brings up the issue of privacy and surveillance, which is an essential problem in such areas dealing with monitoring or tracking of an individual's movement in space and time. The main concern is how to manage – collect, analyse, retain and use – the dataset, gathered from thousands or even millions of people, without jeopardising their privacy. Today, mobile telephones have become very personal. The proliferation of mobile phones and their diversity of functions have led to an increase in the amount of daily users and people like to carry phones in their pockets everywhere. This is the main reason why such data is of enormous value to researchers.

Moreover, a lot of people associate the meaning of the phone with security aspects, because they can send or receive a message if something happens to them, a close friend or a family member of theirs. Therefore, the collecting of mobile positioning data often creates a fear of being tracked or listened to wherever one goes. Ahas et al. (2008) add that very often people do not know anything about researchers or the purpose of the data use. Then it is very important to explain all aspects of the study and give feedback. Explanations and information about results help reduce fears of illegal surveillance (Ahas et al. 2008).

The main stakeholder in dealing with mobile positioning and privacy is the mobile operator, who can limit the use of data by third parties. Due to competition in the market between operators, it is very important to maintain a good reputation in the eyes of one's customers. Even negative press reports about research using an operator's database may impact on the loyalty of subscribers and, hence, damage the operators' business (Ahas et al. 2007). These reasons refer to the necessity for data protection mechanisms and accordance with legislation when conducting research based on mobile positioning data.

In Estonia, the first step for the research team was to carefully check, together with the mobile operators and the Estonian Data Protection Inspectorate, the accordance of data use with Estonian legislation and EU directives (Directive 95/46/EC; Directive 2002/58/EC). Although the cell-based passive mobile positioning method is not able to yield precise location information and include the algorithmic noise which reduces the need for protecting privacy, it is generally insufficient for every situation and sample (Reades 2010). For instance, Reades (2010) gives an extensive overview of different methods of protecting the data and reducing the concern for privacy. Some of those were also employed by this research team.

The original database used by author of this dissertation was secured according to the regulations for the handling of personal data. Moreover, a special "privacy filter" has been developed for protecting the identities of individuals. For example, individuals are marked with random IDs by operators; if there are less than ten people visiting a particular destination, the number of visitors is shown as ten; and all people of "exotic" nationalities under five persons are summarised as "Other countries" (Tiru et al. 2010). The committee, which consists of external observers, has decided that the data use is in accordance with Estonian and European legislation. There is no personal information connected with the data, and the generalisation level of the analysis does not allow for the identification of single persons on geographical or temporal grounds. Nevertheless, there is a concern about issues of privacy and ethics, as any use of mobile positioning data is very sensitive in this respect. Along with scientific research, the research team is developing the privacy filter and mechanisms for mobile operators that will provide privacy-safe data usage for interested third parties.

In conclusion, the PMP method provides a large variety of the loyalty and spatial movement indicators for determining different loyalty or visitor segments. Unfortunately the data is country-based – therefore the comparison with other destinations is not possible. Traceable indicators offered by PMP could be the following:

- Number of revisits;
- Frequency of revisits
- Sequence or pattern of visits
- Length of stay
- Recency of revisits
- Size of the visited area
- Points (areas, events, places, attractions) visited within the destination
- Type of path of the visit
- The origin of the visit (nationality)

The number of repeat visits and repeat visitors can vary depending on the temporal and spatial scope. The smaller the territory, the smaller the proportion of repeat visits. The same logic applies to the temporal scope – the smaller the time studied, the smaller the proportion of repeat visits. The database used for the studies conducted here covered the period from the end of April 2005 until the end of September 2009.Therefore, the main limitation stemming from the database is that there is no knowledge of the previous visits of the people in study before 23 April 2005.

2.3. Methods used in the included empirical studies

In the first study the aim was to show that the impact of factors affecting loyalty differs across the customers in the different loyalty segments but is dependant on the level of loyalty of customers. . A model of relationships between factors of loyalty and loyalty levels of customers was constructed and tested on the empirical data about 1,000 private customers from the Customer Satisfaction Survey of Elion, the biggest telecommunication company in Estonia. The LOGIT model was the most appropriate for describing the probabilities of customers' movements from one loyalty level to another if something changes. Multinominal LOGIT could have been an alternative model to use, but in the case of multinominal LOGIT the possible movements of customers between loyalty segments are not so exactly observable. Multinominal LOGIT gives the overall picture of how the sizes of loyalty segments will change, if some independent factor changes.

In the second and third study a-priori segmentation based on descriptive statistics was used and the judgements were made based on the combinations of different data and characteristics described in Section 2.2. In the second study the aim was to show that with the help of PMP data it is possible to detect repeat visits. Therefore the call activities of 2.26 million visitors of Estonia during the time period from 23.04.2005 to 31.01.2009 were analysed. Repeat visits were detected with the use of a particular algorithm which is based on the frequency and regularity of call activities. To detect repeat visits, single visits should first be separated. Therefore the beginning and the end of a single visit should be defined. In the case of the PMP data, it is possible to specify the first and last call made during the visits and that could be used as approximate estimates of the beginning and the end of the visit.

In the third study the aim was to detect different segments of repeat visitors. Therefore the call activities of 2.38 million visitors of Estonia during the time period from 23.04.2005 to 30.09.2009 were analysed. Characteristics used for the detection of different loyalty segments are shown in Table 5. Firstly, based on the number of revisits, repeat visitors were identified. Visitors were classified as repeat visitors if he or she had made more than one visit to Estonia. Then the segment of forced to be loyal visitors was detected. This segment is not directly detectable. Therefore, according to Table 4 (in Section 1.2.) it was necessary to detect transit visitors, crews on transport, diplomats and military personnel. Visits of transit visitors and crew are made during a limited time period (length of stay). The duration of transit visits tend to be between three and 24 hours. They also cover areas which are considered to be transit corridors (points visited and type of path) and can therefore be extracted from other visits. For example Latvians travelling from Riga to Tallinn to travel by ferry to Helsinki; long-haulers driving from Latvia to Russia through southern Estonia along the Via Baltica; sailors who are going ashore for a short period of time in Paldiski, Tallinn or other ports on north-western coast of Estonia; Tallinn airport transfer, etc. Diplomats and military personnel are not detectable with the use of PMP data. They could probably appear as a part of the workers' segment.

Table 5. Methods for detecting loyalty segments in the third study.

Loyalty segment	Visitors type if indirect detection	Characteristics used for detection
Repeat visitor	N.N.	Number of revisits
Forced to be loyal	Transit visitors	Length of stay, points visited, type of path
	Crew on transport	
	Diplomats	N.A.
	Military personnel	N.A.
Functionally loyal	Long-term students	Length of stay
	Long-term workers	
	Business visitors	Length of stay, points visited, size of the area, frequency of visits
	Shopping visitors	
	Loyal to events	Lenght of stay, points visited, sequence of visits
	Other segments	N.A.
Somewhat loyal	N.N.	Frequency of visits
Loyal	N.N.	Frequency of visits
Very loyal	N.N.	Frequency of visits

N.N. – not needed; N.A. – not available
Source: compiled by the author

The functionally loyal segment is also not directly detectable. For that reason long-term visitors who could be workers and students were detected. The main characteristic used for this was the length of stay. Repeat visitors were classified as long-term visitors if their average length of the stay was more than four weeks.

Single-day visitors (without transit visitors and crews) are likely to be shopping tourists or business visitors. It is difficult to distinguish business visitors from shoppers because both visiting patterns to Estonia are alike. Two main distinctions can be assumed for both visitor types beside one-day criteria (length of stay): they visit Tallinn rather frequently (frequency of visits); they do not leave central Tallinn, where there are special shopping areas targeted at Finnish tourists and many offices for business visitors (points visited and size of area). Therefore, the combination of frequent visitors who spend mostly only one day in central Tallinn can be set as a criteria for this group.

A very special functionally loyal group is visitors of events. Their timing of visits is always related to some certain event taking place at the same time (pattern of visits), the areas they visit are related to the location where events take place (points visited) and the duration of their visits match the duration of events (length of stay).

After the exclusion of functionally and forced to be loyal visitors, only committed and inertly loyal repeat visitors should remain. The PMP method provides data about the frequency of visits which could be used as a separator of somewhat loyal, loyal and very loyal visitors. There are clear peaks seen to distinguish repeat visitors whose average periods between visits are shorter than 52 or 108 weeks (one or two years). Therefore it was assumed that visitors who have an average period between visits longer than two years are somewhat loyal, visitors who revisit Estonia on average every second year are loyal and those repeat visitors who visit Estonia more frequently should be called very loyal visitors. It is not possible to distinguish inertly loyal visitors from committed visitors through the use of PMP data.

3. EMPIRICAL STUDIES

4. DISCUSSION OF RESULTS AND CONCLUSIONS

4.1. Empirical findings

The current section provides an overview of the main empirical findings of the studies presented in Chapter 3 of this dissertation. The first study had to fulfil the fifth research task – to discern the existence of different loyalty segments and the need to distinguish between them. The second and third studies were responding to the sixth research task – find out whether the mobile positioning method is able to provide necessary data for segmentation of repeat visitors and whether the proposed framework of segmentation is applicable for real empirical data.

In the first empirical study "**How to avoid customers leaving: the case of the Estonian telecommunications industry**" the LOGIT model with ten equations was composed. Every equation showed the customer's probability of moving from one particular loyalty level to another higher level of loyalty if the value of some influencing factor changes. Table 6 reveals that all equations were statistically significant at the confidence level $\alpha=0.05$.

Table 6. Overall significance of equations

Equation	χ^2	p	N of obs
$L(12)_i$	42,81	0,00	510
$L(13)_i$	33,11	0,00	151
$L(14)_i$	36,85	0,00	231
$L(15)_i$	63,86	0,00	193
$L(23)_i$	36,01	0,00	571
$L(24)_i$	58,51	0,00	651
$L(25)_i$	74,33	0,00	613
$L(34)_i$	19,14	0,02	292
$L(35)_i$	34,46	0,00	254
$L(45)_i$	35,08	0,00	334

Source: compiled by the author

At the same time the significance of the analysed factors differed by equations. That means that consequently it indicates the existence of different levels of loyalty and the list of most important factors affecting loyalty is dependant on the level of loyalty of the customers. It revealed that satisfaction and the importance of the relationship have a significant influence on loyalty irrespective of the level of loyalty, causing abandonment or departure if the value of the mentioned factors decreases. For behaviourally loyal customers the trustworthiness of the vendor is the significantly influencing factor. It also revealed that the appropriate image is a precondition for the creation of the attitudinal loyalty.

In the second study “**LBS in marketing and tourism management: measuring destination loyalty with mobile positioning data**” the main task was to find out how long the gap between call activities should be to be sure that the visitor had left the country. This was required for the detection of single visits and for the separation of repeat visits. It revealed that that the majority (88.8 per cent) of calls were made within an interval of 24 hours. Those calls made within 24 hours were probably made during the same (single) visit to Estonia. A further 4.3 per cent of calls were made within the next five days. There is a small increase in the number of gaps at the end of the seventh day, which corresponds to people travelling to Estonia on a weekly basis. Therefore, the low point (154 hours) before the peak on the seventh day was used as a separator of visits. Based on this it revealed that during the period from 23 April 2005 to 31 January 2009 the percentage of repeat visitors was about 30 per cent of all visitors and they made about 64 per cent of the total number of visits. It also revealed that the share of visitors from neighbouring countries (Finland, Latvia, Russia and Sweden) is, within the repeat visitor segment, much bigger than among all visitors, amounting to a total of about 80 per cent of all repeat visitors. Some other interesting results which suggested to the author that there might exist different sub-segments among repeat visitors included the relatively high share of Filipinos among repeat visitors (1.3 per cent) and the result that the frequency of revisits of some repeat visitors is much higher than that of other repeat visitors.

The third study “**Innovation in destination marketing: the use of passive mobile positioning for the segmentation of repeat visitors in Estonia**” revealed that combining different characteristics of visits and visitors allows for the identification of certain segments from the whole mass of visitors. Based on number of revisits it was possible to distinguish one-off visitors (68.8 per cent) from repeat visitors (30.2 per cent). This method does not allow for the identification of latently loyal visitors, therefore all one-off visitors were labelled as latently or not loyal visitors. Combining the length of the stay, points visited and the type of path as criteria, it was possible to distinguish transit visitors (around 30 per cent of all repeat visitors). For that reason main transit areas were identified. From the remaining approximately 60 per cent of repeat visitors, long-term (approximately 6 per cent of all repeat visitors) and one-day visitors (1.6 per cent of repeat visitors) were extracted based on the length of the stay. Long-term visitors (the average length of stay is longer than four weeks) were thought to be long-term students or workers and therefore functionally loyal. Among one-day visitors there could be different sub-segments such as business visitors and shopping tourists who are not easily differentiable but who all are highly probably functionally loyal. Based on timing and points visited, one special small segment was detected: repeat visitors who are loyal to specific events. Comparing the time and location of different events with the time and location of repeat visitations it revealed that 0.8 per cent of all repeat visitors are those who always visit certain events when revisiting Estonia. Another 19.3 per cent of visitors (61.8 per cent of repeat visitors) who did not belong to any segment described previously, were divided based on visitation frequency into three groups. Those who visited Estonia on average at least once a year (around 36 per cent of repeat visitors) were labelled very loyal visitors. Those who visited Estonia on average at least once every second year (6.5 per cent of repeat visitors) were labelled loyal and those who visited Estonia on average every third year or less (19.2 per cent of repeat visitors) were labelled somewhat loyal visitors.

4.2. Discussion of results and the practical implications

In this section of the dissertation there will be a discussion on the basis of the theoretical and empirical results presented above. The discussion will follow the research objectives presented in the introductory part of the dissertation, starting with the concept of loyalty and ending with the repeat visitors' segmentation principles. Limitations will be discussed in the next section of the dissertation.

As was already seen in the first section, plenty of different approaches to customer loyalty exist. Until the 1970s, behavioural treatments dominated. Later on, attitudinal or composite approaches emerged. Most conceptual definitions of customer loyalty are over 20 years old. In recent papers, authors no longer even try to offer new conceptual definitions of loyalty, instead simply contributing to the operationalisation of the phenomenon. The most popular and most cited definition of customer loyalty proposed by Jacoby and Kyner (1973) defines customer loyalty as a biased repeat behaviour which is caused by a psychological process. This definition does not cover many other substantial loyalty concepts and is therefore too narrow. It is quite common for authors of recent papers to agree on a conceptual level with Jacoby and Kyner but operationalise loyalty through other, usually behavioural concepts, because it is often too complicated to collect attitudinal data. The first empirical study of this thesis indicates the need for a broader definition of customer loyalty whilst at the same time not ignoring the existence of different loyalty segments. The definition of customer loyalty offered in the current dissertation embodies different concepts of loyalty and does not limit the existence of loyalty with the occurrence or absence of specific factors. It is more flexible and allows us to distinguish between different types of loyalty. It also takes into account that the behavioural response of loyal customers does not always have to contain an actual primary purchase; it could also occur in secondary form (i.e. verbal statements or referrals). Actually more and more companies nowadays are using the Net Promoter Score (NPS) method for the measurement of customers' loyalty, which consists in general of only one question about the likelihood of making referrals by customer (What is… 2011).

This broader definition of customer loyalty proposed by the author of this dissertation was embedded into the destination loyalty context. The new definition of destination loyalty is proposed as follows: Destination loyalty is the (1) biased (2) repeat visitation or secondary behaviour, (3) expressed over time (4) by some decision-making unit related to inbound traveller(s), (5) with respect to one or more geographical area or other type of destination and (6) is a function of a psychological (decision-making, evaluative) process. This proposed definition has several positive attributes. First, as destination loyalty is one sort of customer loyalty, its definition should be similar and comparable with the general definition of customer loyalty. This particular definition is comparable with the definition of customer loyalty proposed by author. Second, due to the term "inbound travellers" used in the definition, this definition enables us to treat visitors more broadly, covering all useful segments for the destination: during the exploration of the links between repeat visitation and tourism, place and destination marketing (the second research objective) revealed that although officially the term "visitor" covers quite a lot of traveller segments, in the destination loyalty literature it is usually simplified to include only recreational or leisure visitors or tourists. At the same time, looking from the place marketing point of view the term "visitor" is not broad enough and does not cover several useful segments for the destination, for example workers, students, potential new residents, etc. Third, the proposed definition very clearly states that as a destination not only geographical areas should be treated, but there are also other types of destination, such as events and attractions or combinations of them.

The first empirical study revealed that factors affecting loyalty differ across levels of loyalty. Therefore the identification of different segments of customers based on loyalty has serious practical importance. Until now this principle has been largely ignored in destination marketing and tourism literature. Repeat visitors have usually been treated as one homogeneous segment. Only a few authors (Oppermann 1999 and 2000; Baloglu 2001; Niininen and Riley 2003; Backman and Crompton 1991) have tried to distinguish different sub-segments among repeat visitors. For example, Oppermann proposed three loyalty segments based on the frequency of revisiting: somewhat loyal, loyal and very loyal. Other authors mentioned here tried to empirically detect the segments proposed by Dick and Basu (1994). One theoretical originality of this dissertation concerns the systematisation of the existing classifications of customer loyalty and the construction of a new approach to the segmentation of repeat visitors. The author renewed and extended Dick and Basu's (1994) two-dimensional treatment of loyalty by extending the classification of spurious loyalty and loyalty into more detailed groups. This classification was later used as the basis for classifying repeat visitors. Within the spuriously loyal visitor group, inertly, functionally and forced to be loyal segments of visitors were distinguished. The group of loyal visitors followed Oppermann's (1999 and 2000) approach and further divided it into somewhat loyal, loyal and very loyal groups of visitors. The detailed results of the first study (the influence of certain factors on the different levels of loyalty) are not directly and completely adjustable to the context of destination loyalty due to the differences of the segments under analysis. Still, there is one idea that is worth further investigation in the destination loyalty context. It concerns the result of the first study about the significant influence of the image on the movement of customers from the behaviourally loyal segment to the attitudinally loyal segment. If the image of the destination influences the movement from the loyal or spuriously loyal segments to the very loyal segment, this could be an argument in favour of the trend in place marketing to shift towards branding, as mentioned in the introduction

The most complicated and disputable aspect of the developed methodology is the separation of visits. The task was to discover the optimal length of the gap between call activities to be sure that the visitor had left the country. This is a totally unique approach and therefore there was no reference point from previous literature for that. There are two kinds of errors possible. If the calculated gap is too short, one visit could be interpreted as multiple visits. If the gap is calculated as being too long, multiple visits could be interpreted as one visit. Taking into account that approximately 89 per cent of visitor calls were made within 24 hours and the GSM network covers nearly 99.9 per cent of the total land area of Estonia, it is unlikely that these visitors are out of reach for more than 3–4 continuous days. Therefore six days and ten hours was chosen as a separator of visits because on one hand it is very unlikely that there would be no calling activities at all during such a long time and from the other side it enables us to count weekly visits. Of course it is possible that some very frequent visits will remain undetected.

In order to detect segments of repeat visitors, several characteristics of visits and visitors were defined. Due to the difficulties in the process of deducting motives and attitudes from the behavioural data, another indirect method of detecting repeat visitors' segments was proposed. It was assumed that some patterns of behaviour could describe the type of visitors. For example, if the visitor makes repeat visits very frequently, always using the same path which overlaps with the transport corridor and the duration of his/her visits is short, he/she should be considered as a transit visitor whose visits are very likely to be unrelated to his/her feelings towards Estonia. This enables us to conclude that it is very likely that this visitor belongs to the spuriously loyal and more precisely to the forced to be loyal segment (see Table 5 in Section 2.3). The results of the second and third empirical study clearly indicate the high potential of the use of the PMP method in order to improve the quality of data about tourism flows in

Estonia. The PMP method enables the observation and measurement of the duration, timing, density, seasonality and dynamics of visits. Furthermore, it allows us to distinguish between repeat visitors. Repeat visitors could be segmented by their countries of origin, frequency of visitation, seasonality, etc. In addition the local destinations and events most highly regarded by repeat visitors, their movement trajectories could be also identified. The rich dataset provided by PMP allows for the implementation of a proposed more detailed classification of segments of repeat visitors. According to the purposes set by destination managers, it is possible through the creative combination of PMP data to detect very specific segments. Until now four special segments have been discovered. Other repeat visitors were separated based on the frequency of revisits into the segments: somewhat loyal, loyal and very loyal visitors. It is clear that among these visitors there are more special segments which should be discovered in the near future.

Within the empirical studies made by author the role of the nationality of visitors was not highlighted in the interpretation of the results. According to the second study the percentage of repeat visitors from neighbour countries is about 80 per cent. It is clear that the segmenting of repeat visitors based on the frequency of repeat visits into the somewhat loyal, loyal and very loyal groups the nationality should be considered. Whereas for Finns it is normal to revisit Estonia every year, it is not the same for Australians. It can be clearly seen in Appendix 1 where the distribution of nationalities inside the segments of repeat visitors is presented, that if the average percentage of Finns among repeat visitors is 52.7 per cent, then among very loyal visitors it is 76.7 per cent. Therefore, different principles should be worked out for the segmentation of different nationalities based on destination loyalty. Appendix 1 offers several hints that support the results of Study 3, for example the relatively high ratio of Filipinos among transit visitors and the large share of Latvians among workers and students. One interesting result is the lack of Latvians among very loyal visitors. It could be that all frequent Latvian visitors only make one-day visits to Estonia and are counted among the one-day visitors segment or, when considered within the limitations of the study below, this issue could be caused by the sample bias where data provided by only one mobile operator is used.

There are three main groups of beneficiaries who profit from the findings of this dissertation: government, private enterprises and researchers. For the government the use of the PMP method provides prerequisites for the creation of a new focus in the destination marketing of the country. The Estonian government could diversify its tourism strategy by addressing multiple segments of repeat visitors. Knowing the motives of the repeat visitors enables the authorities to improve their experiences and make them more loyal to Estonia. Even if the aim of Estonian tourism policy has been to favour repeat visits from local markets (Marketing Destination… 2011), it has been impossible to measure the outcome of the policy so far. Consequently it was also very difficult to set clear tactical goals as to how to target different segments of repeat visitors. The PMP method could be used as a tool to obtain valuable feedback information and therefore implement more specific tactics to extend the duration of repeat visits of multiple segments of visitors. This analysis has already succeeded in identifying segments of repeat visitors such as sailors and long-distance lorry drivers. There is a potential to turn these people into loyal clients of Estonian service providers (shopping centres, taxis serving harbours, mobile operators serving their phones, etc.). Estonia's tourism strategy currently completely fails to address these issues. Adequately developed policy instruments targeting these segments might make these visitors more useful; for example, they could be involved in the promotion of Estonia by spreading the message in their native countries. This is only one of many ways of how the findings of this dissertation could be used in the improvement of destination marketing.

The range of private sector beneficiaries extends beyond the tourism industry in its narrow sense. With knowledge of the size and spatial movement of particular segments, several service and transport enterprises can minimise risks associated with the creation of new services or the opening of new service points for them.

For the researcher there are several aspects that are revealed by this dissertation. Firstly, it revealed that repeat visitors cannot be analysed as one homogeneous entity but instead they are heterogeneous, comprising several segments with different motives and visiting patterns. Secondly, it revealed that next to the traditionally well-researched recreational tourists' segment, other important segments of repeat visitors also exist. Thirdly, the PMP method allows researchers to estimate the approximate size of specific segments and based on that information they may decide on the necessity and importance of more in-depth analysis of any particular segment. In addition, this dissertation has also improved the stock of knowledge about the practical use and analysis of PMP data.

4.3. Conclusions

The aim of this dissertation was to create a framework for the segmentation of repeat visitors using PMP data. The building of the framework started from the theoretical part of the phenomena. As the repeat visitation is a behavioural expression of destination loyalty which, in principle, is a sort of customer loyalty, first the concepts of customer loyalty and destination loyalty were specified. Then a methodological side of the segmentation process was placed under consideration and finally the created framework was tested on empirical data.

The visualisation of the framework created for the segmentation of repeat visitors using PMP is presented in the central part of Figure 14. This framework is surrounded by the three levels of context. The basis of the framework is the conceptual context (the outer layer in Figure 14), which specifies the nature of customer loyalty and destination loyalty and brings out different loyalty types. Then comes the strategy context (the second layer in Figure 14), which specifies the goals and targets for the segmentation as a link between conceptual and methodological levels. And finally, based on the conceptual and strategy principles, the methodological context (third layer on the figure 14) specifies the criteria and methods of segmentation. The following section will address all three of these contexts in more detail.

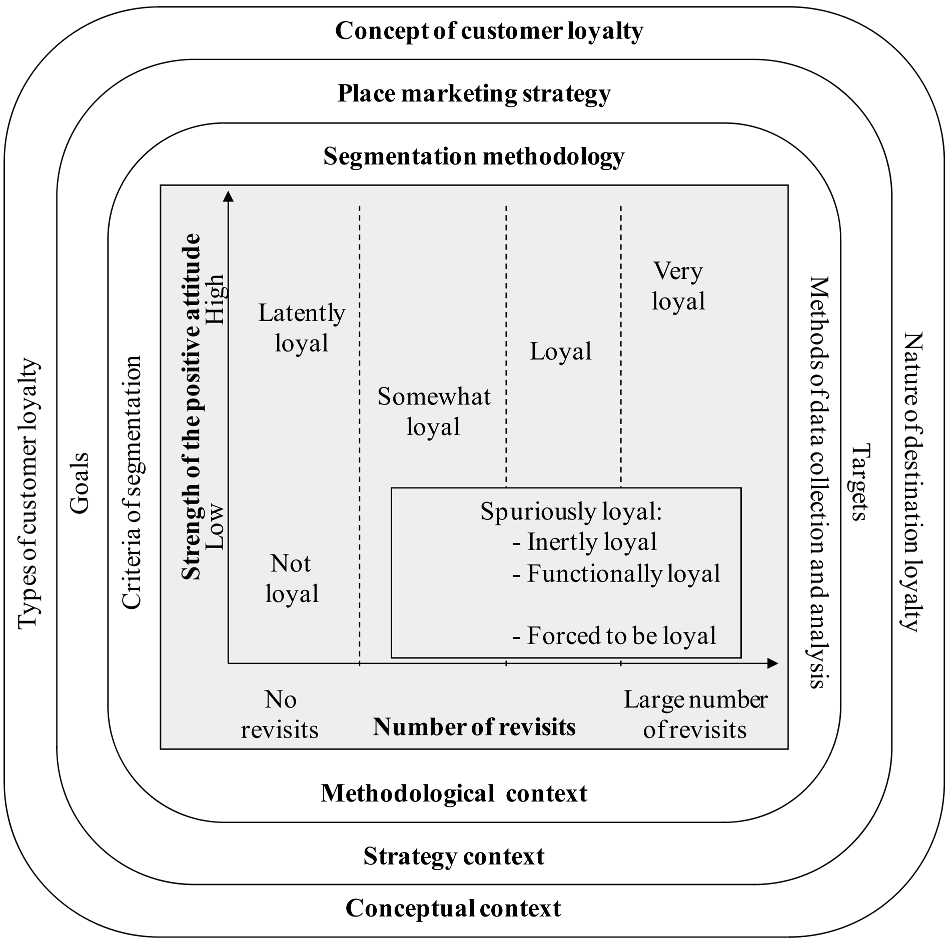

Figure 14. The framework for segmentation of repeat visitors with using PMP
Source: compiled by the author

The **conceptual context** is devoted to the analysis and systematisation of existing knowledge of customer loyalty. Previous research has not reached a universal definition of customer loyalty. Several researchers were able to identify different types of loyalty but in the process of conceptualising it, they refused to reflect on the plurality of loyalty in their definitions.

Therefore in principle, by previous definitions of customer loyalty, only a binary choice existed: a customer can be loyal or not loyal. This approach, according to the first empirical study, is too simplified. To get a universal definition of loyalty, the author of this dissertation modified the most cited definition of Jacoby and Kyner (1973) and proposed the following definition:

> *Customer loyalty is the (1) biased (2) behavioural response (primary or secondary), (3) expressed over time, (4) by some decision-making unit (5) with respect to one or more alternatives and (6) is a function of a psychological (decision-making, evaluative) process.*

This definition embodies different concepts of loyalty and does not limit the existence of loyalty with the occurrence or absence of specific behavioural or attitudinal factors. It is more flexible and allows us to distinguish between different types of loyalty. Therefore it also allows for the implementation and improvement of the treatment of types of loyalty proposed by Dick and Basu (1994). The improved system of types of loyalty is presented in Figure 6 in Section 1.1. It consists of the following types of loyalty.

- **Commitment or active loyalty** exists when a customer behaves loyally because he or she has an inner urge to prefer a concrete brand and he or she is ready to overcome any obstacles to get this brand.
- **Conative loyalty** exists when a customer behaves loyally because he or she has an inner urge to prefer a concrete brand but is not willing to invest in the strengthening of the relationship if any problem occurs.
- **Affective loyalty** exists when a customer behaves loyally because he or she has some positive feelings aroused towards the brand.
- **Latent loyalty** exists when, despite some positive feelings aroused towards the brand, the extent of loyal behaviour exhibited by the customer is low.
- **No loyalty** exists when a customer has no positive feelings aroused towards the brand and the extent of loyal behaviour exhibited by the customer is low.
- **Spurious loyalty** exists when a customer behaves loyally, but has no positive feelings aroused towards the brand. Based on the root that caused this situation, spurious loyalty could be divided into inert, functional and forced loyalty.

As mentioned above, repeat visitation is the behavioural expression of destination loyalty. Therefore the necessity to specify the concept of destination loyalty arises. Using as a starting point the customer loyalty definition proposed above by the author, a new definition of destination loyalty was suggested as follows: *Destination loyalty is the (1) biased (2) repeat visitation or secondary behaviour, (3) expressed over time, (4) by some decision-making unit related with inbound traveller(s), (5) with respect to one or more geographical area or other type of destination and (6) is a function of a psychological (decision-making, evaluative) process.*

In the proposed definition the concept "inbound travellers" is used, which broadens the concept of the "visitors" used in former literature of destination loyalty. It includes all types of visitors who are attractive targets for place marketing in addition to recreational tourists, such as workers, students, potential new residents, etc (see Figure 9 in Section 1.2). In this definition the concept of destination is also specified. By this definition the destination could be a geographical area but it could also be something else – an event or attraction or a combination of them, for example.

Strategy context. The segmentation of customers is a strategy-driven process and should rely on the goals set by strategy makers. In the dissertation some aspects from a strategy context were covered. The overall strategic goals which could be reached through the repeat visitors – reduction of marketing costs, lower customer management costs, increased purchases, reduction of risks and positive word of mouth (WOM) – were presented in the introduction of this dissertation. Also the concept of visitors was broadened due to the consideration of the strategic context. The literature clearly indicates that place marketing is a broader concept than destination marketing. Places can't behave only as destinations for tourists. They have other target markets too, covering also seasonal or short or long-term workers, students, potential residents, investors, and so on. Therefore, in the proposed definition of destination loyalty, visitors are replaced with inbound travellers.

Clearly the targets and goals of both place and destination marketing have influence over the criteria and methods used for the segmentation. For example, where there is a need to find a totally new segment for targeting marketing activities, it could be reasonable to use post-hoc segmentation methods. These links between strategic goals and choosing the criteria and methods for segmentation were not the major focus of this dissertation.

Methodology context. In the process of methodology building for segmenting repeat visitors, two important aspects need to be considered: methods and criteria. The classification of methods could be described using different points of departure. A theoretically approved option is to distinguish between the a-priori and post-hoc or descriptive and predictive segmentation (Wedel and Kamakura 2000). In the studies discussed in this dissertation, the a-priori descriptive method is used for segmentation. The other approach is to distinguish between direct and indirect methods which were proposed by the author (Figure 11 in Section 1.2). In the indirect method, the types of visitors were divided between different loyalty segments (Table 4 in Section 1.2). The criteria of segmentation were proposed based on different measures of loyalty while considering the limits and capabilities of PMP. Theoretically, there is a plethora of different measures of loyalty which could be used as criteria for segmentation. In practice, the collection of this data is often relatively costly, irregular and it generally only provides small samples, usually only of recreational tourists. The use of the PMP method helps partly to overcome these limitations. The remaining criteria proposed by the author for segmentation of repeat visitors based on PMP data are: number of revisits; frequency of revisits; sequence or pattern of visits; length of stay; recency of revisits; size of the visited area; points (areas, events, places, attractions) visited within the destination; type of path of the visit and the origin of the visit (nationality). More specifically, the use of the PMP method required working out a new approach to identify separate visits made within a short period. Based on empirical data (Study II) the criterion for the detection of repeat visits was proposed. It was 154 hours as the optimal length of the gap between call activities made by the visitor.

After building the framework for the segmentation of repeat visitors using PMP data it was also tested on empirical data (see Study III). Based on the framework described above the a-priori segmentation method was used by combining different characteristics of visits and visitors. As an outcome, visitors to Estonia were divided into the loyalty segments. It revealed that 68.8 per cent of visitors were latently or not loyal (single time visitors). From repeat visitors 36.1 per cent were identified as very loyal, 19.2 per cent as loyal and 6.5 per cent as somewhat loyal. 8.5 per cent of repeat visitors were classified as functionally loyal (workers, students, events visitors, business and shopping tourists) and 29.7 per cent as forced to be loyal (transit visitors). Even though the empirical data is based on visits to Estonia, the proposed framework could be generalised and used irrespective of the country or region under the investigation.

4.4. Limitations and suggestions for future research

There are numerous limitations that could be divided into two major groups: technological and methodical limitations. The former are concerned with the passive mobile positioning method. Those limitations can further be divided into four groups: privacy, availability of data, sampling and geographical precision. Privacy issues are the most critical aspect in the use of the data, because mobile phones have become very personal objects for users. Due to the privacy issues there are no personal identifiers of phone users included in the PMP dataset. The availability of data is also a crucial issue. Mobile operators “sell trust” to their subscribers and due to privacy concerns and business secrets, they do not want to expose data to researchers willingly. The use of the data, provided by only one mobile operator (EMT), could cause a sample bias because due to the roaming contracts some nations could be over-represented in the sample. For example the share of Germans is limited in the dataset available to the author of the dissertation. This is because the mobile operator Vodafone is dominant in the German market and customers of Vodafone are highly likely use the Tele2 network rather than EMT during their visit to Estonia. The special algorithms were developed by Positium LBS to compensate for the possible biases in mobile positioning data (Tiru et al. 2010). The algorithm is upgraded with indexes from an annual phone use survey. The other problem related to sample bias could be the disproportionate presence of different lifestyles or wealth segments in the sample. For example, very loyal Latvians are not presented in the sample (see Appendix I) due to the use of another mobile provider which has no roaming contract with EMT.

The third aspect regarding technical limitations is related to sampling. The PMP data is a new source of data and therefore raises many questions about sampling. The basic sampling question is: who uses phones? There are huge differences in phone penetration between different age groups and nationalities. In calculating repeated visitations, the length of period that a person keeps the same phone number is also crucial. In today's business practice, people tend to keep the same number even when they change their operator, and EU regulation supports the policy of keeping the same phone number. It certainly helps to identify repeat visitations. Limitations of geographical precision are related to the problem of the network antennae being distributed unequally throughout the country, and with the network coverage also being different, there is an unequal spatial accuracy – dense regions such as urban areas and roads with heavy traffic have much higher antennae density than rural areas.

Methodological limitations could be divided into three groups. There are limitations concerned with the detection of repeat visits, counting the specifics of nations and proving the conclusions. The algorithm developed for calculating repeat visitations (study II) needs development and critical evaluation. The length of reference period is important, as a longer period makes it possible to detect more repeated visitations. The gap between two separate trips is fixed on six days and ten hours, but there is a need to develop this fixed frame into a more flexible and personalised calculation method. Specific patterns of nations and the distance from countries of origin need more attention. The distribution of visitors into the loyalty segments (Figure 9 in Study III) is not exact due to the sample biases described above and due to the "averaged" principles of segmentation which should be more nation-specific. The final limitation is concerned with the descriptive nature of the methods used. In some cases the use of descriptive statistics is justified – for example in the case of identifying transit or one-day visitors. But in some cases – for example, when dividing repeat visiting into loyal or very loyal segments – some more advanced statistical methods could be more appropriate.

Being aware of all these limitations, the PMP method and the data used in the current dissertation is still a promising one for marketing studies and opens up new perspectives for application. This dissertation has an exploratory character, focusing on the principles of the use of the new technological solutions in determining segments of repeat visitors. There are four alternatives for future research in the detection of loyalty segments: first, the PMP method offers opportunities to go much deeper with the a-priori descriptive segmentation. Different criteria could be combined to extract more specific visitor segments. Second, it is necessary to also use field questionnaires in addition to PMP to get more insight and give support to the conclusions made so far. Third, it is possible to perform post-hoc segmentation with a positivistic approach with the use of cluster analysis in order to find new loyalty segments among repeat visitors. And fourth, the positivistic approach provides statistical support for the existence of those segments of repeat visitors already detected.

One major issue for the future research is related to the consideration of specific behavioural aspects of nationalities and geographical distances between the host country and the countries of origin of visitors. For different nations, different principles should be worked out for detecting repeat visits or dividing visitors based on the revisiting frequency into loyalty groups. This analysis should also cover holiday periods, cultural events, national holidays, motivation and timing of visit, etc. Focusing on the motivation of visits for example enables us to analyse the impact of changes in the socio-economic and political regulations in both the host and home countries on the behaviour of repeat visitors. For example, it is possible to detect the influence of price shocks (e.g. increase in alcohol, tobacco, fuel taxation) on the number of functionally loyal repeat visitors and frequency of visits.

Due to the exploratory character of the research, the obtained results could be used to describe the flows of repeat visitors on a general level, which is not sufficient to design specific aims of the tourism marketing strategy. Future research should be directed to the process of figuring out the economic value of different segments of repeat visitors. For that purpose the use of the PMP method helps to discover the duration of visits of different segments of repeat visitors. It could be used as a proxy measure of their expenditure during their visit. Another way is to collect direct data from the repeat visitors themselves by using questionnaires. It will provide additional data to distinguish segments according their potential to use "word of mouth" among their co-citizens in their home country. After being aware of the economic value of different segments of repeat visitors, one could launch the specific tourism marketing strategy building process.

Finally, this dissertation was mainly focused on repeat visitors. It dealt with the question of how to segment repeat visitors which enables their more precise targeting and helps to increase their loyalty. Therefore, a new avenue for future research is to concentrate on the analysis of the one-off visitors and their relations with different segments of repeat visitors. It helps to answer the question: how to turn one-time visitors into repeat visitors.

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APPENDICES

Appendix 1. The distribution of nationalities inside the segments of repeat visitors.

All visitors		Repeat visitors		Transit visitors	
FI	35,0%	FI	52,7%	FI	64,9%
LV	9,7%	LV	14,5%	LV	12,6%
RU	10,9%	RU	9,1%	RU	4,0%
SE	7,6%	SE	4,3%	SE	3,0%
Neighbours	**63,3%**	**Neighbours**	**80,6%**	**Neighbours**	**84,6%**
DE	5,2%	LT	4,7%	LT	4,4%
GB	4,6%	PL	2,5%	PL	3,3%
NO	4,5%	DE	2,1%	PH	1,6%
LT	4,0%	NO	1,9%	DE	0,9%
Other	23,4%	Other	18,4%	Other	16,3%

Workers and Students		One-day visitors	
FI	37,4%	FI	53,6%
LV	25,2%	LV	15,2%
RU	9,9%	RU	9,6%
SE	3,8%	SE	4,1%
Neighbours	**76,3%**	**Neighbours**	**82,5%**
LT	8,1%	LT	4,6%
PL	3,8%	PL	2,2%
DE	2,2%	DE	1,8%
NO	1,7%	GB	1,6%
Other	7,9%	Other	7,3%

Somewhat loyal		Loyal		Very loyal	
FI	52,7%	FI	66,7%	FI	76,7%
LV	14,3%	LV	7,3%	LV	-
RU	9,3%	RU	4,9%	RU	2,8%
SE	4,3%	SE	5,9%	SE	6,4%
Neighbours	**80,7%**	**Neighbours**	**84,9%**	**Neighbours**	**88,7%**
LT	4,7%	LT	4,5%	LT	3,4%
PL	2,4%	NO	2,4%	DE	2,3%
DE	2,1%	DE	1,9%	NO	2,2%
NO	1,9%	PL	1,2%	PL	1,2%
Other	8,2%	Other	5,2%	Other	5,1%

Source: query from the PMP database 17.05.2011

SUMMARY IN ESTONIAN

Korduvkülastajate segmenteerimine passiivse mobiilpositsioneerimise abil: kliendilojaalsusel põhinev käsitlus

Töö aktuaalsus

Töö aktuaalsust on võimalik välja tuua neljast vaatepunktist tulenevalt. Kindlasti saab rääkida korduvkülastajate ja nende segmenteerimise tähtsusest, kuid kuna mõisted ”korduvkülastaja” ja ”korduvkülastus” on kasutusel turismi ja sihtkoha turunduse valdkonnas, siis tuleks töö aktuaalsuse määratlemisel alustada nende valdkondade tähtsusest ja aktuaalsusest.

Turismil on üha suurenev roll nii töökohtade loomisel, regionaalpoliitikas, maaelu arendamisel kui mujalgi. Väga paljude riikide jaoks on turism väga oluline majandusharu. Näiteks Euroopa Liidu liikmesriikide puhul moodustasid 2008 aastal rahvusvahelise turismi tulud 12 riigil üle 3% SKT-st ja 7 riigil isegi üle 5% SKT-st (Tourism… 2010). Seetõttu on riiklikul tasandil väga oluline hoida turismisektorit pidevalt fookuses ja koostada turismitööstuse edendamise jaoks korralik ja professionaalne turundusstrateegia.

Ka sihtkohaturunduse tähtsus kasvab üha. Globaliseerumise taustal on riigid ja kohad üha rohkem hakanud omavahel konkureerima. Konkureeritakse nii välisinvesteeringute, külastajate, ettevõtete asukoha kui ka kohalike elanike pärast. (Kotler et al 1999) Mida liikuvamad on kapital, inimesed ja ettevõtted, seda rohkem peavad kohad muutma end atraktiivseks. Selle tõttu on eraldi turunduse suunana välja kujunenud kohaturundus (*place marketing*) ja selle ühe osana, mis tegeleb turistide sihtgrupiga, sihtkohaturundus (*destination marketing*). Sihtkohaturunduse eesmärgiks on maksimeerida turismitulusid optimeerides samal ajal turismimõjusid piirkonnale. (Buhalis 2000)

Tänapäeval on turundusstrateegiate koostamisel põhifookusesse asetunud olemasolevate kliendisuhete hoidmine ja uute klientide hankimine on liikunud rohkem tahaplaanile (Gummesson, 1999). Selleks on mitmeid põhjuseid:

- Turunduskulude kokkuhoid
- Teeninduskulude vähenemine
- Suurenenud ostukogused
- Riskide maandamine
- Positiivne “suust-suhu” info liikumine

Samad tegurid on tähtsad ka turismitööstuses, sest külastatavate sihtkohtade valik on turistide jaoks järjest suurenenud. Kuna konkurents turisminduses on oluliselt kasvanud, siis tuleb igal riigil ja turismiettevõttel hakata mõtlema, kuidas muuta turistid lojaalseks ja panna tagasi tulema. Uuringud on näidanud, et korduvkülastajad viibivad sihtkohas kauem ja kulutavad seal rohkem. Samuti on korduvkülastajate arvu teades paremini võimalik planeerida infrastruktuuri võimsusi. Vähetähtis ei ole ka suust-suhu reklaam, mida rahulolevad ja lojaalsed turistid oma sõpradele teevad.

Segmenteerimise olulisust on turundusealases kirjanduses rõhutatud juba pikemat aega. Segmenteerimine tähendab heterogeense turu mingite kriteeriumite alusel väiksemateks homogeenseteks osadeks jagamist. (Wedel ja Kamakura 2000). Segmenteerimist kasutatakse turundusstrateegia tõhustamiseks, kuna see aitab kliente paremini tundma õppida ja neile täpsemalt erinevaid tegevusi suunata. Näiteks on võimalik pakkumist segmendile selliselt kohandada, et see maksimeeriks klientidele saadavat väärtust ja nad oleksid seetõttu nõus maksma hinnapreemiat, samuti on võimalik segmentide lõikes leida uusi tootearenduse võimalusi, standardiseerida tooteid, et hoida kokku kulusid ja tõhustada ka oma kommunikatsioonistrateegiat. (Bolton ja Myers 2003; Albert 2003; Beane ja Ennis 1987;Kumar *et al.* 2009) Papadopoulus (1989) on toonud välja, et külastajate profiilide määramine ja külastajate segmenteerimine nende külastusmotiivide alusel on sihtkohaturunduse planeerimise kõige tähtsam etapp. Seega võib kokkuvõtvalt öelda, et korduvkülastajate segmenteerimine on aktuaalne ja tähtis seetõttu, et see aitab suurendada sihtkohaturunduse strateegiate tõhusust ja viib turismitööstuses uute toodete ja teenuste loomiseni, mis omakorda aitab kaasa kasvule turismitööstuses.

Töö eesmärk ja uurimisobjekt

Töö eesmärgiks on luua raamistik korduvkülastajate segmenteerimiseks passiivse mobiilpositsioneerimise andmeid kasutades. Kuna korduvkülastamine on sisuliselt kliendi lojaalsuse käitumuslik väljendus sihtkohaturunduse kontekstis, siis on töö fookus lisaks korduvkülastajatele ja passiivsele mobiilsele positsioneerimisele suunatud ka klientide lojaalsuse erinevatele käsitlustele.

Kuigi klientide lojaalsust on läbi aegade turundusalases teaduskirjanduses väga palju käsitletud, puudub siiski selline integreeritud käsitlus, mis võimaldab kliente või külastajaid üldse erinevat liiki lojaalsuse alusel erinevatesse segmentidesse jagada. Seega on töö eesmärgi täitmise huvides oluline selline integreeritud lähenemine klientide lojaalsusele luua.

Siiani on teaduskirjanduses korduvkülastajaid käsitletud ühe homogeense segmendina. See on tulenenud paljuski andmete puudumisest. Ametlik statistika ei paku uurijatele palju infot külastuste motiivide kohta. Paljud EL riigid, nagu ka Eesti ei registreeri enam piiril EL sisepiiril turismistatistikat. Ööbimiste kohta majutusasutustelt statistikaametitele esitatav informatsioon võib olla aga moonutatud maksudest kõrvale hoidmise soovi tõttu. Paljudes riikides (ka Eestis) ei koguta üldse mingeid andmeid korduvkülastuste kohta. Tehnoloogia arenedes on aga tekkinud uusi võimalusi turismi uurimiseks ja vastavate andmete registreerimiseks. Üks selline on passiivne mobiilpositsioneerimine (PMP), mis põhineb mobiiltelefonide geograafilise asukoha määramisel erinevatel ajahetkedel. Autori hinnangul pakub PMP piisaval hulgal andmeid, mis annab võimaluse korduvkülastajaid põhjalikumalt uurida ja neid segmenteerida. Seega üritabki autor välja selgitada, milliseid korduvkülastajate segmente ja kuidas on võimalik PMP andmeid kasutades kindlaks teha. Eelnevast tulenevalt on eesmärgi saavutamiseks püstitatud järgmised uurimisülesanded:

1. analüüsida sihtkohalojaalsuse ja klientide lojaalsuse erinevaid käsitlusi, et mõista korduvkülastuste olemust;
2. analüüsida seoseid korduvkülastuste, turismi, koha- ja sihtkohaturunduse vahel, et mõista korduvkülastuste motiive;
3. süstematiseerida erinevad lojaalsuse liigid, mille alusel on võimalik luua korduvkülastajate lojaalsuse lõikes segmenteerimiseks teoreetiline aluspõhi;
4. tuua välja korduvkülastajate segmenteerimiseks vajalik metodoloogia;
5. selgitada empiiriliselt välja erinevate lojaalsussegmentide olemasolu ja nende eristamise vajalikkus;
6. selgitada empiiriliselt välja, kas PMP meetod on võimeline pakkuma korduvkülastajate segmenteerimiseks vajalikke andmeid ja kas loodud teoreetiline aluspõhi korduvkülastajate segmenteerimiseks on empiiriliste andmete peal rakendatav;
7. analüüsida kriitiliselt PMP ja kogu loodava raamistiku nõrkusi korduvkülastajate segmenteerimisel.

Töö uudsus

Käesolev töö pakub mitmeid uudseid aspekte. Esiteks juba töö üldine fookus on uudne. Sihtkohaturunduse alane kirjanduses on rõhuasetus viimasel ajal palju brändingu poole nihkunud. Mõeldakse järjest rohkem sellele, kuidas kohti ja sihtkohti diferentseerida, kuidas luua sihtrühmade jaoks atraktiivne ja ligitõmbav koha kuvand.(Karavatzis 2005; Skinner 2008 ja Rainisto 2003) Samal ajal ettevõtteturunduses on järjest tugevnemas suhteturunduse suund, mis väärtustab klientide lojaalsust ja pikaajalisi suhteid erinevate osapooltega. Põhjused sellele said toodud juba töö aktuaalsust käsitlevas osas. Seega võib pidada uudseks, et koha- ja sihtkohaturundust käsitletakse suhteturunduse kontekstis ja keskendutakse korduvkülastajate analüüsimisele.

Teine uudne aspekt on andmete kogumise meetod. Suhteturunduse põhimõtete rakendamine ettevõtete poolt on osalt teoks saanud tänu IT lahenduste arengule, mis on võimaldanud koguda ja säilitada olulist infot klientide kohta. Riiklikul tasemel selliseid infokogumise süsteeme siiani juurutatud ei ole. Mobiiltelefonide kasutamise andmed pakuvad nüüd selliste süsteemide loomiseks uusi võimalusi. Käesolevas töös tutvustatakse passiivse mobiilpositsioneerimise meetodit ja uuritakse selle võimekust pakkuda tõhusama sihtkohaturunduse tarbeks vajalikke andmeid.

Kolmas uudne aspekt on külastajate mõiste laiendamine. Kui tavaliselt mõistetakse turismi ja sihtkohaturunduse alases kirjanduses külastaja all puhkusereisil olevat turisti, siis käesolevas töös laiendatakse seda mõistet oluliselt ja külastaja all mõistetakse ka kohaturunduse sihtgruppe nagu näiteks ärireisijad, potentsiaalsed ümberasujad, töötajad, õppijad jmt

Neljandaks uudseks asjaoluks on juba eelnevalt mainitud integreeritud klientide lojaalsuse käsitluse loomine. Senised käsitlused olid enamjaolt binaarsed, mille järgi sai kliente liigitada kas lojaalseteks või mittelojaalseteks. Samuti välistasid erinevad definitsioonid teineteist. Käesolevas töös erinevad klientide lojaalsuse käsitlused süstematiseeritakse ja pakutakse välja uus kõiki käsitlusi liitev kontseptsioon.

Viimase uudse asjaoluna võib välja tuua ka juba eelnevalt mainitud korduvkülastajate segmenteerimise. Kui mõned üksikud erandid nagu Oppermann (2000) ja Baloglu (2001) välja arvata, siis nagu öeldud, on siiani korduvkülastajaid peamiselt käsitletud ühe homogeense segmendina. Käesolevas töös aga lähtutakse korduvkülastajate heterogeensusest ja üritatakse luua raamistik, kuidas luua ja leida homogeenseid korduvkülastajate segmente.

Uurimismetoodika ja töö struktuur

Töö koosneb kolmest osast: teoreetilisest, empiirilisest ja sünteesivast osast. Teoreetiline osa koosneb kahest peatükist, millest esimeses võrreldakse klientide lojaalsuse erinevaid käsitlusi ning luuakse uus integreeritud klientide lojaalsuse käsitlus. Samuti uuritakse seal sihtkohalojaalsuse olemust ja tuuakse välja erinevad võimalikud korduvkülastajate segmendid.

Teoreetilise osa teises peatükis keskendutakse metoodikale, kus esmalt tuuakse välja erinevad karakteristikud, mille alusel saab klientide lojaalsust mõõta, seejärel tutvustatakse PMP meetodit ja tuuakse välja selle positiivsed küljed ja nõrgad kohad. Eraldi tähelepanu saab eetika ja külastajate privaatsuse tagamise teema. Peatükk lõpeb empiirilistes uuringutes kasutatud meetodite välja toomisega, kus muuhulgas on näidatud, milliste PMP meetodi abil saadud karakteristikutega milliseid korduvkülastajate segmente üritati empiirilises uurimuses välja selgitada.

Empiiriline osa põhineb kolmel artiklil. Vastavalt Jacoby ja Chestnut'i (1978) käsitlusele on lojaalsust võimalik uurida kahel tasandil: mikro- ja makrotasandil. Esimene käsitleb indiviidi tasemel hoiakuid ja põhjuseid, miks lojaalne ollakse, teine aga piirdub turu või inimkogumite käitumuslike andmete analüüsiga, andes hinnanguid, kui lojaalne üks või teine kliendigrupp on ja minemata põhjuste juurde, et miks lojaalne ollakse. Kõik kolm artiklit analüüsivad klientide või külastajate lojaalsust erineval tasemel. Esimene artikkel uurib mikrotasemel ühe Eesti suurettevõtte tuhande kliendi jagunemist erinevatesse lojaalsussegmentidesse ja mõjutegureid, mis mõjutavad klientide liikumist erinevate lojaalsussegmentide vahel. Selleks kasutatakse LOGIT mudelit ja eesmärgiks on selgitada välja, kas klientide lojaalsuse alusel segmenteerimisel on üldse mõtet.

Teises empiirilises uurimuses analüüsitakse makrotasemel külastajate käitumist ja eesmärgiks on luua metoodika, kuidas eristada külastajate telefonikasutuse andmete alusel korduvkülastusi. Ehk teisisõnu üritatakse leida vastus küsimusele, et kui pikk peab olema paus inimese kõnetoimingutes, et võiks olla kindel , et inimene on vahepeal riigist lahkunud ja tagasi tulnud.

Uuring baseerub mobiiloperaatori EMT võrgus perioodil 23.04.2005–31.01.2009 välisriigis registreeritud telefoniga tehtud kõnetoiminute andmete analüüsil.

Kolmas artikkel sisaldab nii makro- kui mikrotaseme analüüsi, kus (käitumuslike) kõnetoimingute andmete alusel on tehtud järeldusi külastajate külastusmotiivide kohta ja selle alusel on jõutud Eestit külastanud korduvkülastajate segmenteerimiseni. Artiklis analüüsitud andmed sisaldasid Eestit külastanud välisriigis registreeritud 2,38 miljoni telefoni poolt perioodil 23.04.2005–30.09. tehtud 32 miljonit kõnetoimingut.

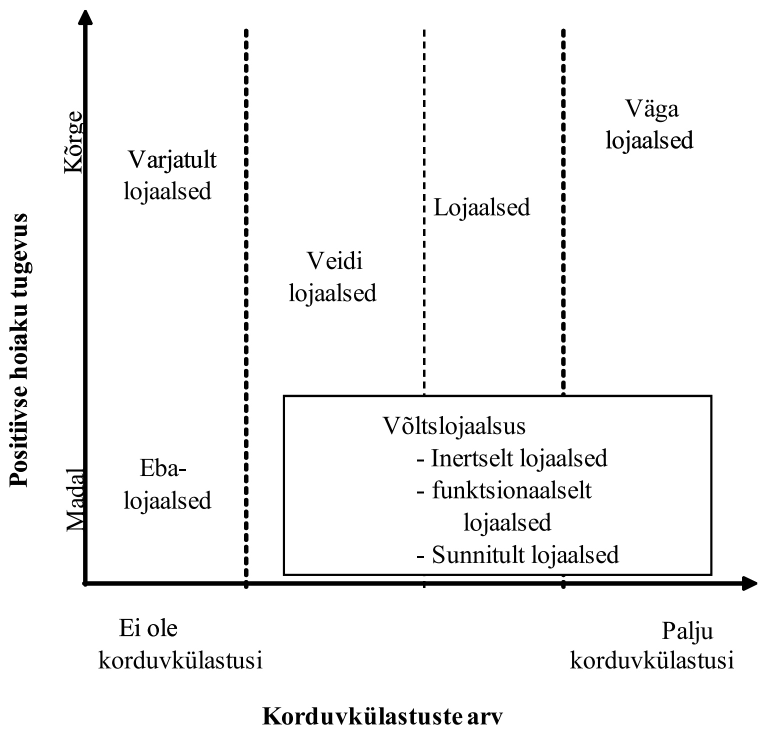
Töö sünteesivas osas tuuakse lühidalt välja empiiriliste uuringute põhitulemused ja üritatakse neid seejärel ühitada teoreetilise osa seisukohta. Välja on toodud ka tulemuste praktiline tähtsus, piirangud ja edasiste uuringute võimalikud suunad.

Teoreetiline taust

Termin ”*lojaalsus*” pärineb vanast prantsuse keelsest sõnast ”*loialte*” ja kaudsemalt ladinakeelsest väljendist ”*lex*” ning tähendas algselt ustavat poolehoidu oma lubaduse või vande suhtes. Samuti ustavust endast kõrgemal seisja, valitsuse liikmete, kohustuste, printsiibi vmt. suhtes. Filosoofilises kirjanduses ei ole lojaalsuse mõistet siiani väga palju käsitletud. Üks kuulsamaid teoseid selles vallas on Josiah Royce'i poolt 1908. aastal kirjutatud raamat pealkirjaga ”*The Philosophy of Loyalty*”.

Klientide lojaalsust on seevastu turundusalases teaduskirjanduses käsitletud suhteliselt palju. Peamisel jagunevad erinevate autorite käsitlused kolmeks: käitumuslikeks, mille raames käsitleti klientide lojaalsust kui funktsiooni kliendi samas tootekategoorias tehtud koguostude osakaalust, funktsiooni korduvkäitumise sagedusest või mustrist või kui tõenäosust sooritada kordusost. Teiseks, suhtumuslikeks, mille raames käsitleti klientide lojaalsust kui kiindumust, hoiaku muutumatust, kui soovi suhet jätkata ja selle nimel valmisolekut isegi midagi ohverdada jmt. Kolmandaks, multidimensionaalseteks, mille raames võeti käesolevas töös vaatluse alla kaks enim tsiteeritud käsitlust. Üks neist on 1973 Jacoby ja Kyner'i poolt välja pakutud lojaalsuse definitsioon: *Lojaalsus on mingi otsustajate grupi mõjutatav (mitte juhuslik), aja jooksul korduv käitumine (ost), kus eelistatakse üht või mitut brändi mingist kindlast brändide hulgast, ja mis on psühholoogilise protsessi funktsioon.* Seda definitsiooni muudeti autori poolt, kaotades ära nõude, et lojaalsus peab avalduma alati ostu näol, mis ei ole kooskõlas ei lojaalsuse filosoofilise olemusega ega ka mitte tänase praktikaga, kus ettevõtted hindavad väga olulisteks ka soovitusi, mida lojaalsete ja rahulolevate klientide poolt oma tuttavatele edastatakse. Samuti võeti käesolevas töös algsest definitsioonist välja nõue, et lojaalsuse olemasoluks peab olema võimalus valida mingist kindlast brändide hulgast, mis samuti ei ühti lojaalsuse filosoofilise olemusega.

Teiseks analüüsiti Dick ja Basu poolt 1994 välja pakutud käsitlust, mis määratles lojaalsuse olemasolu läbi brändile suunatud suhtelise hoiaku tugevuse ja korduvkäitumise määra. Nimetatud käsitluses muudeti suhtelise hoiaku tugevuse telg positiivse hoiaku tugevuse teljeks. Nimetatud muudatused võimaldasid süstematiseerida ülejäänud klientide lojaalsuse käsitlused ja tõsta nad sihtkohaturunduse konteksti. Sellest tulenevalt pakuti välja sihtkohalojaalsuse definitsioon ja külastajate võimalikud segmendid (vt joonis 1) *Sihtkohalojaalsus on mingi reisijatega seotud otsustajate grupi mõjutatav (mitte juhuslik), aja jooksul korduv primaarne või sekundaarne käitumine, kus eelistatakse üht või mitut geograafilist ala või muud sihtkoha ja mis on psühholoogilise protsessi funktsioon.*

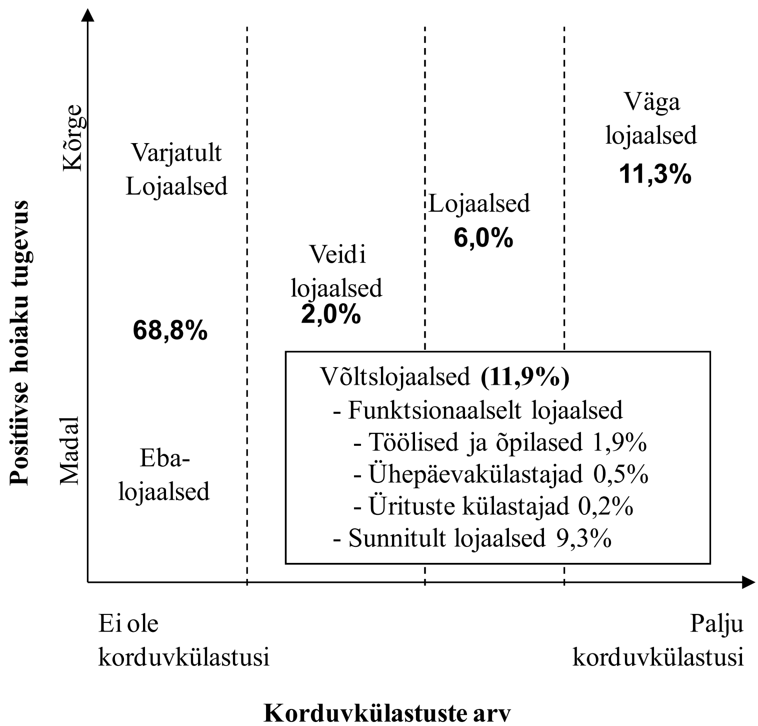


Joonis 1. Korduvkülastajate segmendid. Autori koostatud.

Joonisel 1 toodud segmente saab määrata nii otsese kui kaudse meetodiga. Otsese meetodi puhul segmenteeritakse külastajad otse nende käitumise järgi. Näiteks on turistid võimalik korduvkülastuste sageduse järgi jagada nii “väga lojaalseteks”, “lojaalseteks kui ka “veidi lojaalseteks”. Kaudse meetodi puhul määratakse aga käitumuslike andmete alusel esmalt külastaja tüüp ja seejärel tema kuuluvus mõnda segmenti.

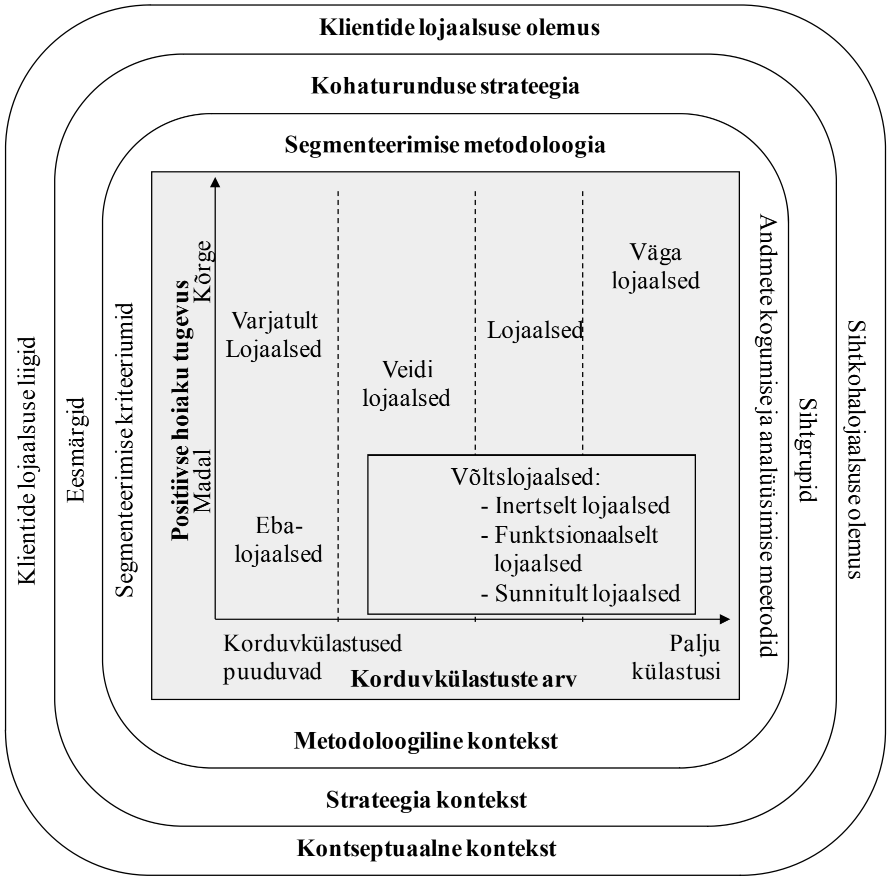
Analüüsi tulemused ja järeldused

Töö tulemusena selgus, et senised lojaalsuse käsitlused olid liiga kitsad, sest erinevad lojaalsuse liigid eksisteerivad ja on olulised, sest neile tuleb rakendada erinevaid strateegiaid. Teisest uurimusest selgus, et optimaalne kõnetoimingute vahe on 154 tundi, mis sai võetud järgmises uuringus kriteeriumina kasutusele. Kolmanda uuringu käigus õnnestus ära kirjeldada Eestit külastanud inimeste jaotumine erinevatesse lojaalsussegmentidesse, mis on toodud joonisel 2.



Joonis 2. Korduvkülastajate jagunemine segmentidesse Eestis. Autori koostatud.

Kokkuvõttes selgus, et korduvkülastajate segmenteerimise raamistik (joonisel 3 keskel) on ümbritsetud kolmest kontekstist. Kõige laiem kontekst on kontseptuaalne kontekst (joonisel 3 kõige laiem ring), mis tulenevalt kliendi lojaalsuse teoreetilisest olemusest määratleb ära võimalikud lojaalsuse liigid ja sihtkohalojaalsuse olemuse.



Joonis 3. Korduvkülastajate segmenteerimise raamistik kolme konteksti taustal. Autori koostatud.

Strateegia kontekst on kui vahetasand kontseptuaalse ja metodoloogilise konteksti vahel (keskmine ring joonisel 3), määratledes läbi kohaturunduse eesmärkide, miks mingeid segmente soovitakse leida, ning läbi sihtgruppide, milliseid segmente soovitakse leida, ehk keda võetakse külastajana vaatluse alla. Metodoloogiline kontekst (joonisel 3 kõige kitsam ring) määratleb lähtudes eelnevatest kontekstidest ning PMP meetodi võimalustest ja piirangutest segmenteerimise kriteeriumid ning andmete kogumise ja analüüsimise meetodid.

Käesoleva dissertatsiooni tulemused on kasulikud kolmele osapoolele: valitsusele, erasektorile ja teadlastele. Valitsusele annab loodud raamistiku kasutamine eelduse sihtkohaturunduse strateegiate tõhustamiseks läbi täpsema sihtimise. Edaspidi on võimalik suunata fookus korduvkülastajatele ning on olemas ka võimalus püstitada ja mõõta täpsemaid taktikalisi eesmärke. Teades erinevate segmentide korduvkülastuste motiive, on võimalik neile paremini kujundada saadavat elamust ja seeläbi neid segmente lojaalsemaks muuta.

Erasektori peamine kasu antud tööst seisneb erinevate segmentide suuruse ja ruumiliste liikumistrajektooride tuvastamise võimaluses, mis vähendab erinevate teenusepakkujate riske uute teenuste loomisel või uute teeninduspunktide avamisel.

Teadlaste jaoks selgus antud tööst, et korduvkülastajate seas on erinevate motiividega erinevaid segmente, mistõttu ei ole korrektne korduvkülastajaid käsitleda ühe homogeense grupina. Teiseks selgus, et lisaks traditsiooniliselt palju uuritud puhkuseturistidele, on olemas veel teisi huvitavaid ja tähtsaid segmente, keda uurida. PMP meetod võimaldab samas ka tuvastada nende segmentide ligikaudse suuruse, et oleks võimalik hinnata konkreetsete segmentide puhul nende edasise sügavama uurimise tähtust ja vajalikkust.

Piirangud ja soovitused edasisteks uuringuteks

Tööga seotud piirangud jagunevad tehnoloogilisteks ja metodoloogilisteks. Esimeste alla kuuluvad: privaatsuse tagamisest tulenevad ebatäpsused andmetes; andmete kättesaadavusest tulenevad valimi ebatäpsused, sest kui kõik operaatorid ei taga andmetele ligipääsu, siis võivad domineerima hakata mingi konkreetse riigi külastajad, kellel on soodne roamingleping konkreetse operaatoriga. Kolmandaks on tehnika kasutamisest tulenev kallutatus – erinevatest kultuuriruumides on inimesed mobiiltelefoni harjunud erinevalt kasutama. Neljandaks on kirjanduses välja toodud puudus, et mobiiltelefonid näitavad kaudset asukohta, piirdudes ainult võrgusõlmega. Osades piirkondades on võrgusõlmi tihedamalt osades hõredamalt.

Metodoloogilistest piirangutest olulisem on korduvkülastuse eristamise algoritm, mille sobivust ja kehtivust tuleb edasistes uuringutes veel kontrollida. Samuti on vaja tulemusi kontrollida erinevate rahvuste peal – tõenäoliselt on korduvkülastuste sageduse kriteerium soomlaste puhul erinev võrreldes sakslaste või hispaanlastega, kellel on oluliselt kaugem tulla Eestit külastama. Kolmandaks on käesolevas töös kasutatud peamiselt deskriptiivset statistikat, mistõttu tulevikus tuleks leitud segmentide homogeensust kontrollida ka keerulisemate statistiliste meetoditega.

Edasiste uuringute osas võibki välja tuua kõigepealt jätkuvat tööd segmentide tuvastamisel. Esiteks on seda võimalik teha erinevaid kriteeriumeid kombineerides ja veelgi täpsemaks minnes. Teiseks, kaasates lisaks PMP andmestikule ka küsitluste andmeid, et oleks võimalik saada adekvaatsem pilt korduvkülastajate motiivide ja hoiakute osas. Ja kolmandaks, rakendada keerulisemaid andmeanalüüsi meetodeid (näiteks klasteranalüüsi) et leida uusi segmente või kinnitada juba leitud segmentide olemasolu. Üks suund millega edasi minna, on PMP andmete või ka lisaküsimustike abil erinevate korduvkülastajate segmentide majandusliku väärtuse hindamine, et oleks võimalik riigil prioriteete seada, milliste segmentidega esmajärjekorras tegeleda. Kui käesolev töö keskendus korduvkülastajatele ja nende segmenteerimisele, siis üks suund tulevikuks oleks ka ühekordsete külastajate käitumise analüüsimine, et selgitada välja, kuidas neid korduvkülastajateks muuta.

CURRICULUM VITAE

Name:	ANDRES KUUSIK
Place and date of birth:	16.07.1975, Viljandi
Nationality:	Estonian
E-mail:	andres.kuusik@ut.ee
Position:	Lecturer (0.7), Chair of Marketing, Institute of Business Administration, Faculty of Economics and Business Administration, University of Tartu. Researcher (0.3) Chair of Human Geography and Regional Planning, Department of Geography, Institute of Ecology and Earth Sciences, Faculty of Science and Technology, University of Tartu.

Education:

2005 – ...	Doctoral student, University of Tartu
1998 – 2005	MA (Econ) University of Tartu
1997 – 1998	Master's student in EuroFaculty
1993 – 1997	BA (Econ) University of Tartu
1982 – 1993	Viljandi 5 Secondary School (silver coin)

Foreign languages: English, German

Empoyment:

2011– …	Lecturer (0.7), Chair of Marketing, Institute of Business Administration, Faculty of Economics and Business Administration, University of Tartu.
2011– …	Researcher (0.3) Chair of Human Geography and Regional Planning, Department of Geography, Institute of Ecology and Earth Sciences, Faculty of Science and Technology, University of Tartu. Marketing Lecturer.
2008–2011	Lecturer (1.0), Chair of Marketing, Institute of Business Administration, Faculty of Economics and Business Administration, University of Tartu.
2007–2008	Researcher (1.0), Chair of Marketing, Institute of Business Administration, Faculty of Economics and Business Administration, University of Tartu.
2003–2007	Field Manager (investments and sales planning), Elion Ettevõtted AS

2002–2003	Manager, Sales Strategy Department; AS Eesti Telefon Teleteenused;
1998–2002	Manager, Private Customers' Marketing Department, AS Eesti Telefon Teleteenused;
1997–2000	CEO, OÜ Hendrikson & Ko
1996–1997	Marketing Director, AS Raatuse Kaubamaja;
1995–1996	Consultant (marketing and finance), AS Kivisilla Kaubamaja;

I Academic work

Field of research: Culture and Society, Economics (consumer behaviour, customer loyalty, destination marketing)

Research grants and projects:
The path-dependent model of the innovation system: development and implementation in the case of a small country.
The impact of internationalisation on the innovativeness of firms.
The internationalisation processes: a typology, frequency and impact factors.

II Teaching (2007 – to date)

Lectures

Marketing (BA and MBA level)
Marketing Management (BA and MBA level)
Consumer Behaviour (MBA level)
Marketing of Innovative Products and Services (MBA level)
Business to Business (B2B) and Service Marketing (MBA level)
Master's seminar (MBA level)

Supervision of student theses (successfully defended)

MA level (1 student),
MBA level (50 students),
BA level (28 students),
Individual Project (20 students).

CURRICULUM VITAE IN ESTONIAN

Nimi:	ANDRES KUUSIK
Sünniaeg:	16. juuli 1975.a., Viljandi
Kodakondsus:	eestlane
E-mail:	andres.kuusik@ut.ee
Töökoht	Lektor (0,7), turunduse õppetool, ettevõttemajanduse instituut, majandusteaduskond, Tartu Ülikool Teadur (0,3), inimgeograafia ja regionaalplaneerimise õppetool, geograafia osakond, ökoloogia ja maateaduste instituut, Loodus- ja tehnoloogiateaduskond, Tartu Ülikool

Haridus:

2005–...	TÜ majandusteaduskonna doktorant
2005	kaitstud TÜ majandusteaduskonnas magistritöö teemal “Kliendi lojaalsus ja seda mõjutavad tegurid Elion ettevõtted AS näitel. Kaitstud teaduslik kraad MA (maj.) TÜ majandusteaduskonna välismajanduse õppetooli magistrant
1998–2000	TÜ majandusteaduskonna välismajanduse õppetooli magistrant
1997–1998	EuroFaculty majandusmagistrant
1993–1997	TÜ majandusteaduskonna välismajanduse ning turunduse erialade üliõpilane (BA majandusteaduses)
1993	Viljandi 5. Keskkool (hõbemedal)

Võõrkeeled: inglise keel, saksa keel

Teenistuskäik:

2011–…	Lektor (0,7), turunduse õppetool, ettevõttemajanduse instituut, majandusteaduskond, Tartu Ülikool
2011–…	Teadur (0,3), inimgeograafia ja regionaalplaneerimise õppetool, geograafia osakond, ökoloogia ja maateaduste instituut, Loodus- ja tehnoloogiateaduskond, Tartu Ülikool
2008–2011	Lektor (1,0), turunduse õppetool, ettevõttemajanduse instituut, majandusteaduskond, Tartu Ülikool
2007–2008	Erakorraline teadur(1,0), turunduse õppetool, ettevõttemajanduse instituut, majandusteaduskond, Tartu Ülikool
2003–2007	Valdkonnajuht (võrguinvesteeringute ja müügivõimaluste planeerimine) Elion Ettevõtted AS

2002–2003	Müügistrateegia osakonnajuhataja; AS Eesti Telefon Teleteenused
1998–2002	Eraklientide turundusosakonna juhataja; AS Eesti Telefon Teleteenused
1997–2000	juhatuse esimees OÜ Hendrikson & Ko
1996–1997	marketingidirektor AS Raatuse Kaubamaja
1995–1996	konsultant (marketing ja finantsanalüüs) AS Kivisilla Kaubamaja

Tunnustused:
2010 – Erich Rannu stipendium
2010 – Doktorantide populaarteaduslike artiklite konkursi esikoht
2011 – Rein Otsasoni Fondi stipendium

I Teaduslik tegevus

Peamised uurimisvaldkonnad:
Tarbijakäitumine. Kliendi lojaalsus, selle mõõtmine ja seda mõjutavad tegurid, tarbijakäitumine. lojaalsuse roll turismiteenuste ekspordil

Projektid:
Innovatsioonisüsteemi rajasõltuvust arvestava mudeli loomine ja rakendus-mehhanismi väljatöötamine väikeriigi näite.
Rahvusvahelistumise mõju ettevõtete innovaatilisusele.
Rahvusvahelistumise protsessid: tüpoloogia, esinemissagedus ja mõjutegurid.

II Õppetöö

Auditoorne õppetöö
Turundus (bakalaureuse ja magistri tasemel)
Turunduse juhtimine (bakalaureuse ja magistri tasemel)
Tarbijakäitumine (magistri tasemel)
Innovaatiliste toodete ja teenuste turundus (magistri tasemel)
Ärisektori ja teenuste turundus (magistri tasemel)
Magistriseminar (magistri tasemel)

Juhendamine:
51 magistritööd,
28 bakalaureusetööd,
20 uurimistööd.

DISSERTATIONES RERUM OECONOMICARUM UNIVERSITATIS TARTUENSIS

1. **Олев Раю.** Экономическая ответственность и ее использование в хозяйственном механизме. Tartu, 1994. Kaitstud 20.05.1991.
2. **Janno Reiljan.** Majanduslike otsuste analüütiline alus (teooria, metodoloogia, metoodika ja meetodid). Tartu, 1994. Kaitstud 18.06.1991.
3. **Robert W. McGee.** The theory and practice of public finance: some lessons from the USA experience with advice for former socialist countries. Tartu, 1994. Kaitstud 21.06.1994.
4. **Maaja Vadi.** Organisatsioonikultuur ja väärtused ning nende vahelised seosed (Eesti näitel). Tartu, 2000. Kaitstud 08.06.2000.
5. **Raul Eamets.** Reallocation of labour during transition disequilibrium and policy issues: The case of Estonia. Tartu, 2001. Kaitstud 27.06.2001.
6. **Kaia Philips.** The changes in valuation of human capital during the transition process in Estonia. Tartu, 2001. Kaitstud 10.01.2002.
7. **Tõnu Roolaht.** The internationalization of Estonian companies: an exploratory study of relationship aspects. Tartu, 2002. Kaitstud 18.11.2002.
8. **Tiia Vissak.** The internationalization of foreign-owned enterprises in Estonia: An extended network perspective. Tartu, 2003. Kaitstud 18.06.2003.
9. **Anneli Kaasa.** Sissetulekute ebavõrdsuse mõjurite analüüs struktuurse modelleerimise meetodil. Tartu, 2004. Kaitstud 15.09.2004.
10. **Ruth Alas.** Organisational changes during the transition in Estonia: Major influencing behavioural factors. Tartu, 2004. Kaitstud 22.12.2004.
11. **Ele Reiljan.** Reasons for de-internationalization: An analysis of Estonian manufacturing companies. Tartu, 2004. Kaitstud 25.01.2005.
12. **Janek Uiboupin.** Foreign banks in Central and Eastern European markets: their entry and influence on the banking sector, Tartu, 2005. Kaitstud 29.06.2005.
13. **Jaan Masso.** Labour Reallocation in Transition Countries: Efficiency, Restructuring and Institutions, Tartu, 2005. Kaitstud 7.11.2005.
14. **Katrin Männik.** The Impact of the Autonomy on the Performance in a Multinational Corporation's Subsidary in Transition Countries, Tartu, 2006. Kaitstud 29.03.2006.
15. **Andres Vesilind.** A methodology for earning excess returns in global debt and currency markets with a diversified portfolio of quantitative active investment models, Tartu, 2007. Kaitstud 13.06.2007.
16. **Rebekka Vedina.** The diversity of individual values and its role for organisations in the context of changes, Tartu, 2007. Kaitstud 16.11.2007.
17. **Priit Sander.** Essays on factors influencing financing decisions of companies: risk, corporate control and taxation aspects, Tartu, 2007. Kaitstud 19.12.2007.
18. **Kadri Ukrainski.** Sources of knowledge used in innovation: an example of Estonian wood industries. Tartu, 2008. Kaitstud 22.04.2008.

19. **Kristjan-Olari Leping.** Heterogeneity of human capital and its valuation in the labour market. Tartu, 2008. Kaitstud 14.05.2008.
20. **Kadri Männasoo.** Essays on financial fragility – evidence from the corporate and banking sectors in Central and Eastern Europe. Tartu, 2008. Kaitstud 26.05.2008.
21. **Made Torokoff.** Patterns of learning organisation – Estonian experiences. Tartu, 2008. Kaitstud 30.06.2008.
22. **Helena Rozeik.** Changes in ownership structures, their determinants and role in the restructuring of enterprises during transition: evidence from Estonia. Tartu, 2008. Kaitstud 31.10.2008.
23. **Jaanika Meriküll.** Technological change and labour demand. Tartu, 2009. Kaitstud 19.05.2009.
24. **Anne Aidla.** The impact of individual and organisational factors on academic performance in estonian general educational schools. Tartu, 2009. Kaitstud 18.06.2009.
25. **Alexander Gofman.** Experimentation-Based Product Development in Mature Food Categories: Advancing Conjoint Analysis Approach. Tartu, 2009. Kaitstud 21.09.2009.
26. **Anne Reino.** Manifestations of organizational culture based on the example of Estonian organizations. Tartu, 2009. Kaitstud 06.11.2009.
27. **Krista Jaakson.** Management by values: the analysis of influencing aspects and its theoretical and practical implications. Tartu, 2009. Kaitstud 12.11.2009.
28. **Eve Parts.** Social capital, its determinants and effects on economic growth: comparison of the Western European and Central-Eastern European countries. Tartu, 2009. Kaitstud 18.12.2009.
29. **Egle Tafenau.** Welfare effects of regional policy in the constructed capital model. Tartu, 2010. Kaitstud 22.03.2010.
30. **Epp Kallaste.** Employee workplace representation: an analysis of selected determinants. Tartu, 2010. Kaitstud 21.06.2010.
31. **Danel Tuusis.** Interest rate influence on the behavior of economic subjects. Tartu, 2010. Kaitstud 22.10.2010.
32. **Elina Kallas.** Emotional intelligence, organizational culture and their relationship based on the example of Estonian service organizations. Tartu, 2010. Kaitstud 17.11.2010.
33. **Dorel Tamm.** Alignment between the factors of the innovation process and public sector innovation support measures: an analysis of Estonian dairy processors and biotechnology enterprises. Tartu, 2010. Kaitstud 16.12.2010.
34. **Rasmus Kattai.** The links between private sector indebtedness and banking sector vulnerability: An Estonian case study. Tartu, 2010. Kaitstud 17.01.2011.
35. **Kurmet Kivipõld.** Organizational Leadership Capability and its evaluation based on the example of Estonian service organizations. Tartu, 2011. Kaitstud 4.05.2011.

36. **Janno Järve.** Downward Nominal Wage Rigidity in the Estonian Private Sector. Tartu, 2011. Kaitstud 21.06.2011.
37. **Kristina Toming.** The impact of integration with the European Union on the international competitiveness of the food processing industry in Estonia. Tartu, 2011. Kaitstud 21.06.2011.
38. **Andrus Kotri.** Customer experience evoking and management in services. Tartu, 2011. Kaitstud 26.08.2011.