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Developing Market Segmentation in Tourism: Insights from a Finnish Rural Tourism Study

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ABSTRACT

This dissertation explores options for improving the success of market segmentation research by testing different market segmentation methods and effects of information and communication technologies (ICTs) in tourism research. The purpose of this study is to increase the success of market segmentation research in the field of travel and tourism. The context of this study is rural tourism in Finland, which is regarded as an important source of revenue for many rural areas and a field where information on data-driven market segmentation is practically non-existent. This dissertation consists of four papers, all discussing the topic of market segmentation in tourism. The theoretical basis of this study lies within the discipline of marketing and relies on the assumption that markets are heterogeneous, and that through market research it is possible for businesses to diversify their offerings to suit the needs and wants of specific segments in a way that creates value both for the customer as well as the company. Market segmentation is one of the cornerstones of marketing the management paradigm and its usefulness has been demonstrated repeatedly both in the academic literature and by practitioners. This study adapts a postpositivistic research paradigm to study the possibilities for improving market segmentation theory and methodology. By means of a literature review and two surveys of Finnish rural tourism websites data is collected on the impact of ICTs on market segmentation in tourism as well as the needs and wants of Finnish rural tourists. This study provides evidence that the academic market segmentation literature does indeed identify segments that also exist in practice, thus bridging the gap between academic and practice, and contributes to the way market segmentation is conducted in travel and tourism.

Keywords: market segmentation, rural tourism, eTourism, ICT, travel motivations

ABSTRAKTI

Väitöskirja tarkastelee keinoja parantaa markkinasegmentoinnin tuloksia ja seg-
mentointimenetelmiä matkailututkimuksessa käyttämällä informaatio- ja kom-
munikaatioteknologioiden kehittämiä mahdollisuuksia. Tässä työssä kontekstina
on maaseutumatkailu Suomessa. Artikkelit käsittelevät aihepiirin eri osa-alueita
kuten informaatio- ja kommunikaatioteknologian vaikutusta matkailijoiden
segmentointiin ja sen tutkimukseen, matkailijoiden motivaatioiden käyttämistä
segmentoinnin lähtökohtana, segmenttien ajallisen kestävyyden mittaustapo-
ja ja mittaamista sekä motivaatioihin perustuvien segmenttien vertailua aktivi-
teettisegmentteihin sen perusteella, miten eri segmentit käyttävät internetiä tie-
don etsimiseen. Tutkimus sijoittuu teoreettisesti markkinointikirjallisuuteen.
Lähtökohtaisena oletuksena on, että markkinat ovat heterogeenisiä ja että markki-
natutkimuksen avulla yritysten on mahdollista erilaistaa tuotteensa ja palvelunsa
tietyille asiakasryhmille sopiviksi siten, että ne tuottavat arvoa sekä yritykselle
että sen asiakkaille. Tässä tutkimuksessa käytetään postpositivistista tutkimus-
paradigmaa selvittämään mahdollisuuksia kehittää segmentoinnin teoriaa ja me-
netelmiä. Kirjallisuuskatsauksen ja kahden internet-sivuilla levitetyn kyselytutki-
muksen avulla on kerätty aineistoa informaatio- ja kommunikaatioteknologioiden
vaikutuksesta matkailijoiden segmentointiin sekä suomalaisten maaseutumatkai-
lijoiden toiveista ja tarpeista lomansa suhteen. Näiden tutkimusten tuloksien pe-
rusteella tutkitaan eri mahdollisuuksia markkinoiden segmentoinnin kehittämi-
seksi. Tämä tutkimus myös osoittaa, että akateemisten segmentointitutkimusten
tulokset voivat olla yrityselämälle hyödyllisiä.

Asiasanat: segmentointi, maaseutumatkailu, eMatkailu, ICT, matkustusmotivaatiot

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1 Introduction

"Failure to understand the importance of market segmentation is the principal reason for failure to compete effectively in world markets." (McDonald & Wiley, 2011, pp. 11)

1.1 MOTIVATION FOR THIS STUDY

Travel and tourism are important industries in many countries, providing both economic growth and employment (Yannopolous & Rotenberg, 1999). According to World Tourism Organization (UNWTO, 2013a) tourism has become one of the major players in international commerce. This growth goes hand in hand with increasing competition among destinations as well as diversification in tourism offerings. Organizations such as tourism businesses search for competitive advantage to survive in the global marketplace and the success of an organization is heavily dependent on its ability to market itself better than its competitors. Companies need to develop sound strategies to keep up with ever increasing competition.

One strategic marketing tool capable of generating competitive advantage is market segmentation. Segmentation studies proliferate in industry as well as in tourism research (Prebensen, 2006). According to Matzler, Pechlaner and Hattenberger (2004) market segmentation aids companies to gain a better position in the marketplace as it helps in understanding customers and in shaping the offering to better match customers' needs and wants. The importance of market insight regarding tourism markets has been also recognized by the Finnish Ministry of Trade and Industry (2006) as the current level of knowledge has been recognized to be inadequate.

Segmentation of individual consumers and customers has very long traditions going back to Hippocrates' typology of people on the basis of physical attributes in the fifth century BC (Dolnicar, 2002). Markets have been segmented and products and services differentiated as long as suppliers have differed in their methods of competing for trade (Dickson & Ginter, 1987). Modern market segmentation, however, is based on the work of Wendell Smith (1956) but it was not until Wind's (1978) review of the state of market segmentation that the topic went to the top of the agenda for researchers and practitioners (McDonald & Wilson, 2011). Despite extensive research on market segmentation both in the general marketing literature and in the tourism marketing literature, there still remain several issues that need further research (Dibb & Simkin, 2009). Bowen (1998) states that researchers and practitioners need to keep up with the advances in marketing segmentation techniques as market segmentation is one of the most important strategic concepts contributed by the marketing discipline to business.

The development of Information and Communication Technologies (ICTs) has changed the marketing paradigm. Holland and Naude (2004) state that IT-enabled marketing innovations have caused current marketing paradigms to be inadequate in their explanatory and predictive powers. Research is needed to study the impact of the Internet on the application and role of segmentation (Dibb & Simkin, 2009). This study is a response to that challenge and contributes to the literature by studying market segmentation from the Internet marketing perspective. Lack of research combining market segmentation with ICTs is one of the main motivations as Internet marketing has risen to be one of the most critical success factors for companies.

The study at hand is also motivated by the critique presented by Sara Dolnicar (2002, 2004) and Dolnicar and Grün (2008). They raised the question of whether market segmentation in tourism has been done properly in the past and if there are still some developments to be made. Especially in market segmentation methodology there are several issues. For example Dolnicar (2003) states that the much used method of cluster analysis always renders a result, whether or not the segments actually exist in the marketplace. There is also a large amount of information available from tourists, but sample sizes are typically too low given the number of variables used to conduct segmentation analysis (Formann, 1984, Dolnicar et al., 2012). The question of solution adequacy is far from simple (Moscardo et al., 2001) and the debate over the merits of different segmentation bases has not often been systematically studied (Bonn et al., 1992; Hshieh et al., 1992, Moscardo et al., 2001).

Market segmentation in tourism can be regarded as a decidedly managerially oriented stream of research. Researchers have focused on finding segmentation solutions that managers of tourism companies can use in different contexts. As is evident from this study, managers as well as researchers have almost unlimited options in deciding on the segmentation base, choosing segmentation variables, choosing validation variables, choosing measurements for different items and statistical methods for analyzing the data as well as for measuring segmentation success. More research is needed on why one way of doing segmentation might be better than some other way in order to determine the choices that have to be made in market segmentation research.

Rural tourism has been regarded by academics as an important research context (e.g. Frochot, 2005; Royo-Vela, 2009; Molera & Albaladejo, 2007; Park & Yoon, 2009; Pesonen et al., 2009) as well as by the Finnish government (Finnish Ministry of Agriculture and Forestry, 2006). Of the 132,500 people employed by the tourism industry in Finland, ten per cent work in microenterprises in rural locations (Maaseutupolitiikka.fi, 2013). In the countryside especially tourism has a major impact on many industries including construction, food production and other services such as the retail trade. Tourism also has a huge growth potential and the attractive attributes of rural areas such as clean environment, space, tranquility and local services and culture make rural areas excellent locations for experiencing tourism (Maaseutupolitiikka.fi, 2013). Despite the excellent conditions for

producing tourism products, rural areas in Finland face many challenges. Solving problems in marketing rural tourism products in the electronic marketplace is especially important (Hyvölä, 2013). To efficiently market rural tourism products in the Internet information on the online usage behavior of rural tourists and especially rural tourism segments is essential.

Typically rural tourism companies in Finland and indeed all over the world are micro or SME businesses characterized by part-time tourism entrepreneurship, limited financial resources, limited entrepreneurial skills and a low level of commitment to the long-term development of the businesses (Komppula, 2000). Limited financial resources make promoting and advertising the services offered very challenging. As the Internet offers an efficient and cheap way to reach customers, its importance to rural tourism companies cannot be underestimated. Thus Internet marketing should be the ideal solution for rural tourism companies. Despite this, the topic of marketing rural tourism products and services over the Internet has so far received very little attention in the literature. Domestic tourists are important for rural tourism businesses in Finland and form a base on which international tourism can be build. Thus this study focuses solely on domestic rural tourism in Finland.

All these aforementioned factors have motivated this dissertation to develop the way market segmentation is and could be conducted. Contributing to the market segmentation literature also provides tools for Finnish rural tourism companies to understand their customers and the markets they operate in and to increase their knowledge on marketing rural tourism products in the Internet. A more detailed account of the need for this study is presented in the following chapter.

1.2 RESEARCH PROBLEM

Empirical research and market segmentation practice have gone hand-in-hand for decades. An almost unanimous view prevails that market segmentation is critical for the success of organizations. This has resulted in an abundance of market segmentation literature. For example, according to Zins (2008), eight per cent of publications in the Journal of Travel Research are segmentation studies. Despite the long traditions in market segmentation research there is still much to be improved. This study aims to contribute to the market segmentation literature by studying some of these research gaps. Several arguments are to be found in the literature justifying the need for this study:

- There is a need for research on the impact of the Internet on the application and role of segmentation (Dibb & Simkin, 2009).
- Effective tourism marketing and management require an understanding of the existing market segments (Park & Yoon, 2009).
- Products should be adapted to the desires of large and small sub-groups in more developed markets (Raaij & Verhallen, 1994).

- Few studies have specifically considered motivation, and the resulting segmentation in rural tourism (Park & Yoon, 2009).
- Validation of segmentation results is of utmost importance due to the exploratory nature of data-driven segmentation that can potentially render a million different solutions (Dolnicar, 2004).
- Determining how segments develop over time is necessary to optimize the market segmentation strategy (Dolnicar, 2004).
- There is considerable debate as to which bases and statistical approaches yield the best segmentation solutions (Moscardo et al., 2001).
- Practical questions about the implementation and integration of segmentation into marketing strategy have received less attention than segmentation bases and models and there is a gap between market segmentation theory and practice (Dibb & Simkin, 2009).

The use of ICTs has been one of the most influential developments in marketing in the past 30 years. Since 2000 the truly transformational effect of communications technologies has been witnessed, facilitating global interaction between players around the world and the development of a wide range of new tools and services (Buhalis & Law, 2008). In tourism marketing especially the effects of ICTs have been substantial. The number of travelers around the world that use these technologies for planning, experiencing, and expressing their opinions has increased rapidly (Buhalis & Law, 2008). However, effects of ICTs are discussed surprisingly seldom in the market segmentation literature. Segmentation, targeting, differentiation, and positioning are all acknowledged to be key components in effective digital marketing (Chaffey et al., 2006).

Dibb (2004) and Dibb and Simkin (2009) call for research on the impact of the Internet on the application and role of segmentation and state that research on the topic is one of the priorities in future segmentation research. Dibb and Simkin (2009) present six priorities for future research in market segmentation. These include, among others, in descending order of importance: research on how variables are chosen, finding more cost effective variables, bridging the gap between the practical application of segmentation and academic and technical advances in a posteriori segmentation, developing tools to help managers undertake appropriate data analysis, approaches for diagnosing and overcoming implementation difficulties, on-line segmentation studies and the impact of the Internet and digital on the application and role of segmentation, and stability and change in segments.

According to Quinn (2009), there is not much practical advice within the marketing literature that describes how to meet the challenges of choosing variables, identifying segments, analyzing the output, measuring segment profitability, or detailing how this process can be followed by managers. Tonks (2009) states that for marketing managers pragmatic realism is likely to be the defining approach to the world of marketing management. This results in a need to make sense of market complexity, the choice of segmentation variables, the evaluation of market

segments in terms of qualification and attractiveness, and the subsequent creation of strategies and tactics.

One of the problems in market segmentation has been the use of different bases without any guidelines when to choose certain market segmentation base such as travel motivation or travel activities over others. Several arguments have been presented about the superiority of certain segmentation bases and techniques over others (Frochot & Morrison, 2000). Some of the most popular data-driven approaches in tourism research are travel motivation segmentation (e.g. Boksberger & Laesser, 2009), benefit segmentation (e.g. Frochot, 2005) and activity based segmentation (e.g. Moscardo et al. 2001). There is a large gap in the literature regarding the superiority of different data-driven methods in segmenting tourists. It is unknown, for example, how segments identified using a psychological approach differ from segments found using a behavioral approach regarding the segmentation evaluation criteria. New information on this topic will help managers to plan their market segmentation research more efficiently and contribute to the market segmentation literature on data-driven segmentation.

Segment stability is regarded by many authors (e.g. Morrison, 2002; Raaij & Verhallen, 1994) as an important criterion when evaluating segmentation solutions. Raaij and Verhallen (1994) suggest that a short questionnaire should be used to keep track of the changes occurring in market segments on a regular basis. However, how this works in practice and especially in tourism literature, however, has not been examined/studied. Longitudinal segmentation studies are very rare, even though it is widely accepted that in order to be useful the segments identified have to be stable over time.

1.3 PURPOSE OF THE STUDY

This doctoral dissertation consists of four papers following the introduction. *This study aims to further develop market segmentation research theory and practice in the field of tourism studies.* The context of this study is domestic rural tourism in Finland, which is regarded as an important source of revenue for many rural areas and a field in which information on data-driven market segmentation is practically non-existent.

The main research question of this dissertation is *How to increase the success of market segmentation in tourism?*

Market segmentation methods have improved considerably in the 21st century as a large amount of research on the topic has been conducted and published in academic journals. However, some of the questions discussed in the previous chapter remain open, including the use of on-line environment in segmentation, testing new segmentation bases, studying the quality of market segmentation solutions and bridging the gap between theory and practice. To explore different options to increase the success of market segmentation and especially data-driven market segmentation methods in the field of tourism studies the following *subquestions are posed:*

1. How have ICTs affected market segmentation in travel and tourism marketing literature?
2. What kind of rural tourist segments can be found by combining push and pull motivations as a segmentation base?
3. How to measure segment stability over time?
4. How stable are travel motivation segments over time?
5. How do segments based on travel motivations differ from segments based on travel activities?

Questions 3, 4 and 5 are theoretically oriented sub-questions whereas sub-questions 1 and 2 are empirically and managerially relevant. Table 1 below indicates how articles included in this study help to fill the gaps in the literature.

Table 1: Research questions of the thesis and principal contribution

Main research question: How to increase the success of market segmentation in tourism?

	Paper I	Paper II	Paper III	Paper IV
Research questions	1. How have ICTs affected market segmentation in travel and tourism marketing literature?	2. What kind of rural tourist segments can be found by combining push and pull motivations as a segmentation base?	3. How to measure segment stability over time? 4. How stable are travel motivation segments over time?	5. How does segments based on travel motivations differ from segments based on travel activities?
Contribution	Lists the ways ICTs have affected market segmentation and provides information on the best practices in the field.	Provides information on rural tourist segments in Finland.	Studies different options for companies to track changes happening in market segments.	Studies the information search behavior of both activity and travel motivation segments.

1.4 KEY CONCEPTS OF THE STUDY

In the following table (Table 2), the key concepts of the study are briefly defined.

Table 2: Key concepts of the study

Concept	Definition
Travel / Tourism	"Travel refers to the activity of travellers. A traveller is someone who moves between different geographic locations, for any purpose and any duration. The visitor is a particular type of traveller and consequently tourism is a subset of travel" (UNWTO, 2013).
Tourist	"A temporary visitor to a destination" (Pike, 2008, pp. 23).
Rural tourism	Rural tourism is defined by the Rural Policy Committee of Finland (2013) as customer based tourism business actions based on the natural strengths and conditions of the Finnish countryside: nature, scenery, culture and people (Rural Policy Committee, 2013).
Segmentation	"According to Middleton (2002), segmentation may now be defined as the process of dividing a total market such as all visitors, or a market sector such as holiday travel, into subgroups or segments for marketing management purposes. Its purpose is to facilitate more cost-effective marketing through the formulation, promotion, and delivery of purpose-designed products that satisfy the identified needs of target groups. In other words, segmentation is justified on the grounds of achieving greater efficiency in the supply of products to meet identified demand and increased cost effectiveness in the marketing process. The primary bases for segmentation include demography, geography, behavior, lifestyle, personality, and benefits sought." (Park & Yoon, 2009, pp. 100).
Push and pull motivations	"This concept involves the theory that people travel because they are pushed and pulled to do so by "forces". These forces (motivational factors) describe how individuals are pushed by motivational variables into making a travel decision and how they are pulled (attracted) by the destination area" (Baloglu & Uysal, 1996, pp. 32).

1.5 POSITIONING OF THE STUDY

Vargo and Lusch (2004) list schools of thought and their influence on marketing theory and practice. From the 1950s to the 1980s was the marketing management era, where business was customer focused, value was determined in the market-place, and marketing was regarded as a decision-making and problem-solving function. From the 1980s onwards marketing was seen as a social and economic process, unifying disparate literature streams in major areas such as customer and market orientation, services marketing, relationship marketing, and value and supply chain management. The current marketing theory regards customer as the focal point of marketing (Grönroos, 1994) and the enterprise can only make value propositions (Vargo & Lusch, 2004). According to Vargo and Lusch (2004), a service-centered view is customer oriented and relational. In traditional goods-centered dominant logic the customer is seen as an operand resource that market-ers do things to by segmenting them, penetrating them, distributing to them, and promoting to them. In service-centered dominant logic the customer is primarily an operant resource, only functioning occasionally as an operand resource and marketing is a process of doing things in interaction with the customer (Vargo & Lusch, 2004). However, the service-centered model does not necessitate the aban-donment of the most traditional marketing core concepts such as the Marketing Mix, target marketing, and market segmentation, but rather complements these.

Möller (2006) states that theoretical discussion on marketing is challenging as it is often difficult to distinguish between marketing practice, generalized knowledge from marketing textbooks, and "real theories" of marketing. This is especially true of market segmentation and research on the topic, which has long traditions in the marketing theory.

In short, this study adapts the view of marketing as a means of producing and delivering value for customers. Laukkanen (2006) divides the literature on the value concept into two general streams of research in the marketing literature. In the first stream of literature the nature of value from the perspective of an organi-zation is discussed, whereas in the second stream the focus is on the value from the customer's perspective. The former perspective puts emphasis on customers' value to an organization (e.g. Blattberg & Deighton 1996; Vekatesan & Kumar, 2004) or how an organization can deliver superior value to the customer (e.g. Gale 1994). Customer value in the latter stream of research is a construct that includes a subjective notion of an individual's value judgment of a product or service. This perspective mainly refers to customer value perceptions (e.g. Zeithaml 1988) and experiences (e.g. Holbrook, 1999).

The Marketing Mix concept has dominated marketing thought, research, and practice for decades (Grönroos, 1994) and is a central concept for this study. According to Grönroos (1994), the Four Ps of marketing - Product, Price, Place and Promotion - entered the marketing textbooks around 1960. Developments in mar-keting theory have not diminished the importance of market segmentation as a tool for strategic management of companies. Changes in paradigms and marketing theories have influenced segmentation in many ways, for example by introducing

new bases for segmentation such as customer relationship profitability analysis (Grönroos, 1994), but the core concepts of segmentation have remained the same. Grönroos (1994, pp. 14) also states that Marketing Mix management with its four Ps is "reaching the end of the road as a universal marketing approach." This does not, however, mean that concepts of the managerial approach such as market segmentation would be less valuable than before (Grönroos, 1994).

According to Möller (2006), companies aim to develop an optimal Marketing Mix consisting of Product, Place, Price, and Promotion. This involves solving a market segmentation problem, being able to carry out marketing positioning analysis, and finally being able to differentiate the Mix from the competitors' offering on the basis of the preferences of different market segments. There are two basic theories behind the use of the Marketing Mix approach: it assumes that both consumer demand and marketers' offerings are primarily heterogeneous, and that competition involves differentiating companies' offerings from those of the competitors using consumers' perceptions and preferences as a guideline (Möller, 2006).

In this study recent developments in marketing thought are acknowledged. These developments have changed the way segmentation is used from a more product oriented view to a customer-centric perspective. This has not decreased the usability of market segmentation; market segmentation principles are well established in marketing theory and a recognized component of marketing strategy (Dibb & Simkin, 2010). However, Möller (2006) insists that rigorous discussion on the theoretical foundations of marketing is needed, especially regarding the differentiation of marketing theories and marketing practice.

The theory behind this study is that markets are heterogeneous, meaning that customers differ from each other in their needs and wants (Möller, 2006). In the literature consumer heterogeneity is regarded as fundamental to the marketing concept as it provides a basis for market segmentation, targeting and positioning, and micro-marketing (Kamakura et al., 1996). This study embraces this heterogeneity existing in the marketplace as a fundamental reason for consumer behavior and acknowledges that consumers are different from each other. However, it is also acknowledged that even though people are different in many aspects, there are also things that connect them, such as the things they like, what they want to do during their holiday, current phase of life and also their information seeking behavior.

Another important part of the theory is that companies can optimize their Marketing Mix based on those differences in a way that creates not only value for customers but also value for companies, and provides companies with a competitive advantage through targeting and positioning themselves to serve the needs and wants of specific segments according to the assets the organization has. Matching the company's capabilities and the wants of its customers is at the core of marketing (McDonald & Wilson, 2011). McDonald and Wilson (2011) state that all firms have a unique set of capabilities that direct what market opportunities they can efficiently take advantage of.

Dhalla and Mahatoo (1976) identified two schools of thought in market segmentation research. The behaviorally oriented school is interested in obtaining insights into the basic processes of consumer behavior and marketing needs come

only second, whereas the decision-oriented school focuses on how the differences among consumers can be used to increase the productivity of the firm's marketing programs. This study positions itself in the decision-oriented school and focuses on how identifiable differences and similarities among consumers can be used by tourism companies and implemented in their marketing programs.

This study positions itself in the field of marketing (Figure 1) and more precisely of defining markets and understanding value. The papers comprising this dissertation examine different aspects of defining markets and understanding value. The most important part of this doctoral dissertation lies in the third and fourth papers examining market segmentation results from the perspective of tourism businesses and how market segmentation methods could be improved. The first paper is a literature review examining how ICTs have affected the way market segments are defined in the field of tourism research. The second paper examines what kind of value Finnish rural tourists require from their holiday by examining push and pull motivations through market segmentation. The third and fourth papers are about evaluating segment attractiveness and market segmentation solutions.

This study contributes to market segmentation theory and especially methods by exploring different options to identify and operate homogenous segments in heterogeneous markets, in this case in the field of tourism. It should be noted that the consumer behavior literature is not the focus of this study but only a framework for identifying segments for the benefit of tourism businesses.
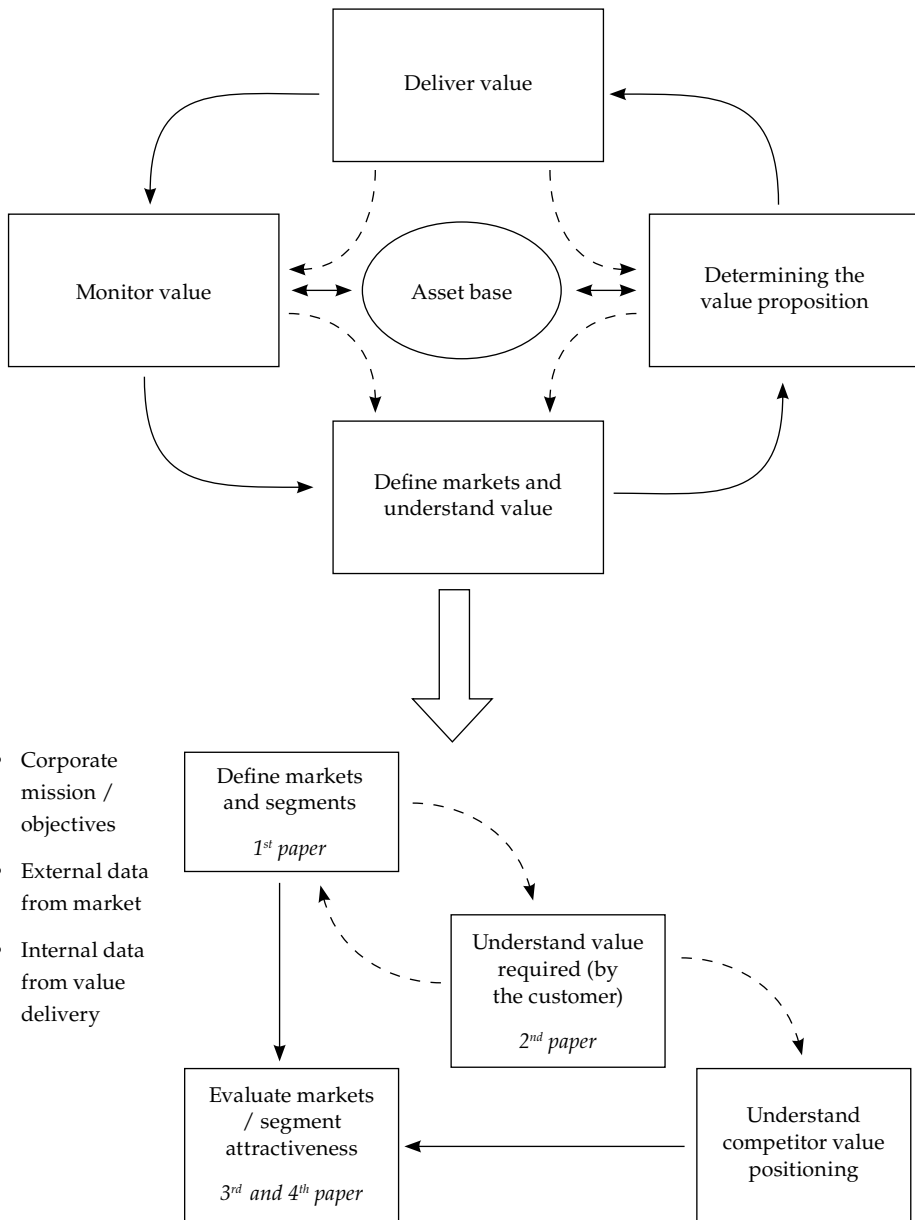
Figure 1: Positioning the articles of this study to the map of marketing (based on McDonald & Wilson, 2011)

2 Market Segmentation

2.1 MARKET SEGMENTATION, TARGETING, AND POSITIONING

For decades market segmentation has been a useful way for companies to divide buyers into homogenous groups that differ from each other in some meaningful regard such as age, gender, place of accommodation, lifestyle or brand loyalty. Wendell Smith is in many instances (e.g. Raaij & Verhallen 1994; Hoek et al., 1996; Lin, 2002) regarded as the author first to study market segmentation (Smith, 1956). Market segmentation can be seen as an opposite to mass marketing in which one product always manufactured in the same way is sold to all possible customers. Mass marketing was regarded for many decades as an excellent way for companies to benefit from economies of scope and scale. Henry Ford offered his famous Ford Model T in any color as long as it was black as black paint dried fastest on the assembly line (Ford & Crowther, 1922). Later on the car manufacturers also noticed that people had different needs and it was impossible for them to make a car that could suit everyone leading to ever increasing market segmentation, targeting and positioning. Mass marketing is becoming more difficult as markets are fragmenting (Kotler, 1997). Market segmentation today is increasingly customer and market oriented rather than product oriented.

Markets consist of single consumers who differ from each other in many ways. According to McDonald & Dunbar (2004) market segmentation is a process to divide customers or potential customers into groups so that customers belonging to a certain group have similar needs that a certain market offering can satisfy.

Segmentation has become indispensable to the success of a company and a critical part of business strategy. It is one of the many tools marketing has to offer. Succeeding in segmentation strategy can benefit companies in many ways. These benefits include (Simkin, 2008, pp. 45):

- focusing on customers' needs, expectations, aspirations, and share of the wallet!;
- building relationships with the most attractive customers;
- creating barriers for competitors;
- delivering focused product and service propositions,
- differentiated from rivals' propositions;
- increasing revenues and share of their wallet from targeted customers;
- determining whom not to chase for business;

- prioritizing resource allocation and marketing spent on the most worth-while opportunities; and
- establishing commitment and single-mindedness within the organization – one vision, one voice, harmonized messages.

An organization has to be customer oriented in order for marketing processes to be efficient and to gain these segmentation benefits. Without correct definition of marketing and a precise market segmentation scheme marketing will never have a central role in an organization's strategy (McDonald & Dunbar, 2004; Simkin, 2008).

Combined with market targeting and positioning, market segmentation (Figure 2) forms the basis for strategic marketing (Matzler et al., 2004). With the concept of strategic marketing, a manager can locate new marketing opportunities and develop or change the offering so that it meets the needs of potential customers (Kotler & Scheff, 1997).

SEGMENTATION

    - Choose variables for segmenting market
    - Build a profile of segments
    - Validate emerging segments

TARGETING

    - Decide on targeting strategy
    - Identify which and how many segments should target

POSITIONING

    - Understand consumer perceptions
    - Position products in the mind of the consumer
    - Design appropriate Marketing Mix to communicate positioning

Figure 2: The STP of market segmentation (based on Dibb 1998).

The first step is market segmentation aiming to divide markets into groups. As a result distinguishable and homogenous market segments are identified. After this each segment has to be evaluated and compared to the organization's strategy and goals. Next the organization has to choose the segments that it will target its actions. Even though many segments may seem attractive, the organization has to take into account its goals and resources. In positioning an organization plans its marketing strategy to meet the needs and wants of the chosen segments. The Marketing Mix has to be adapted to suit all the chosen segments (Matzler et al., 2004). Market segmentation, targeting, and positioning are not necessarily separate processes but may overlap depending on the segmentation approach, data collected, and method of analysis. Bowen (1998) calls this an integrative approach to market segmentation. This is very common, especially in computer-aided segmentation (Bowen, 1998).

According to Cahill (1997), segmentation ought to provide a company with a competitive advantage. A competitive advantage is formed as each segment has fewer competitors compared to all companies operating in the marketplace. This leads to less pressure to drop prices and initiate price competition. There are also fewer products that can substitute for what the company has to offer when focusing on a single segment. The possibilities for becoming an expert company in its own field are also greater. Hoek, Gendall and Esslemont (1996) regard segmentation as a usable tool only if marketers can choose from different options based on market segmentation research, for example, define what kind of marketing actions would be of interest to different customers.

It is essential in market segmentation that the segmentation information is usable. Then the chosen segments have to be targetable with Marketing Mix elements. One of the cornerstones of market segmentation, according to Cahill (1997), is that a company can communicate with the members of a segment while those not belonging to the segment are not included in the communication. Rossi, McCulloch and Allenby (1996) state that targeting consumer segments for differential promotional activity is an important aspect of marketing practice. The premise of this activity is that there are distinct identifiable segments of homogenous consumers.

The researcher always has a critical role in segment formation and very rarely if ever does the segmentation lead to an objective outcome (Hoek et al., 1996). Despite some criticism of market segmentation (e.g. Mitchell, 1995) it is still regarded as one of the most important and practical ways to gain a competitive advantage.

There are no clear guidelines on what market segmentation bases to use in which market context and there is a lack of studies examining why one segmentation method or base would be better than others (Hoek et al., 1996). Some research on the topic has been conducted (e.g. Novak & MacEvoy, 1990; Moscardo et al., 1996) but these studies have typically been case specific and inadequate to provide a clear order of superiority for segmentation approaches. Some approaches and methods fit some situations better than others, but the majority of the decisions are still research dependent. In market segmentation the segments identified do not represent the one and only correct solution but are typically just

one of the many several segmentation possibilities (Hoek et al., 1996). Segments also change over time, meaning that market segmentation has to be conducted on a regular basis (Kotler & Keller, 2006). Raaij and Verhallen (1994) suggest that a short questionnaire should be used on a regular basis to keep track of the changes occurring in market segments. It is important in these questionnaires that segment membership is easy to identify.

Despite many advantages market segmentation also has limitations. Weinstein (1987), for example, criticizes market segmentation claiming that the results are heavily dependent on the decisions made during the segmentation process and are not necessarily connected to individuals' buying decisions. Markets have also become complicated and diversified because of changes in lifestyles and socio-demographics. Information provided by market segmentation is also useless if it is not constantly used to make changes to the Marketing Mix. The efficiency of market segmentation is also dependent on the company's ability to operate in the marketplace according to the results of the market segmentation process.

According to Gibson (2001) market segmentation is not predictive, only descriptive. Segmentation research describes how things are at the present time but decisions have to be made for the future. Segmentation also assumes that markets are not homogenous but certain parts of the market actually are, meaning that segmentation assumes homogeneity at segment level but neglects it at market level. Segmentation also assumes that the segments are free of competition and that in segment level competition does not need to be acknowledged if segments have been chosen on the basis that competitors do not have a strong position in those segments. Gibson (2001) also states that segmentation always defines incorrect segments. Segments always contain a large number of people who should belong to the segment but also many of those who actually are not segment members. These may, for example, be people extremely loyal to competitors and just happen to be included in the research sample. Those people who are not loyal to any company are the ones market segmentation should study and whose custom the company should focus on winning.

Demographic and socio-economic variables have been used as a segmentation basis for a long time. Age, gender, and income, however, are only indirectly related to what a person will buy, making their usefulness in measuring buying behavior heavily dependent on the market situation (Johns & Gyimóthy, 2002). This has increased the interest in questionnaires studying values and lifestyles. Segment stability is also important in market segmentation because segmentation is of little use if the segments' reaction to the Marketing Mixes changes rapidly over time. However, marketers can never be sure that identified market segments are stable, no matter what segmentation base or method has been used (Hoek et al., 1996).

2.2 CRITERIA FOR SUCCESSFUL MARKET SEGMENTATION

There is a large body of literature discussing the criteria for successful market segmentation. These criteria are very important to remember when a company or organizations starts to develop segmentation as a marketing strategy and chooses segments to target. Kotler and Keller (2006) list five different criteria for successful market segmentation. To be useful, market segments must be measurable, substantial, accessible, differentiable, and actionable. Segments are measurable if the size, purchasing power, and characteristics of the segment can be measured. The segmentation solution is substantial if the segments are large and profitable enough to serve. The segments should also be effectively reached and served, meaning that they are accessible. Differentiable segments are conceptually distinguishable and respond differently to different Marketing Mix elements and programs. The identified segments are actionable when effective programs can be formulated for attracting and serving the segments.

Morrison (1996) has also presented criteria for successful market segmentation but focuses on market segmentation in travel and tourism. According to these eight criteria, effective market segmentation has the following characteristics (Moscardo et al., 2001, pp. 31):

- People within a segment should be similar to each other and segments should be as different from each other as possible (homogeneity).
- Segments should be identified with a reasonable degree of accuracy (measurable).
- Segments should be large enough in size to warrant separate attention (substantial).
- An organization needs to be able to easily reach or access the identified segments (accessible).
- Segments must require different marketing approaches. This suggests that the segments must differ on those characteristics which will be most relevant to the organization's services or products (defensible).
- Segments must be suited to the products or services offered by the organization (competitive).
- Identified segments need to be compatible with existing markets (compatible).
- There must be some stability in the segments. The identified segments need to remain relevant over an extended period of time (durable).

Raaij and Verhallen (1994) divide criteria for evaluating the feasibility of segments into four categories: typifying the segments, homogeneity, usefulness, and strategic use in marketing management. When typifying the segments the differentiation of one segment from other segments should be clear (identification) and the identification of segments in terms of differences in individual and household characteristics or other "measurable" characteristics should be possi-

ble. Homogeneity means that there should be variation, stability, and congruity in the solution. Variation criteria are met when there is heterogeneity between segments in terms of behavioral response. The segments should be relatively stable over time and switching of consumers from one segment to another should not be frequent. There should also be homogeneity within segments in terms of behavioral responses. Segments are useful when they are accessible and substantial. Segments should be accessible in terms of the use of media and distribution outlets and they should react consistently to communicative, promotional, distributional and product-related stimuli. Substantial segments are of sufficient size to enable specific marketing actions. Strategic criteria can be further divided into two parts: potentiality and attractiveness. These mean that the segments should have enough potential for marketing objectives and segments should be structurally attractive to the producer.

The criteria that Storbacka (1997) used to assess customer base segmentation solutions were that the solution should be sufficiently permanent to make the development, implementation, and evaluation of a new market strategy feasible and should also be unambiguous so that customers can be placed in only one segment at a time. Also, belonging to a group should be pertinent to a specific buying behavior and the implementation stage has to provide employees with a simple orientation to the foundation of the new strategies.

Dolnicar and Grün (2008, pp. 63) sum up the goal of market segmentation: "ideal segments contain tourists with similar tourism needs and behaviors, similar sociodemographic profiles, who are profitable, who could easily be reached with marketing communication messages, who match the strengths of the tourism destination or business, and whose needs are not catered for by major competitors."

As can be seen, the success of market segmentation can be measured in several different ways. Dibb and Simkin (2010) divide the criteria into two groups, 'hard' statistical and 'soft' quality criteria. Tonks (2009) reviewed the evaluative criteria for designing and assessing market segments and divides the criteria into three groups, design, qualification, and attractiveness, each consisting of several unique criteria (Table 3).

Table 3: Evaluative criteria for designing and assessing market segments (Tonks, 2009)

Design	Construct validity (Relevance)
	Content validity (Relevance)
	Criterion validity (Homogeneity/heterogeneity)
	Familiar
	Universal
	Requirements of other management functions
	Data availability
	Cost
Qualification	Measurable
	Accessible
	Substantial
	Actionable
	Stable
	Parsimonious
	Profitable
	Unique response elasticities
Attractiveness	Compatibility with corporate objectives
	Compatibility with company competences
	Resource requirements
	Sales volume
	Segment growth
	Relative market share
	Competitive intensity
	Entry and exit barriers
	Macro-environmental factors

As can be seen, the success of a market segmentation scheme can be judged from many different perspectives using several different criteria. This makes it very difficult to definitively state what successful market segmentation is. From a marketing management perspective the focus is on how the segmentation scheme benefits the company and, for example, on the compatibility of segments with corporate objectives and company competences as well as on competitive intensity and entry and exit barriers (Tonks, 2009). These are something very seldom discussed in the tourism research literature, where segment attributes are often described but it is left to the reader to find a use for the results. More information is needed on how and why a company should use the results of an academic market segmentation study in tourism. As part of the marketing management discipline, market segmentation research should provide results that are useful for companies. As Dhalla and Mahatoo (1976, pp. 34) state, "market segmentation helps the firm gear a specific product to the likes or requirements of a particular target group."

2.3 BASES FOR MARKET SEGMENTATION

There is no clear consensus on what is the best approach to the market segmentation of tourists. Some researchers regard benefit segmentation as the best option (e.g. Frochot & Morrison, 2000) whereas others prefer travel motivations as a basis for market segmentation (e.g. Laesser et al., 2006). Kotler (1997) lists four different segmentation bases that a company can use to develop its segmentation strategy and to find suitable market segments: geographic segmentation, demographic segmentation, behavioral segmentation, and psychographic segmentation. Other bases such as image have also been used. Each of these variables can be used singly to identify segments or they can be combined.

In tourism and hospitality especially, the popularity of market segmentation has increased as the customer oriented approach to business management has been adapted to organizations and segmentation is now conducted on the basis of values and other psychographic variables (Hallab et al., 2003). People may, for example, express their lifestyle through their purchasing behavior (Lin, 2002). Personality has also been used in segmentation when the interest has been on what kind of people buy certain products (Plummer, 2000).

Bock and Uncles (2002) divided differences between consumers into five categories and suggested suitable segmentation variables for each category. The five difference categories are product feature preferences, consumer interaction effects, choice barriers, bargaining power, and profitability. Kamakura and Mazzon (1991) and Kamakura and Novak (1992) segmented consumers according to their values, a very common approach to segmentation. Bucklin, Gupta and Siddarth (1998) segmented households on the basis of their response to price and promotion in brand choice, purchase incidence, and purchase quantity decisions.

According to the literature it is evident that researchers have a wide variety of different segmentation bases at their disposal. Much of the literature has focused on either developing new market segmentation bases or testing old bases in new contexts. There is very little discussion on why one segmentation base should be used in preference to another. Some studies have compared segmentation bases using some of the criteria for successful segmentation (Novak & MacEvoy, 1990; Storbacka, 1997; Moscardo et al., 2001; Lin, 2002) but there is an obvious need for further examination of the superiority of one segmentation basis over another.

2.4 SEGMENTATION METHODS

Two ways to classify individuals for segmentation purposes are a priori or commonsense segmentation and a posteriori or data-driven or post hoc segmentation (Dolnicar, 2002). In commonsense segmentation the grouping criteria are known in advance. These criteria may be gender, age, and annual income. In data-driven segmentation the composition of segments is not known in advance. The starting point in data-driven segmentation is typically an empirical data set and quantitative techniques are used to analyze it in order to derive a grouping (Dolnicar, 2002). Even though a priori segmentation ensures that the members of each segment are

somehow similar to each other, for example that they come from the same country, it does not necessary mean that they reach the Marketing Mix the same way (Hoek et al., 1996).

According to Dolnicar and Grün (2008), the process of data-driven segmentation consists of numerous components, most of them requiring a decision on the part of the researcher. This can be a cause of potential misinterpretations or suboptimal procedural decisions compared to commonsense segmentation studies. Dolnicar and Grün (2008) criticize the use of factor analysis of respondents' responses and then using the resulting factor scores as a basis for cluster analysis, a procedure called "factor-cluster segmentation". They conclude that factor-cluster segmentation is not generally the best approach when the aim is to identify homogeneous subgroups of individuals. It should be also noted that data driven segmentation can be conducted on other types of data besides survey data, such as click stream data from a website. This kind of data measures actual customer behavior instead of their opinions, providing efficient data for market segmentation.

A closer examination of segmentation approaches reveals altogether six market segmentation concepts instead of just data-driven and commonsense segmentation (Dolnicar, 2004). According to Dolnicar (2004) segmentation can be either a one-step or two-step concept. In two-step segmentation the process is continued after the first commonsense or data-driven segmentation by segmenting identified segments even further using a commonsense or data-driven approach. This kind of hybrid approach leads to an improved basis for market research-driven decisions.

The use of Likert scales and cluster analysis has also been criticized. Despite being a much used tool for market segmentation, cluster analysis has several pitfalls. One of these is that it always produces a solution regardless of the data or whether there are patterns in the data that can be regarded as segments (Dolnicar, 2003). Cluster analysis is also highly susceptible to response style effects, especially when using data measured by Likert-type scales. According to Hair, Black, Babin, and Anderson (2010), there is a possibility that when clustering data is collected using, for example, a number of ratings on a 10-point scale, we could end up with clusters of people who said everything was important, some who said everything was of little importance and maybe some clusters in between. This is called response-style effect and results reminiscent of it can be seen in many different segmentation studies in tourism (see e.g. Bieger & Laesser, 2002; Chung et al., 2004; Füller & Matzler, 2008; Park & Yoon, 2009). Data driven segmentation is heavily dependent on the segmentation method and data analysis conducted. These topics, however, are very seldom discussed in the literature. There is a need to test different methods and thus improve the quality of data analysis when segmenting tourism markets.

According to Dibb and Simkin (2010), one of the difficulties marketers face is testing the quality and robustness of segments. Saunders (1994) states that statistically significant results have to be usable and accepted by managers. Managers have to believe in the clusters formed, recognize them, and perceive how they can be used. Market segments cannot be only academic concepts; their effectiveness must be proven in reality. By examining how well tourists can relate to segments identified

using statistical methods it can be shown that the segments also exist in reality.

Comparison of segmentation bases is very seldom discussed topic in the literature despite its importance (Moscardo et al., 2001). The study by Moscardo, Pearce and Morrison (2001) is one of the few to compare the superiority of one segmentation basis over another. Moscardo, Pierce and Morrison (2001) compared an a priori geographic approach and an a posteriori activity approach with visitors to the Wet Tropics region of Australia. They stated that despite the extensive and expanding body of literature on market segmentation, several issues remain unresolved, one of them being that while obtaining clusters or segments of customers is common practice, the question of solution adequacy is far from simple.

3 Research strategy

3.1 SCIENTIFIC APPROACH

According to Burrell and Morgan (1979, pp. 1), "all social scientists approach their subject via explicit or implicit assumptions about the nature of the social world and the way in which it may be investigated." Laudan (1977) argues that the objective of science is to solve problems and to provide acceptable answers to interesting questions. According to Anderson (1983), the term science has two meanings. On the one hand science should refer to the idealized notion of science as a system of inquiry which produces objectively proven knowledge. On the other hand science is whatever society chooses to call a science. This study adapts the view of Walle (1997), who states that a truism of the scientific method asserts that the phenomenon under consideration must be empirically verifiable and observable by both the researcher and the wider scientific community.

Walle (1997) warns researchers that although scientific research techniques are powerful tools that often channel thought in productive ways, a scholar can also easily fall prey to methodological pitfalls which potentially destroy the significance of such research. Since World War II, business disciplines such as marketing have embraced an ever increasing toolkit of legitimate research methods and strategies (Walle, 1997). Whereas traditionally quantitative research methods have dominated in business research, qualitative approaches have also been widely accepted and embraced (Arndt, 1985).

Anderson (1983) states that a paradigm constitutes roughly the world view of a scientific community. According to Kuhn (1970), the paradigm will include a number of specific theories dependent on the shared metaphysical beliefs of the community. Paradigms are not value-free and neutral but can be rather viewed as social constructions reflecting the values and interests of the dominant researchers in a science and their reference groups (Arndt, 1985). However, it is commonly agreed that the paradigm concept itself remains somewhat vague and unclear (Arndt, 1985).

Burrell and Morgan (1979) argue that it is convenient to conceptualize social science in terms of four sets of assumptions related to ontology, epistemology, human nature, and methodology. Ontological assumptions concern the very essence of the phenomena under investigation. Epistemological assumptions are about how one might begin to understand the world and communicate this as knowledge to other people. Assumptions about human nature concern the relationship between human beings and their environment. Last are the methodological assumptions which are greatly influenced by social scientists' assumptions on ontology, epistemology, and human nature.

The ontology in this study is realism, which postulates that the social world external to individual cognition is a real world made up of hard, tangible, and relatively

immutable structures (Burrell and Morgan, 1979). Guba and Lincoln (2005) summarize the axiomatic nature of research paradigms (Table 4). The paradigms differ from each other regarding ontology, epistemology, and methodology. Based on the categorization this study is recognized to be postpositivistic regarding epistemology. It is recognized that the findings of this study represent reality only imperfectly. The findings are probably true but, as this study examines the segmentation of human beings as customers and consumers, it is impossible to obtain results that explain human behavior perfectly. Even though the scientific approach of this study does not provide findings that represent the absolute truth, the findings are still usable, managerially relevant, and theoretically acceptable. Regarding the human nature debate, this study adopts an intermediate standpoint which allows the influence of both situational and voluntary factors in accounting for the actions of human beings (Burrell and Morgan, 1979).

A quantitative research approach was chosen for this study. There are several factors that justify the use of quantitative research methods in this study. The market segmentation literature has long traditions in quantitative research. The main purpose of market segmentation has been to divide markets into homogeneous segments. Cause-effect linkages and generalizations are common to positivistic and postpositivistic research (Guba & Lincoln, 2005). Surveys, questionnaires, and standardized research instruments are all prominent among the tools comprising nomothetic methodology (Burrell and Morgan, 1979). Thus, segmentation aiming to generalize the results to the whole population should be quantitative.

Quantitative survey has been accepted as a standard method of data collection in the market segmentation literature. This very common strategy was adapted to this study in order to make the results of this study comparable to those of earlier studies as well as to be able to contribute to the methodologies used in market segmentation studies. There are also examples of qualitative approaches to market segmentation (e.g. Mackellar, 2009) with their own strengths and weaknesses. However, when choosing the research approach for this study the research questions to be answered were considered.

Kotler and Keller (2006) state that companies undertake surveys to learn about people's beliefs, preferences, satisfaction, and knowledge, and to measure the magnitude of these in the general population. In this case the general population in question are Finnish rural tourists using the Internet to search for information regarding their holiday, to post reviews and to purchase tourism products. What is measured in this study are travel motivations and the stability and quality of market segmentation solutions as well as Internet use behavior.

Table 4: Basic Beliefs (Metaphysics) of Alternative Inquiry Paradigms (Guba & Lincoln, 2005)

Item	Positivism	Postpositivism	Critical Theory	Constructivism	Participatory
Ontology	Naïve realism– "real" reality but apprehensible	Critical realism–"real" reality but only imperfectly and probabilistically apprehensible	Historical realism– virtual reality shaped by social political, cultural, economic, ethnic, and gender values; crystallized over time	Relativism– local and specific constructed and co-constructed realities	Participative reality– subjective-objective reality, co-created by mind and given cosmos
Epistemology	Dualist/ objectivist; findings true	Modified dualist/ objectivist; critical tradition/ community; findings probably true	Transactional/ subjectivist; value-mediated findings	Transactional/ subjectivist; created findings	Critical subjectivity in participatory transactions with cosmos; extended epistemology of experiential, propositional, and practical knowing; co-created findings
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogic/dialectical	Hermeneutical/ dialectical	Political participation in collaborative action inquiry; primacy of the practical; use of language grounded in shared experiential context

3.2 DATA COLLECTION AND METHODS OF ANALYSIS

Several different data collection and analysis methods are used. Three different ways of data collection were used: a literature review of segmentation articles published during the 21st century as well as two surveys conducted during summer 2009 and from spring to fall 2011. An overview of research methodology is presented in this chapter while a detailed explanation is given in each article.

3.2.1 Literature review

In the first article three high ranking tourism marketing and research journals were examined: the Journal of Travel Research (JTR), the Journal of Travel & Tourism Marketing (JTTM) and Tourism Management (TM) in order to find out how market segmentation researchers in tourism have incorporated ICTs and the Internet into their studies. The journals' search engines were used to find all articles containing the word 'segment' or any version of it in their title, abstract or among the keywords. Articles published since 2000 were included. This search resulted in a total of 188 segmentation related studies published since the beginning of 2000. Forty-eight studies were published in TM, 57 in JTR and 83 in JTTM.

All these articles were examined to see how they were connected to segmentation and what kind of role ICTs played in different studies. Eventually 58 market segmentation studies influenced by ICTs were found.

3.2.2 Surveys and measurements used

The empirical data for this study we collected using two different surveys. The main goal of the first survey was to study what kind of market segments could be identified among Finnish rural tourists using the Internet to plan and book their holidays. When designing the survey a large amount of the earlier literature was thoroughly examined. This included the market segmentation literature, the rural tourism literature and the customer value literature (Otto & Ritchie, 1996; Tapachai & Waryszack, 2000; Williams & Soutar, 2000; Bieger & Laesser, 2002; Duman & Mattila, 2003; Frochot, 2005; Komppula, 2005; Sánchez et al., 2006; Gallarza & Gil, 2008). The goal was to study both push and pull motivations and to combine them to identify market segments. All the travel motivations were measured using a 7-point Likert-type scale ranging from 1 (Not at all important) to 7 (Very important).

The second survey study aimed to compare activity and travel motivation based segmentation methods and also to develop measurements for tracking segment stability and using those measurements to examine changes occurring in segments since the first study. Measurements for collecting market segmentation data were also examined in order to compare the accuracy of different methods.

The differences between segments reported in the first study were used to describe the four segments of rural tourists. Respondents were asked to choose the segment which best described them. In contrast to the study by Horneman, Carter, Wei and Ruys (2002), a respondent could either belong to the segment or not, making segment membership a binary score, whereas Horneman et al. (2002) used a 4-point Likert-type scale. A description of the segments is presented in Table 5.

Table 5: Segment descriptions

Segment name	Description
Social Tourists	During your holiday you want to meet interesting people, be active and maybe even have a feeling of romance. You appreciate a destination that has a rich history and culture and where you can meet new people outside your own family. You also like to have control over your own holiday. You prefer traveling with friends.
Family Tourists	You enjoy traveling with your family. Having fun, being together with your family, new "once in a lifetime" experiences and everything that is new and exciting motivate you to travel. You want the destination to be safe for the family and for your children to enjoy the destination. You also appreciate environmental friendliness in a destination.
Wellbeing Tourists	You want to escape from your busy everyday life to the peace and quiet of the countryside. You want to relax from the routine and hassle of the cities and enjoy privacy and comfort. You appreciate having no timetables, a peaceful atmosphere, good opportunities for outdoor activities and beautiful landscapes.
Home Region Tourists	You are interested in traveling to the region your family comes from.
Something else, what?	If none of the above options describes you as a rural tourist you can describe your own rural tourism behavior here.

To examine segment stability over time 12 travel motivations that most differentiated the segments in the first study were also measured in the present study using a 7-point Likert-type scale. These motivations were compared using data collected for the present study and data in the first study. The respondents were asked to rate the importance of the following 12 travel motivations:

- I would have a hassle-free vacation
- I would like to escape from a busy everyday life
- There would be an opportunity to be together as a family
- I could visit places my family comes from
- I would have a feeling I was being pampered
- I would have an opportunity to be physically active
- I would have a "once in a lifetime" experience
- I would like to relax away from the ordinary
- I would have some control over the way things turn out
- I would experience different culture
- I would have a feeling of romance
- I would have a chance to meet interesting people.

To measure travel motivations on a binary scale travel motivation statements from the study by Bieger and Laesser (2002) were used. Altogether ten travel motivations were used. Respondents were asked to choose at least one and at most three different travel motivations that were most important for them. This approach was used to make sure respondents had to think about their choices instead of just selecting everything that they thought would be nice during their holiday. These ten statements are general travel motivations found in many other tourism studies (abbreviations in parentheses):

- Participating in nightlife (nightlife)
- Enjoying comfort, spoiling myself (comfort)
- Taking and having time for my partner (partner)
- Taking and having time for my family (family)
- Enjoying landscape and nature (nature)
- Broadening my mind, enjoying sightseeing (culture)
- Being able to make flexible and spontaneous decisions (liberty)
- Doing something for my looks and well-being (body)
- Sports activities (sports)
- Enjoying the sun and water (sun).

3.2.3 Data collection

The data used in the papers composing this dissertation as well as the methods of analysis are presented in Table 6. The first survey was conducted during summer 2009. A banner advertisement to the questionnaire was placed on the website www.lomarengas.fi. A 500-Euro gift voucher drawn among all the respondents was used to motivate the website users. Website users clicking the banner were directed to the questionnaire page. The questionnaire was aimed at the Finnish users of the website. An English translation of the questionnaire used can be found in the Internet at the address https://elomake.uef.fi/lomakkeet/1387/lomake.html. Altogether 1,043 responses were received, of which 727 were complete and usable for the purpose of the first paper.

The second questionnaire was promoted to the users of website www.lomarengas.fi as well as two other rural tourism websites, www.savonlinna.travel and www.tahko.com. The vast majority of responses came from the website www.lomarengas.fi, which was the website used in the first survey. A banner advertisement with a prize of a 400-Euro gift voucher was used to attract the users to the questionnaire. Data was collected in summer 2011, from the beginning of March to the end of August. Altogether 1,937 responses were obtained after excluding questionnaires that were mostly empty, all from Finnish users. According to the data analysis methods used in papers three and four a certain number of responses had to be deleted due to missing answers. Most of the excluded responses were a result of duplicate answers from the same respondents, who had not answered regarding the importance of travel motivations or because

they had answered all Likert scale questions with the same answer. An English translation of the questionnaire is provided at the address https://elomake.uef.fi/lomakkeet/2410/lomake.html.

Table 6: Data analyzed and used methods in thesis papers

	Study I	**Study II**	**Study III**	**Study IV**
Data analyzed	Segmentation articles published in Journal of Travel Research, Tourism Management and Journal of Travel & Tourism Marketing 2000-2011	727 responses to survey questionnaire on website www.lomarengas.fi	1,753 responses to surveys on websites www.lomarengas.fi, www.tahko.com and www.savonlinna.travel	1,509 responses to surveys on websites www.lomarengas.fi, www.tahko.com and www.savonlinna.travel
Methods	Content analysis	K-means cluster analysis, ANOVA, chi-square tests	Hierarchical cluster analysis, ANOVA, chi-square tests	Factor analysis, hierarchical cluster analysis, K-means cluster analysis, chi-square tests

3.2.4 Methods

Several different methodologies are used in the four papers included in this study. In the first paper content analysis was used to classify different effects of ICT on market segmentation in tourism. Cole (1988) states that content analysis is a method for analyzing verbal, written or visual communications. According to Elo and Kyngäs (2008) content analysis allows the researcher to test theoretical issues to enhance the understanding of the data and through content analysis it is possible to compress words into fewer content-related categories. The outcome of the analysis is concepts or categories describing the phenomenon. In this study content analysis was used to categorize occurrences of ICT-related keywords in market segmentation studies in tourism.

In the second paper the segmentation approach presented by Boksberger and Laesser (2009) was used except that Tamhane's T2 test was used instead of Bonferroni corrected p-values. This was justified as Tamhane's T2 is more conservative and thus produces more trustworthy results with the sample size of this study. The homogeneity of variance test between segments also revealed great statistical significances between segments regarding motivation and destination attribute scores.

Average mean score across all motivation statements was calculated for each respondent and these scores were used to calculate the relative importance of each item for each respondent. K-means cluster analysis was used to find the segmentation solution. The final number of clusters was determined by examining

the graphical results (dendrogram) and the best discrimination result between the groups. Clusters were compared using ANOVA and post-hoc tests were conducted with Tamhane's T2 test.

The third article includes highly complex data analysis as it aims to study the accuracy and stability of the market segmentation results of the second article. The data in this study is analyzed in four phases:

1) A sample profile is presented.
2) The accuracy of market segmentation results from the second article is analyzed by asking rural tourists which market segment describes them the best.
3) Five different statistical segmentation methods are used to ascertain which produce segments best represent the four rural tourist segments identified in the second article.
4) The accuracy of the statistical segmentation methods is scrutinized by comparing the results with the segments that rural tourists think describe them best.

The segmentation methods chosen are based on the study by Dolnicar (2002). In her review of data-driven market segmentation in tourism she found that 45 per cent of studies used factor analysis to preprocess data before clustering and 44 per cent of studies using hierarchical algorithms used Ward's method to derive groupings. In this study principal component analysis with varimax rotation is used to preprocess the data for the use of K-means cluster analysis as one possibility for data analysis. Varimax rotation was chosen as it is one of the most common rotations used in segmenting tourism markets (see e.g. Konu et al. 2011). In the second article data was preprocessed by standardization before clustering to eliminate the effects of response styles. The last cluster method is to use only K-means without any data preprocessing, an approach proposed by Dolnicar and Grün (2008). Four different methods with the number of cluster solutions ranging from three to five are used on the data measured with a Likert scale. Cluster solutions from three to five are most common in tourism segmentation studies and four clusters were also identified in the second study. To analyze binary data a hierarchical clustering algorithm was used with squared Euclidean distances and Ward's method. Cluster memberships from three to five clusters were saved.

In the last part of the data analysis of the third paper the accuracy of segmentation methods that most successfully identified the four aforementioned segments from the data was examined. Cross tabulations with chi square analysis were used to compare the accuracy of statistical segmentation methods by cross tabulating statistical segment membership and self-evaluated segment membership.

In the fourth paper the data analysis involved three stages. First, two random samples of 100 respondents were drawn from the data in order to easily interpret the hierarchical cluster analysis dendrogram. Hierarchical cluster analysis with Ward's method and squared Euclidean distances was used, which is a common approach in market segmentation in tourism (see e.g. Dolnicar, 2002). Both random samples produced dendrograms regarding both travel motivations as well as travel

activities. The dendrograms suggested that three or four meaningful clusters did indeed exist in the data. In travel activities a five-cluster solution was chosen because it identified a very precise winter activity segment compared to three- and four-cluster solutions. Among motivation segmentation solutions a four-cluster solution was chosen as the most easily interpreted and most meaningful.

The clusters were validated by comparing their Internet use behavior with items adopted from the study by Jani et al. (2011). These items have previously been used to describe travel personality segments but they are also usable when comparing travel activity and travel motivation segments. Respondents were asked what travel products they had purchased from the Internet during the past 12 months, what kind of Internet channels they used when planning and booking a holiday and how often they wrote reviews of the products and services online. The last of the aforementioned variables was re-coded into two groups according to whether the respondents had written reviews during the past 12 months or not. For Internet channels used and Internet purchase multiple responses were allowed.

This study followed the approach used by Moscardo et al. (2001) to compare segments. For the analysis of variance both F-values and etas are reported and for cross-tabulations both chi-square and Goodman and Kruskal's tau statistics are reported. According to Moscardo et al. (2001), eta and Goodman and Kruskal's tau can be used to determine the strength of the relationship between the two segmentation approaches and the dependent variable under consideration.

4 Overview of the Original Research Papers

4.1 INFORMATION AND COMMUNICATIONS TECHNOLOGY AND MARKET SEGMENTATION IN TOURISM: A REVIEW

Information and communication technologies have had a profound impact on tourism marketing. For several decades one of the cornerstones of marketing has been market segmentation. The purpose of this paper is to examine how ICTs have affected market segmentation literature in tourism by the means of literature review. All articles that had the word 'segment' in their title, abstract or keywords, and were published in the Journal of Travel Research, Tourism Management and the Journal of Travel and Tourism Marketing in or after 2000 are reviewed by examining how ICTs have affected these studies. Content analysis is used to categorize the connection between ICTs and segmentation to seven categories. Only three papers focusing on both ICT and segmentation were found among the 188 segmentation related studies reviewed. Altogether 58 market segmentation studies found were affected by ICTs but in most cases the effects are very limited. ICTs have mostly been used as a method for data collection or to separate segments based on their information search behavior. The greatest limitation of this study is that only three tourism journals were reviewed, making it possible that some studies connected to the topic are not included in this review. This study provides practitioners with a review of the main findings regarding ICT use in market segmentation process published in the recent academic literature. This is the first study to review how ICTs have affected market segmentation in tourism. It provides a review of the main papers discussing the topic and directions for future research. Overall, this research highlights the lack of research on the topic as well as its importance for the future of tourism marketing. For managers of tourism companies it provides information on how to incorporate ICTs into their market segmentation strategy.

4.2 SEGMENTATION OF RURAL TOURISTS: COMBINING PUSH AND PULL MOTIVATIONS

Rural tourism is an important form of tourism in many countries, including Finland. To understand rural tourists' behavior and help tourism companies market their products more efficiently many scholars have segmented rural tourists in several different geographical locations. This study aims to combine the segmentation approaches used in earlier studies, namely motivation and benefit

segmentation, and segment online rural tourists in Finland. Finding combinations of the motivations and destination attributes rural tourists value helps rural tourism companies to plan their marketing and product development. Data is collected in a rural tourism affiliate website and analyzed using cluster analysis on tourists' motivations. Among 727 respondents, four rural tourist segments are found: "Social Travellers", "Wellbeing Travellers", "Home Region Travellers" and "Family Travellers". The segments differ from each other in motivations, preferred destination attributes, travel behavior and socio-demographic factors. Using both push and pull items to segment and describe segments produces an accurate image of different segments. Some destination attributes are also activities and from the results it can seen that "Social Travellers" are the most active as regards doing something at a destination whereas "Wellbeing Travellers" prefer more passive rural holidays. Understanding these differences will provide rural tourism companies with important information to successfully market their products by combining both push and pull motivations in their marketing and product development.

4.3 TESTING SEGMENT STABILITY: INSIGHTS FROM A RURAL TOURISM STUDY

Segmentation has been a very important and popular research topic in the field of hospitality and tourism. However, most segmentation studies have focused on finding segmentation solutions rather than on applying the results to practice and testing the viability of the results. Most of the earlier market segmentation research in tourism has focused on finding a segmentation solution based on common sense or data-driven research and then validating those results by comparing external factors such as socio-demographics, activities or buying behaviors. The majority of studies conducted a posteriori segmentation use a technique belonging to the family of cluster analysis. However, cluster analysis techniques will always render a result whether or not there really are meaningful segments in the data, creating a problem with the results. This study contributes to tourism segmentation by examining the quality of an earlier segmentation study using separately collected empirical data. It also contributes to measuring segmentation effectiveness as well as to choosing the correct segmentation solution. Cluster overlap in segmentation is also discussed. A unique opportunity is used to test how the segmentation solutions of an earlier rural tourism segmentation study conducted in 2009 represent rural tourist segments in 2011 and how well rural tourists can relate to the segments found in the earlier study. These results show that the four segments identified in the earlier study continue to exist two years later as respondents are able to relate to the segments quite well. However, segment sizes are crucially different and there is some overlap between segments. This study supports the notion of using binary data to collect information for market segmentation purposes. This way some of the common problems, such as response style effects with Likert-scale scores and segments of equal sizes with the use of K-means cluster analysis can be avoided or minimized.

4.4 TARGETING RURAL TOURISTS IN THE INTERNET: COMPARING HETEROGENEITY OF TRAVEL MOTIVATION AND ACTIVITY BASED SEGMENTS

Segmentation in the ICT context has seldom been studied and discussed in the tourism research literature. There is also a large gap in the literature regarding the superiority of different data-driven methods in segmenting tourists. It is unknown, for example, how segments identified using a psychological approach differ from segments identified using a behavioral approach regarding the segmentation evaluation criteria. This study aims to explore the possibilities of activity based and travel motivation based segmentation approaches to target market segments in the Internet. The data is collected from users of three Finnish rural tourism websites with 1,754 complete and usable questionnaires to create segmentation solutions based on travel activities and motivations using hierarchical cluster analysis and then comparing the results. The results indicate that travel activities are more useful than travel motivations in finding heterogeneous segmentation solutions, making the travel activity segments more heterogeneous than travel motivation segments as regards their information search behavior and Internet use. In this study the segments are not compared only by different information channels used but also by how the Internet is used when planning, booking and reviewing their holidays. This enables tourism companies to plan and design their marketing campaigns better, and to choose what different Internet channels to use in order to most efficiently reach the customers they desire. The results suggest that in this era of Internet marketing travel activities are a better segmentation basis than travel motivations in order to target different market segments as activities form more heterogeneous segmentation solution.

5 Discussion

5.1 REVIEW OF THE FINDINGS

The basic premise of this study is that there is still a lot to be developed in market segmentation despite extensive research on the topic during the past 50 years. The literature review did indeed confirm this from many sources. Several research problems and gaps were identified. In light of these research gaps four separate studies were conducted, each focusing on one topic to improve the conducting of market segmentation and the methodological options that segmentation researchers have at their disposal. The main findings of this study are connected to the subquestions presented earlier.

The first subquestion was *How have ICTs affected market segmentation in the travel and tourism marketing literature?* According to Ma and Law (2009), an examination of past research efforts can help researchers understand how the tourism field develops. The first paper contributes to our understanding of the current state of ICTs in the academic market segmentation research and also provides a direction for future research. Conceptually this study presents a novel way to analyze market segmentation studies through the use of content analysis and provides important information on how the development of ICTs has affected market segmentation research. The results show that the effects have been mostly limited to data collection or the Internet as one information channel among others when validating segmentation solutions and comparing differences among segments. The changes occurring due to ICTs are recognized in the literature but their effects on segmentation are limited.

In the second paper an answer was sought to the subquestion *What kind of rural tourist segments can be found by combining push and pull motivations as a segmentation base?*. This was the first study to combine both push and pull motivations in rural tourism. The relative importance for each Likert-scale variable used to identify segments was also calculated, an approach very uncommon in the tourism literature but nonetheless extremely useful in separating the segments. Conceptually this study also contributes to the understanding of rural tourists and comparison to other studies on the topic suggests that there are many similarities among rural tourists in different countries.

The four segments were identified in the second article. "Social Travellers" are interested in meeting people, being active and maybe even having a feeling of romance. They appreciate a destination that has a rich history and culture and where they meet new people outside their own families. Having control of their holiday is important for them and they prefer traveling with friends. "Family Travellers" enjoy travelling with their families, having fun, being together with family, new "once in a lifetime" experiences and everything that is new and exciting motivates

them to travel. They want the destination to be safe for the family and enjoyable for the children. They also appreciate environmental friendliness in a destination. "Wellbeing Travellers" want to escape from busy everyday life to the peace and quiet of the countryside. They want to relax from the routine and hassle of the cities and enjoy privacy and comfort. They appreciate not having schedules during their holiday and enjoy a peaceful atmosphere, good opportunities for outdoor activities and beautiful landscapes. "Home Region Travellers" are more interested than other segments in traveling to the region their family comes from.

In the third paper segmentation stability was examined and different methods for identifying segments were compared. Special attention was paid to the methods of studying segment stability. The research questions addressed in this paper were *How to measure segment stability over time?* and *How stable are travel motivation segments over time?* This study tested several different ways to measure segment stability. Again, binary scores proved superior to any other way of collecting data to measure stability. The poorest performer was K-means cluster analysis on raw data, which displayed several problems arising from response style effects, whereas the best way to segment tourists regarding segment accuracy and stability was by using binary data with hierarchical cluster analysis. This kind of comparison between different methodologies has not been done before and this study provides information on the different options researchers have at their disposal. An interesting detail appears in the results: using regression scores from principal component analysis as a basis for cluster analysis seems to produce more distinctive segments than using only raw scores. Even though Dolnicar and Grün (2008) argue that "factor-cluster segmentation" is inferior to segmentation based on raw scores in identifying segments, it can still provide additional benefits such as more distinctive segments.

The final paper aimed to compare two different segmentation bases by answering the subquestion *How do segments based on travel motivations differ from segments based on travel activities?* Close attention was paid to information seeking behavior: the Internet is not just one information channel among others but people use it in many different ways during their information seeking process. This study contributes to the existing market segmentation literature on tourism by comparing segment heterogeneity between activity and travel motivation segmentation. In market segmentation the segments have to differ from each other, making heterogeneity a critical factor when evaluating a segmentation solution. The results show that activity based segmentation produces more distinctive segments than travel motivation segmentation in most of the items measured in this study. This holds true for information seeking behavior, online purchasing behavior, and online information seeking behavior and writing online reviews as well as socio-demographic factors. The only items for which travel motivation segmentation produces more distinctive segments are travel party and plans to go on a rural holiday in the near future.

This dissertation was motivated by several research gaps in the literature. Dibb and Simkin (2009) called for research into the impact of the Internet on the application and role of segmentation (Dibb & Simkin, 2009). This dissertation

studied the impact of the Internet on segmentation in the field of tourism. The use of online information and booking behavior among different segmentation solutions was compared, contributing to filling the research gap regarding ICTs in market segmentation.

Park and Yoon (2009) state that effective tourism marketing and management require an understanding of the existing market segments. This dissertation has contributed a profound investigation of market segments existing among Finnish rural tourists going online and on how to measure and track those segments. Both push and pull travel motivations and the resulting segmentation in rural tourism are thoroughly examined (Park & Yoon, 2009). This enables tourism companies in Finland to adapt their products and marketing to the desires of segments (Raaij & Verhallen, 1994).

In the literature it is accepted that validation of segmentation results is of utmost importance due to the exploratory nature of data-driven segmentation that can potentially render a million different solutions (Dolnicar, 2004). This dissertation discussed this problem and provided guidelines for researchers to improve the validity of their results among millions of different solutions. In this study different measures for tracking how segments develop over time are tested to optimize the market segmentation strategy (Dolnicar, 2004).

This dissertation also contributes to the debate on which bases and statistical approaches yield the best segmentation solutions (Moscardo et al., 2001). Regarding segment heterogeneity, activity segmentation seems to be superior to motivation segmentation as it distinguishes the segments more regarding their online information search behavior. The best segmentation solutions are obtained using binary data with hierarchical cluster analysis, making the use of Likert-scale questionnaires questionable for segmentation purposes.

Practical questions about the implementation and integration of segmentation into marketing strategy have received less attention than segmentation bases and models and there is a gap between market segmentation theory and practice (Dibb & Simkin, 2009). The results of this dissertation show that market segments are not merely researchers' statistical descriptions of reality; tourist can recognize and related to the segments. Indeed, academic research, especially in segmentation, is not conducted solely for the benefit of the scientific community; the results can and should be used in practice.

5.2 CONTRIBUTION OF THE STUDY

There are two theories behind this dissertation: the first is that markets are heterogeneous and the second is that companies can optimize their Marketing Mix on the basis of these differences in a profitable way (Möller, 2006). The purpose of this study was to develop how market segmentation is conducted in the field of tourism research by bridging the gap between scholarly research and practice. The contribution of this study lies in the answer to the main research question *How to increase the success of market segmentation in tourism?*

Market segmentation is successful when it achieves the goals set for it. In the literature several different criteria for successful market segmentation can be found. This study contributes to increasing the success of market segmentation in several ways. It examines aspects of market segmentation design, qualification, and attractiveness Tonks, 2009).

The first paper focuses on several aspects of market segmentation success by reviewing how ICTs have affected the segmentation process in the tourism literature. Market segments can and should be made more actionable by closer inspection of the segments' Internet use behavior. ICTs enable detailed information collection on sales volume, segment growth, profitability, and unique response elasticities (Tonks, 2009). However, only little evidence on these topics could be found in the tourism segmentation literature, making their inclusion a necessity in creating more successful market segmentation schemes. For example, testing the effectiveness of different market segmentation solutions using ICT enabled tools is lacking from the market segmentation literature in tourism even though this would show managers how to use market segmentation and what segmentation bases would be most efficient.

The second and third papers focus on segment design and qualification (Tonks, 2009). Together they examine segment validity, stability and measurability by comparing different options for finding a successful segmentation solution. The fourth paper focuses on segment accessibility and actionability, exploring ways in which rural tourism companies can use the Internet to find and serve their customers.

In the literature review conducted for this study several shortcomings regarding market segmentation methods were found. By addressing these shortcomings this study contributes to the way market segmentation is conducted. Contrary to most of the earlier literature, this study claims that the Internet is not just one information channel that tourists use when they are planning their next holiday. Targeting market segments is essential in market segmentation and without knowing about the information seeking behavior of different segments it becomes difficult for marketing managers to effectively target these segments. Information and communication technologies have had a profound effect on tourism marketing (Buhalis & Law, 2008) and this should also be witnessed in market segmentation research. Incorporating questions regarding Internet use such as social media channels preferred, online buying behavior, and the importance of various websites will provide managers with essential information on how to target customers and will enhance our understanding of validating segmentation solutions. This affects how questionnaires are designed and data is collected, but improves the managerial contribution of market segmentation studies.

The market segmentation literature can also enriched by the methods proposed in this study. This study demonstrates the effects of moving from Likert-scale data into binary data and its benefits as regards the market segmentation literature. Binary scales and the clustering methods related to them seem to outperform Likert-scale data and K-means cluster analysis in accuracy by producing segments that represent real world segments more accurately. If Likert-scale response for-

mats are used researchers have to be sure that the segments identified do indeed represent real world segments instead of being mere reflections of response style effects such as "Want-it-all" or "Passive Tourists" segments.

Market segmentation research, despite being quantitative positivistic research, is highly susceptible to researcher influence. The researcher decides what segmentation basis is to be used, what kinds of questions are to be asked and what kinds of scales are to be used. This study contributes to these topics in many ways and provides researchers with more information on how to identify market segments. According to the results of this dissertation success of market segmentation can be increased by the following ways:

1. In order to target different segments more information on the Internet use behavior is needed as well as tracking segments using ICTs.
2. When clustering respondents using K-means cluster analysis on Likert-scale data researchers need to study the effect of response style effects more closely.
3. Binary answering formats provide more accurate segmentation solutions compared to Likert-scale answering formats and should be preferred in market segmentation literature
4. Researchers need to be more aware of the differences between different segmentation bases and their suitability for different research scenarios.

This study raises the question of what kind of segmentation bases should be used in what situations. This is an important question that has very seldom been discussed in the literature (Bonn et al., 1992; Hshieh et al., 1992, Moscardo et al., 2001). This study shows that, in the case of destination recommendation systems, travel activities are preferable to travel motivations as a segmentation base. Despite its importance this is only a small contribution to the field of market segmentation but nevertheless an important step in the process of comparing different market segmentation bases.

This study addresses several topics and issues recognized in the literature that are connected to market segmentation and contribute to the field of study by providing evidence of how to improve market segmentation methods and how to conduct market segmentation studies and research. In order to produce and deliver value for customers, companies need accurate, reliable, and stable information on their customer segments and how to produce and promote value for these different segments. The recent developments in marketing thought (Vargo & Lusch, 2004; Möller, 2006) have not diminished the usability of market segmentation; all people indeed are different but through correctly conducted segmentation analysis it is possible to identify similarities between very different people and to use these similarities to understand the consumer better and gain competitive advantage for companies.

5.3 IMPLICATIONS FOR MANAGERS

There are several important implications for managers in this dissertation. First of this it provides managers with information on how ICTs have affected market segmentation. The literature review provides a list of studies connected to the topic and provides detailed examination of the effects of ICTs to market segmentation in tourism. It provides managers with information on how to benefit from the developments in ICTs when they conduct market segmentation research.

The segmentation solutions identified in this dissertation are important for tourism managers. Four different rural tourist segments among online using Finnish tourists were identified by segmenting online users of the largest Finnish rural tourism website in summer 2009 according to their travel motivations using k-means clustering method The first segment, "Social Travellers" was the largest segment with 29.3 percent of 727 respondents. The members of this segment clearly valued social interaction with local people, hosts, and other travelers. "Social Travellers" segment also included more active and younger members than other segments. There were also more males and they were more likely to travel with their friends than respondents in other segments. This segment should be targeted with low-cost products as they valued low prices the most. This segment was also most interested in hotel accommodation, meaning that in their marketing rural hotels could emphasize the combination of social interaction, rural surroundings and activities. The second segment, "Wellbeing Travellers", was the third largest segment with 164 respondents. For them a very quiet, calm and passive rural holiday was very important. They wanted everything to go as planned during their holiday. They will choose a destination that can offer beautiful landscapes and good opportunities to spend time outside in nature. "Home Region Travellers" was the smallest segment. The members of this segment are very difficult for rural tourism companies to target as they choose their destination according to where they or their family originated. The last segment, "Family Travellers", is the second largest . They wanted to spend time with their families, have new and memorable experiences and have fun. Safety and family friendliness of the destination as well as well as landscape and the environmental aspects of the hosting company play an important part for them when choosing a destination. These factors should be taken into account when planning marketing efforts for this segment.

All rural tourists seem to be motivated by relaxation, closely followed by being refreshed and a sense of comfort. Beautiful landscape as well as a calm, unhurried atmosphere were among the most important destination attributes for all segments. These can be regarded as the basic level of service for almost all rural tourism companies in Finland, something that everyone expects of a rural destination.

The contribution for managers in the third paper is that managers do not need complex statistical methods to track the changes in segments but, once identified, people can relate themselves to segments and allow easy tracking of changes that happen in segments. The results also show that managers can trust and benefit from academic segmentation research as it identifies segments that exist

in reality, not only on paper. According to Dolnicar and Lazarevski (2009), a large proportion of managers lack a fundamental understanding of market segmentation methodology and methods, resulting in over interpretation of the validity of solutions. In this study simpler and more understandable market segmentation methods were tested when examining how well respondents could identify themselves with the segments found using an academic "black box" (Dolnicar & Lazarevski, 2009) research method.

There are also several contributions for managers to be found in the fourth paper. This study examined and described both travel activity and travel motivation segments, providing managers of rural tourism companies with important information on existing market segments. For example, members of "Water activities" are hardly interested at all in canoeing, even though rowing and fishing are important for most of them. Those most interested in canoeing are members of "Actives" , who, for example, use magazines more than do members of "Water activities". This only underlines the importance of distinguishing rural tourists interested in canoeing from those interested in fishing and rowing. Motivation segmentation of rural tourists has been reported many times in the literature (e.g. Frochot, 2005; Park & Yoon, 2009) yet little is known about activity segmentation of rural tourists. For managers of rural tourism companies this study provides results on two kinds of segmentation methods from which managers can choose the segment or segments that best suits their companies' marketing strategy and plans. To efficiently market their products and services to different segments a company should not base its marketing scheme on its existing products but on what customers want. The transition from product-based segmentation to customer-based segmentation and especially differentiation and targeting is one of the most important developments in market segmentation for tourism businesses.

All in all the results of this dissertation provide managers of tourism companies with several practical applications. They can use the segmentation results presented in these studies, for example, to modify their websites and offerings to match the needs of their customers. Companies can base their marketing in the Internet on the activities they offer or then design their marketing campaigns to suit the needs of "Wellbeing Travellers" or "Family Travellers". "Social Travellers" is a market segment that has not often been targeted in the Finnish markets and could offer tourism companies opportunities to differentiate their offerings from those of their competitors.

5.4 EVALUATION OF THE STUDY

According to Tonks (2009), error in research design can be measured using the concepts of reliability and validity. The basic idea behind this error evaluation is that there exists a true value as well as the measured value and these two concepts identify the discrepancy (Tonks, 2009). McGivern (2003) refers to validity as the measure of how well a research design, including the research method and the measures of questions used, measures what it claims to measure, whereas reliability concerns the consistency of research results. In this section both the

validity and reliability of the study are discussed. There are issues that influence the reliability and validity of the individual papers but these are discussed at the end of the respective articles and are not included in the following subsection, which focus on the dissertation as a whole.

5.4.1 Validity

Wedel and Kamakura (2000, pp. 329) state that "every [segmentation] model is at best an approximation of reality." With this in mind it is conceded that it is impossible to find the correct segmentation solution, that is, the measured value and the true value can never be the same.

Tonks (2009, pp. 349) argue that in market segmentation it is necessary to assess the alternative variables for the "extent to which they meet or are expected to meet the different approaches to establishing validity which are normally given as construct, content and criterion validity." Construct validity is about what construct is ultimately being measured. In this study travel activities, travel motivations and information seeking behavior were measured using questions and response options generally accepted in the tourism research literature. However, the construct validity of travel motivations is not as high as, for example, age or usage rate, which are observable variables. The way people answer respond to questions on travel motivations depends on many things including lifecycle (Bieger & Laesser, 2002) and culture (Dolnicar & Grün, 2007). However, according to Prebensen and Kleiven (2005), travel motivations may be trusted to be relatively lasting and stable phenomena, justifying in that regard the choice to use them. Dolnicar (2006) states that ordinal answer formats dominate the field, ordinal data are analyzed using techniques requiring metric data, and cross-cultural response styles are ignored. These problems connected to tourism research are addressed in this study, increasing the validity of the results.

Content validity or face validity requires that the researcher determines the suitability of the variable for a clearly specified domain of interest and the variable should accurately reflect or encapsulate an aspect of that domain (Tonks, 2009). According to Tonks (2009), content validity is typically established by referring to the literature and by trusting the judgment of a well-informed professional or panel of experts. This was also the case in this study. The variables included are derived from the literature, likewise as the response formats. Special attention was paid to choosing the response formats with suggestions from Dolnicar (2006, 2013) and Dolnicar, Laesser, and Matus (2009).

For managers content validity and construct validity may be secondary to criterion validity. Regarding basic segmentation theory or model, criterion validity concerns the extent to which the independent segmentation variables available are associated with the dependent criterion of interest, which is usually some aspect of behavior (Tonks, 2009). In this study these dependent criteria of interest included information search behavior and pull motivations. According to Tonks (2009), the association between the independent segmentation variables and dependent criterion variables may be causal, but the main requirement is that the independent descriptor variable discriminates the dependent criterion

variable in a useful way. In the fourth paper of this dissertation criterion validity was discussed by comparing activity based segmentation and motivation based segmentation as regards their ability to create clusters that differ from each other. The results show that activity based segmentation has better criterion validity than motivation based segmentation for information search behavior. However, push motivations have good criterion validity regarding pull motivations.

Gibson (2001) states that segmentation always involves a large number of people who should belong to the segment but also many of those who are actually not segment members. This was also found to be the case in this study. Even though the segments identified in this study did exist, the segment membership is not always clear. Depending on the methodology used, the same person may belong to different segments. In this study a research method aiming to alleviate this problem was tested. When respondents are asked what segment they belong to they are less likely to be assigned to the wrong segment than when statistical methods are used.

5.4.2 Reliability

The reliability of this study is increased due to longitudinal data collection. The same segments are found with different methods at different times. It is recognized that market segmentation entails subjective evaluation in choosing the questions to be asked, the response formats, data analysis methods and in the interpretation of the results. This subjective judgment that has to be used during market segmentation process reduces the reliability of these results. Some other researcher might have come up with completely different solutions.

Some actions were taken to improve the reliability of these results. For the second survey more websites were included to test whether the market segments could be found in other websites than www.lomarengas.fi. Different data analysis methods were used and compared in order to improve the reliability of the results. Finding the same segments over and over again with different methods suggests that they are not based on the researcher's subjective judgment. Marketers can never be sure if the market segments identified are stable (Hoek et al., 1996). Market segments have to be designed so that a single person cannot be a member of several segments at any given time. It is possible for a person to change from one segment to another but that also means that he or she has to behave the same way as the other members in the same segment. This has always been a strength of commonsense segmentation, as a person cannot belong to more than one segment at a time, but on the other hand membership of a commonsense segment does not necessarily imply similar behavior. It is necessary to track changes occurring in segments and segment stability cannot be taken for granted. However, segmentation results are useful as long as the segments can be identified and the customer behavior of segment members is similar.

Comparison of the results of this study and those of other similar studies showed that some segments identified in this study are also identified, for example, by Park and Yoon (2009) and Frochot (2005), suggesting that the measures used in this dissertation are indeed reliable. Data was collected with online

surveys, which might bias the results (Dolnicar et al., 2009). It should also be remembered that because online surveys were used the results do not represent all Finnish rural tourists. However, most tourists who use online information channels in their information seeking processes are represented.

5.5 FUTURE RESEARCH

There is no doubt that segmentation will be one of the most important tools marketing managers have at their disposal in the future. More attention has to be paid to online marketing and the significance of ICTs in market segmentation. It seems that practitioners are more accustomed to using technology than are market segmentation researchers. For example, no information on collaborative filtering (Linden et al., 2003) was found during the literature review. However, collaborative filtering is often used in online stores such as Amazon.

The question if the segmentation solution chosen really represents customer behavior and if the results can be trusted will always remain. More research on the topic and especially on the effectiveness of using academic market segmentation in practice is needed. New online tools enable easy comparison between different segmentation solutions implemented on a tourism website. With these tools the benefit of recommendation systems or a new website design based on segmentation results can be calculated. This kind of research is also needed in order to bridge the gap between segmentation theory and practice.

The strength of quantitative studies lies in the generalizability of their results. However, despite extensive research on rural tourism segmentation the results are always destination or country specific. An alternative approach would be to use a combination of qualitative and quantitative segmentation. For example, Mackellar (2009) used qualitative methodology to segment festival participants on the basis of their behavior. A quantitative approach could be used to generalize the segmentation results of a qualitative study using, for example, the methodology presented in this study, but this would require further research.

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Articles

INFORMATION AND COMMUNICATIONS TECHNOLOGY AND MARKET SEGMENTATION IN TOURISM:

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SEGMENTATION OF RURAL TOURISTS:

Combining Push and Pull Motivations

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TESTING SEGMENT STABILITY:

Insights From a Rural Tourism Study

Journal of Travel & Tourism Marketing, accepted for publication.

TARGETING RURAL TOURISTS IN THE INTERNET

Comparing Heterogeneity of Travel Motivation and Activity Based Segments

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Information and communications technology and market segmentation in tourism: a review

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ABSTRACT

Information and communication technologies have had a profound effect on tourism marketing. Many authors have discussed how the development of ICT has affected tourism research and practice but little attention has been paid to segmentation despite its importance to marketing. By reviewing segmentation articles published since the year 2000 in three highly regarded tourism journals this study aims to ascertain the current state of research examining segmentation in the context of information and communication technologies. The results show that studies focusing on the topic are still very rare. This study provides both researchers and the industry with a review of what has been done and of the main findings and issues. It also contributes to the literature by focusing not only on data-driven segmentation studies or segmentation methodology but also by including other studies discussing the topic.

Keywords: segmentation, eTourism, ICT, Internet, literature review

1. INTRODUCTION

Information and Communication Technologies (ICT) have been transforming tourism globally since the 1980s (Buhalis & Law, 2008). Buhalis and Law (2008) also state that since 2000 the truly transformational effect of ICT has been witnessed, giving scope for the development of a wide range of new tools and services which have transformed the ways tourism companies do business and how tourists seek information and experience a destination. The Internet is regarded as a valuable tool for consumers and suppliers to use in communication, online purchasing, and information dissemination (Law et al. 2010). The popularity of the technology is apparent in the increasing rate of online transactions and the number of online users (Law et al. 2010).

Segmentation is one of the key concepts of marketing. Bennett (1995, pp.165-166) define market segmentation as the "process of subdividing a market into distinct subsets of customers that behave in the same way or have similar needs." The basic idea in market segmentation is to identify groups of tourists who are similar in some respect, for example, travel behavior or motivations. The groups have to also differ from each other based on some given factor (Konu, 2010). Segmentation can be seen as a three-part process, consisting of market segmentation, market targeting, and market positioning (Kotler & Keller, 2006). By finding and choosing the correct segment or segments a company can gain competitive advantage. There are two different ways of doing segmentation: common sense and data-driven. In common sense segmentation the grouping criteria of segments are known in advance. These may include age, place of residence, interest in different kinds of holidays etc. In data-driven or post hoc segmentation quantitative techniques of data analysis are applied to the data in order to derive a grouping (Dolnicar 2002). A combination of the two may also be used.

According to Ma and Law (2009), an examination of past research efforts can help researchers understand how the tourism field develops. Despite increasing demand for research on ICT little academic research has been presented on the effects of ICT in market segmentation. According to Xiao and Smith (2006), tourism academic journals are important communication channels for researchers. Because there are more than 100 tourism related journals in the world it is practical to analyze the publications in top tourism journals (Ma & Law, 2009). In this study segmentation articles from three prestigious tourism journals are reviewed in order to examine the role of ICT in market segmentation studies in tourism. This study aims to systematically review earlier market segmentation studies in tourism from the perspectives of Internet marketing and ICT, thus focusing on a very important but nonetheless little researched topic. Special attention is paid to different phases of market segmentation research from introduction and theory to limitations and future research and further to the role of ICT in these different aspects of market segmentation studies.

eTourism can be defined as ICTs in tourism (Buhalis & Law, 2008). Buhalis and Law (2008) reviewed 149 published articles making a critical contribution to the

field of eTourism research and identified three main axes: consumer and demand dimensions; technological innovation; industry function. In their review Buhalis and Law (2008) also state that it is interesting to observe the many different ways the web is used by different market segments but present only one study relating to segmentation (Cotte et al., 2006).

On the basis of the study by Buhalis and Law (2008) it could be argued that segmentation has not yet made a critical contribution to the field of eTourism research. However, segmentation, targeting, differentiation, and positioning are all acknowledged to be key components in effective digital marketing (Chaffey et al. 20006). Despite extensive research into segmentation and eTourism it is unknown how these two topics intertwine. According to Dibb (2004) and Dibb and Simkin (2009), on-line segmentation and the impact of the Internet on the application and role of segmentation is one of the priorities in future segmentation research. Segmentation has also been acknowledged an important topic in website development (Perdue, 2001).

There have been some advances in market segmentation because of development of ICTs. For example different recommendation systems such as collaborative filtering (Linden et al. 2003) have made the profiling of customers more accurate than it has ever been before. Through online systems more and more data is gathered by companies and the way this data is analyzed will determine the competitiveness of companies. This study aims to find out how the possibilities of ICTs in market segmentation of tourists have been adopted by tourism researches and how ICTs have changed the way market segmentation is conducted.

2. THEORY OF MARKET SEGMENTATION

According to Kotler and Keller (2006) effective target marketing requires that marketers indentify and profile distinct groups of buyers who differ in their needs and preferences and select one or more market segments to target. For each target segment the distinctive benefit(s) of the company's market offering must be established and communicated.

Kotler and Keller (2006) divide segmentation into two approaches according to the variables used to segment consumer markets. Consumers can be segmented according to descriptive characteristics or behavioral considerations. For market segmentation to be useful, segments must rate favorably on five key criteria. Segments must be measurable, substantial, accessible, differentiable, and actionable (Kotler & Keller, 2006).

Even though segmentation can be regarded as one of the most important marketing management objectives (Kotler & Keller, 2006) there has been relatively little discussion about the role of market segmentation in tourism in the Internet marketing era. The question is no longer whether a company should deploy Internet technology but how to deploy it (Chaffey et al. 2006).

Marketing has changed since Wendell Smith first presented a theoretical concept for market segmentation in 1956. ICT, and especially the Internet, have been

crucial in transforming the way companies do marketing (Chaffey et al. 2006). Chaffey et al. (2006) state that Internet marketing is more interactive, intelligent, individualized, integrated, and independent of location than conventional marketing. According to Buhalis and Law (2008), ICTs empower consumers to identify, customize, and purchase tourism products and also support the globalization of the tourism industry.

3. MARKET SEGMENTATION REVIEWS IN TOURISM AND ICT

Segmentation has been a popular topic and a cornerstone of marketing research for decades. In the travel and tourism the industry, too, academics have embraced the concept of market segmentation, which can be seen in the volume of research published in dozens of journals. Literature reviews have been significant in helping tourism researchers to make sense of what has been accomplished in the field and to perceive what the latest developments in research are. Literature reviews also help to identify research gaps.

Market segmentation studies are typically quantitative, even though some qualitative or mixed-methods studies can be found. Knowledge of the earlier literature is often essential in conducting quantitative studies. Almost all authors studying segmentation have conducted some form of literature review of earlier segmentation studies as a part of their own studies. These are usually limited in scope, consisting only of studies directly related to the topic at hand. Some studies have focused on reviewing prior segmentation studies (e.g. Dolnicar 2002). Even though segmentation reviews have been conducted outside the field of tourism (e.g. Foedermayr & Diamantopoulos, 2008) in this study the focus is on market segmentation in tourism.

For example, Frochot and Morrison (2001) reviewed the basic principles underpinning benefit segmentation, its applications to travel and tourism, and the methodological issues associated with segment identification. They reviewed altogether 14 tourism benefit segmentation studies published 1980-1998. At the end of their study and Morrison (2001) listed characteristics, issues, potential advantages, and disadvantages of benefit segmentation. One issue, for example, is that there is no consensus among researchers on benefits, which means that there are three different ways to do benefit segmentation: attribute based, psychologically based and a combination of these. There are also some methodological issues regarding the absence of consensus on one best method; researchers have used either factor-cluster analysis or only cluster analysis.

A review of data-driven market segmentation in tourism by Dolnicar (2002) focuses on segmentation studies in tourism that use cluster analysis to find segmentation solutions as cluster analysis was clearly the most used method of segmenting tourists. Dolcinar included in her study 47 publications published 1981-2000 from 15 different sources. She examined among other things data formats used in segmentation studies, data preprocessing, hierarchical and partitioning algorithms used as well as the number of cluster distributions.

Dolnicar (2006) also reviewed data-driven market segmentation studies in tourism published in tourism journals from 1981 until 2005. She examined the studies using frequency analysis to ascertain whether changes have taken place over the past decades and derived development opportunities by comparing methodological recommendations regarding segmentation procedures with the approaches typically taken in tourism research.

Tkaczynski and Rundle-Thiele (2011) reviewed 120 event segmentation studies that incorporated an attendee-oriented approach. They analyzed sample size, data collection method, data analysis method and segmentation base, i.e., if the study used demographic, geographic, psychographic or behavioral variables. Tkaczynski, Rundle-Thiele and Beaumont (2009) reviewed 139 academic papers from 2002 to 2008 and classified segmentation bases used in the destination segmentation literature.

Typically the focus of earlier segmentation reviews in tourism has been on methodology (e.g. Dolnicar, 2002; Frochot & Morrison, 2001) as can be seen from Table 1. Tkaczynski and Rundle-Thiele (2011) focused on event segmentation studies but mostly analyzed how those studies were conducted.

The earlier literature reveals several reasons for conducting literature reviews. Tkaczynski and Rundle-Thiele (2011) reviewed earlier event segmentation studies to guide event segmentation researchers on the segmentation approaches and data analysis techniques used in earlier studies. Forchot and Morrison (2000) examined the basic principles underpinning benefit segmentation, how it is applied to travel and tourism, and what methodological issues are associated with segment identification. The review conducted by Dolnicar (2002) shows how data-driven segmentation studies are typically conducted in the field of tourism research and provides a systematic overview of applications published in recent decades. Dolnicar (2002) also outlines critical issues regarding segmentation and proposes solutions and recommendations that help both researchers and managers. Besides these aforementioned studies there are many others that have reviewed the segmentation literature (e.g. Dolnicar, 2004; Tkaczynski et al. 2009) but they were excluded as literature review was not their only focus.

Table 1. Earlier market segmentation reviews in tourism

Author	Topic	Number of studies reviewed	Studies included	Focus
Frochot & Morrison, 2001	Benefit segmentation	14 studies	author chosen key studies	Principles of benefit segmentation Application of benefit segmentation to travel and tourism Methodological issues associated with segment identification
Dolnicar, 2002	Data-driven market segmentation in tourism	47 studies	studies conducting market segmentation using cluster analysis	Data collection and analysis Reliability and validity Recommendations for improvement
Dolnicar, 2006	Data-driven segmentation studies in tourism research	75 studies	Papers from 1981 until 2005 published mainly in JTR, TM and JTTM.	Investigating developments over the past 24 years in data-driven segmentation Providing outlook on directions of further development
Tkaczynski & Rundle-Thiele, 2011	Event segmentation	120 studies	The authors of the articles had aimed to classify event attendees based on at least one of the segmentation bases outlined by Kotler (1980).	Segmentation bases Classifying variables Data collection and analysis Sample size

There have also been some attempts to review earlier literature regarding ICT and tourism. The most recent eTourism reviews are those by Buhalis and Jun (2011) and Buhalis and Law (2008). Leung and Law (2007), O'Connor and Murphy (2004), Law et al. (2009), and Frew (2000) have also reviewed the eTourism literature. These studies have managed to categorize eTourism research and study the effects of ICT on tourism but have mostly been lacking in depth regarding very precise topics such as market segmentation. Law, Qi and Buhalis (2010), however, reviewed tourism studies published from 1996 to July 2009 on the topic of website evaluation and categorized prior research into five evaluation approaches, justifying the benefits of focusing in eTourism reviews.

Literature reviews provide researchers and practitioners with a clear picture of what has been accomplished earlier, of the state of current research and of the gaps that should be focused on in the future. In an attempt to provide a summary

of ICT in market segmentation studies, the current review has been limited to the following issues:

- How many ICT and market segmentation related studies have been published since 2000 in main tourism marketing and research journals?
- How can the effects of ICT on market segmentation in earlier studies be classified?
- How important a role has ICT has played in market segmentation studies?
- What topics have been studied in ICT and segmentation?

4. THE STUDY METHOD

To review segmentation studies three high ranked tourism marketing and research journals were examined: the Journal of Travel Research (JTR), the Journal of Travel & Tourism Marketing (JTTM) and Tourism Management (TM). There are two reasons for choosing these journals: first these journals have published a large number of segmentation studies during the last ten years and second they are ranked highly in different studies rating tourism and hospitality journals (McKercher, Law & Lam, 2006). Leung and Law (2007) reviewed information technology publications from 1985 to 2004 in leading tourism journals and included studies from Tourism Management, the Journal of Travel Research and Annals of Tourism Research. However, the publication search done in this study regarding studies published in Annals of Tourism Research resulted in only six studies related to segmentation meaning that Annals of Tourism Research was categorized as a non-critical journal for this study.

The search engines provided by the journal publishers were used to find segmentation studies from the aforementioned three journals. The word 'segment' was used to find relevant studies. The search engines automatically included all the studies containing the word 'segment' or a word beginning with 'segment' in their topic, abstract or keywords. Only studies published since 2000 were included in order to examine only the most recent research on the topic. Moreover, only few studies were published on the topic before 2000. The studies were searched during a two-day period from October 20th to October 21st, 2011. This search resulted in a total of 188 segmentation related studies published since the beginning of 2000. Forty-eight studies were published in TM, 57 in JTR and 83 in JTTM. If a study was published online before printing it was included in this study and the citation was updated whenever applicable. Both full research articles as well as research notes were included.

In order to ascertain the connection between ICT and market segmentation the aforementioned 188 articles were studied by going through them with ICT related keywords. The following words were searched from the texts: ICT, Internet, web, www, social media, e-mail, email, eTourism, e-tourism, online, technology, data, and PC. All instances were examined manually and only those relating to ICT were included. Of the 188 studies a total of 74 studies contained mentions of ICTs, the Internet, or had any connection to eTourism. Nineteen studies were pub-

lished in JTR, 17 in JTTM and 22 in TM. The numbers of ICT and segmentation related studies published annually in the three journals are presented in Figure 1.

The next step was to examine which papers studied market segmentation. Altogether 58 papers out of the 74 market segmentation studies were classified as market segmentation papers for the purposes of this study. Most of the studies were focused on finding and comparing different market segments but some papers that did not segment tourists were nonetheless directly related to market segmentation, such as literature reviews (e.g. Tkaczynski & Rundle-Thiele, 2011).

After the studies of interest had been found they were analyzed using content analysis to classify different effects of ICT on market segmentation in tourism. According to Cole (1988), content analysis is a method for analyzing verbal, written or visual communication messages. Elo and Kyngäs (2008) state that content analysis allows the researcher to test theoretical issues to enhance the understanding of the data and through content analysis it is possible to distil words into fewer content-related categories. The outcome of the analysis is concepts or categories describing the phenomenon. In this study content analysis was used to categorize occurrences of ICT-related keywords in market segmentation studies in tourism.
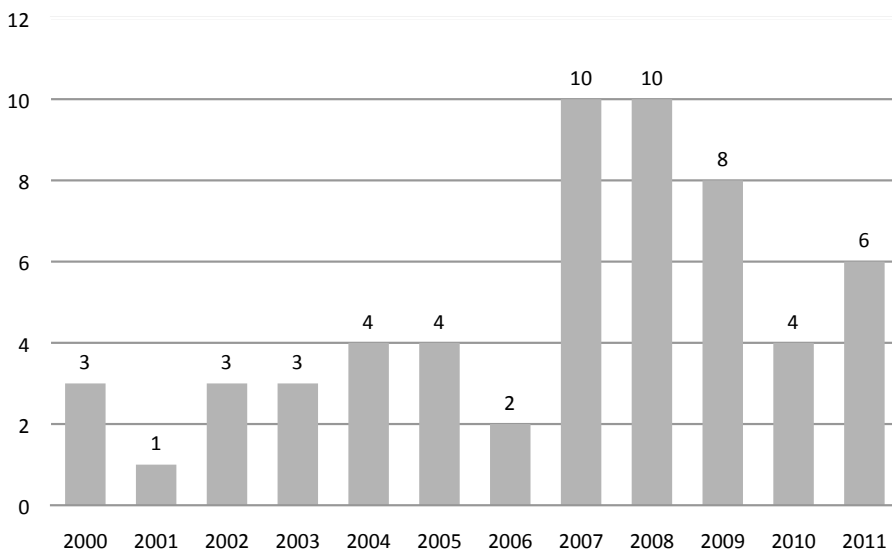
Figure 1. Numbers of eTourism and segmentation related studies published annually in JTR, TM and JTTM since year 2000.

The studies were assigned to three categories on the basis of their relevance to segmentation: common sense (CS), data-driven (DD), or studies relating to market positioning, targeting, or other segmentation issue such as literature review (O). If both common sense and data-driven approaches were used, the study was included in the data-driven category.

The 58 studies were thoroughly examined and the role of ICT, the Internet, and eTourism categorized. The studies were categorized into seven categories according to the results of the content analysis. According to the results of the content analysis seven different categories were found. Data analysis was not included in the categories because almost all quantitative segmentation studies use computer software to analyze data and methodologies have been discussed in earlier reviews. The numbers of studies included in each category can be found in Table 2.

Table 2. ICT in market segmentation studies in tourism

Significance of ICT, the Internet, and eTourism	Common sense (N=26)	Data-driven (N=25)	Other (N=7)	Definition of the category
Theme	1	2	0	Study is focused in the context of eTourism
Introduction / theory	11	7	5	eTourism is a part of introduction or included in the theory
Data collection	5	6	2	The Internet is used to collect data for the study
Information / booking channel	15	13	1	The Internet is used as information or booking channel when comparing differences between segments.
Travel service	1	0	0	The Internet or ICT is regarded as part of a destination or travel experience.
Discussion / conclusions	8	6	2	eTourism is part of the study's discussion or conclusions.
Future research / limitations	2	2	0	eTourism is included either in future research or limitations.

5. MAIN FINDINGS OF THE STUDIES REVIEWED

The articles reviewed for this study are presented in Tables 3, 4, and 5 according to the journal they were published in. The tables describe the parts of studies in which ICT related terms can be found. After the tables the most significant findings and details of the studies reviewed are presented.

Table 3. ICT in market segmentation studies published in Journal of Travel Research 2000-2011.

Study	Category	Theme	Introduction / theory	Data collection	Information / booking channel	Other	Discussion / conclusions	Future research / limitations
Horneman et al. 2002	CS				x			
Johns & Gyimóthy 2002	DD		x					
Weaver & Lawton 2002	DD		x		x			
Dolnicar & Leisch 2003	DD				x			
Bieger & Laesser 2004	DD				x			
Sung 2004	DD				x			
Pearce & Schott 2005	CS		x		x		x	
Sarigöllü & Huang 2005	DD				x		x	
Wilton & Nickerson 2006	CS		x					
Dolnicar & Laesser 2007	CS		x		x			
Dolnicar & Leisch 2008a	CS			x				
Matzler et al. 2008	CS			x				
Simpson & Siguaw 2008	CS		x		x			
Gil & Ritchie 2009	CS				x			
Tchetchik et al. 2009	DD			x				
Tkacynski et al. 2009a	DD		x					
Freeman & Selmi 2010	CS				x			
Shani et al. 2010	CS				x			
Dolnicar et al. 2012	DD			x				

Table 4. ICT in market segmentation studies published in the Journal of Travel & Tourism Marketing 2000-2011.

Study	Category	Theme	Introduction / theory	Data collection	Information / booking channel	Other	Discussion / conclusions	Future research / limitations
Dolnicar et al. 2000	DD		x					
Faranda & Schmidt 2000	O						x	
Milner et al. 2000	CS						x	
Sung et al. 2001	DD						x	
Andereck 2005	CS		x					
Beritelli et al. 2007	DD	x	x		x		x	x
Pearce & Sahli 2007	O		x	x	x		x	
Kim & Agrusa 2008	CS				x			
McKercher 2008a	CS						x	
Boo & Jones 2009	DD				x		x	
Chen et al. 2009	DD				x			
Park & Kim 2009	CS				x		x	
Pearce et al. 2009	CS				x		x	
Ritchie et al. 2010	DD			x				
Li et al. 2011	DD				x			
Sun & Qu 2011	CS		x					x
Weaver & Lawton 2011	CS		x		x			x

Table 5. ICT in market segmentation studies published in Tourism Management 2000-2011.

Study	Category	Theme	Introduction / theory	Data collection	Information / booking channel	Other	Discussion / conclusions	Future research / limitations
Gilbert & Wong 2003	CS					x		
Money & Crotts 2003	CS		x					
Becken & Gnoth 2004	DD						x	
Lee et al. 2004	DD				x			
Kim & Prideaux 2005	CS		x		x		x	
Trauer 2006	O		x					
Brey et al. 2007	DD	x	x	x			x	x
Hu & Yu 2007	DD				x			
Kim et al. 2007	CS	x	x	x	x		x	
Koc & Altinay 2007	O			x				
Molera & Albaladejo 2007	DD				x			
Spencer & Holacek 2007	CS		x					
Weaver & Lawton 2007	O		x					
Dolnicar & Leisch 2008b	CS			x	x			
Dolnicar et al. 2008	DD			x				
Füller & Matzler 2008	DD			x				
Galloway et al. 2008	CS				x		x	
McKercher 2008b	DD		x					
Tkaczynski et al. 2009b	O		x					
Dey & Sarma 2010	DD				x			
Tangeland & Aas 2011	CS			x				
Tkaczynski & Rundle-Thiele 2011	O		x					

5.1 Theme

Only three market segmentation studies could be categorized as having eTourism as their theme. Beritelli et al. (2007) studied the impact of the Internet on information source portfolios in the Swiss traveling population. They combined two-step market segmentation, first assigning subjects to two groups according to the importance of the WWW as a source of information and then using data-driven segmentation on the basis of all other sources of information within each of the above groups. They report the Internet to be more important for younger and better educated people and argue that the WWW is a complementary, rather than a substitute, source of information depending on travel situation.

Brey et al. (2007) segmented markets according to users' willingness to supply contact information to websites and found significant differences in socio-demographics, online habits, trip characteristics, and website design preferences between three segments.

Kim et al. (2007) examined gender differences in online travel information search behaviors and attitudes. Their results indicate that gender affects both attitudes to information channels as well as travel website functionality preferences. Females, for example, attach greater importance to a wider variety of both online and offline information sources when choosing travel destinations.

5.2 Theory

Many authors used the Internet in the introductions to their studies. In some studies the importance of ICT and the Internet in the theoretical part was recognized. When examining the earlier literature Johns & Gyimóthy (2002) refer to the study by Bonn, Furr and Susskin (1999) that segmented potential travelers on the basis of Internet use but argue that such studies are probably of limited predictive use in terms of visitor behavior or spending at the destination.

Some authors refer to earlier studies that have focused on ICT in the parts of their studies reviewing the literature. Wilton and Nickerson (2006) refer to the studies by Andereck, Ng, and Knopf (2003) and Kim and Morrison (2003) when stating that total spending based on Internet users or nonusers has also been reported. Pearce and Schott (2005) examined distribution channel usage of two independent visitor segments, international and domestic travelers, in Wellington and Rotorua, New Zealand. In their literature review they discuss the Internet as an information and booking channel and the issues of trust and apprehensiveness in the use of the Internet for travel transactions, referring to how to encourage travelers also to book instead of just looking.

According to Brey et al. (2007), Internet growth has changed marketing to lodging consumers significantly. McKercher (2008b) used the results of a keyword search on on-line tourism abstract databases to justify the contribution of distance segmentation. Spencer and Holacek (2007) argue that earlier results of fall tourism are limited because the data they were based on was collected between 1973 and 1991, thus among others predating the advent of the Internet.

It should be noted that some authors acknowledge the importance of the

Internet as they mention it when presenting the study topic or marketing channels of tourism companies but do not include anything Internet related in the actual study (e.g. Weaver & Lawton, 2002; Tkacynski et al. 2009a). The Internet is sometimes also mentioned in reviews of earlier studies (E.g. Wilton & Nickerson 2006).

5.3 Data collection

One part of segmentation most affected by the Internet and ICT is data collection. Almost 25 per cent of the studies reviewed used some sort of ICT enabled data collection method. Most studies used online or e-mail questionnaires to collect data.

Shani et al. (2010) used among other variables two different websites to analyze the information sources of different spending segments of golf tourists. However, they did not find any significant differences between segments regarding information sources.

Tchetchik et al. (2009) used global positioning system units to collect time-space data on visitors to a heritage site in Israel and to segment the visitors on the basis of the data collected. Koc and Altinay (2007) used statistics by the Turkish Ministry of Culture and Tourism released through the Internet and Tkacynski and Rundle-Thiele (2011) reviewed earlier event segmentation studies and observed that only three studies out of 120 academic event segmentation papers reviewed collected data using online methods.

5.4 Information / booking channel

In several studies the Internet was mentioned as one of the information or booking channels, and was used to differentiate tourists according to the information sources they used. For example, Dolnicar and Laesser (2007) found that people using agencies to book holidays used the Internet less than those not using agencies. Freeman and Selmi (2010) studied the accessibility of Internet to the disabled tourists segment. Horneman et al. (2002) found that the Internet was one of the least used sources of information among senior travelers.

Pearce and Schott (2005) examined the Internet both as an information channel as well as a booking channel, finding several differences between international and domestic travelers in New Zealand. They also studied how issues regarding Internet affected channel selection.

According to the study by Sarigöllü & Huang (2005), adventurers use the Internet as information channel more than other segments. Simpson and Siguaw (2008) present the Internet as a word-of-mouth channel, especially social networking web sites. Sung (2004) on the other hand found that the Internet was not the most important information source for any segment.

Park and Kim (2009) divided information sources into off-line external and on-line external information sources and internal information and word-of-mouth. On-line information sources consisted of portal website, online travel agency, online travel community, and state/city website.

Pearce et al. (2009) examined differences in package, package plus and independent categories regarding Internet access, but found no differences. They also

examined how different information sources affect how tourists made travel arrangements and their booking behavior. Kim and Prideaux (2005) found in their study that Australian tourists tended to use the Internet as an information source more than other nationalities in their study.

5.5 Other

In one study by Gilbert and Wong (2003) ICT was regarded as a service during travels. They found that availability of in-flight Internet, e-mail, fax or phone facilities were the least important things for airline passengers when they were asked about their expectations of flight services.

5.6 Discussion / conclusions

Many papers reviewed in this study included eTourism related discussion or conclusions at the end of the article. Brey et al. (2008) discussed the importance of technology for the business traveler segment. Perce and Schott (2005) concluded that for the tourism companies they examined the Internet could be used to book transportation but not accommodation (Pearce and Schott 2005).

Sarigöllü and Huang (2005) suggested dedicated web sites to reach and promote materials to the adventurer segment. In their study Internet was an important information channel also for the culturally oriented urbane segment. Beritelli et al. (2007) argued that WWW has not replaced other sources of information but simply complements existing information sources. For the long-haul international travelers of their study the Internet was an important source of information because of the high risk attached to travel.

Some authors also discussed the meaning of the Internet as an information source. For example, Weaver and Lawton (2011) pointed out the question of overlap in information sources. They wondered if, for example, online newspapers should be categorized under "Internet" or "newspapers".

McKercher (2008a) explained some of the differences between long and short-haul pleasure tourists by analyzing the lowest online economy airfare from gateway centers to Hong Kong. Milner et al. (2000) propose Internet-based marketing to allow Alaskan and other circumpolar business to directly access the Japanese market in a manner that many Japanese might find comfortable.

Many authors (e.g. Sung et al. 2001) regarded the Internet as an important channel for reaching certain segments, especially those people who like to plan their holidays themselves. For example, Kim and Prideaux (2005) stated that the preference of Australian tourists for the Internet as a major information source implied a need for web pages containing detailed information on tourism destinations and resources in Korea.

5.7 Further research / limitations

It is alarming how few studies discussed ICT as an area for further research or as a limitation. Beritelli et al. (2007) suggested that the further examination of the relation between the use and importance of the Internet and friends and relatives as sources of information was necessary. The question of the role of previous

trips also needs to be further explored. They also concluded that it is unkown what brings people to a website for information collection and travel booking. Differentiating lookers and bookers, according to Beritelli et al. (2007), is an important research topic for the future.

In limitations Kim (2008) observed that women were over-represented in the survey responses and suggested that it could be because of online-survey method used. This was also observed by Kim et al. (2007).

6. DISCUSSION

Buhalis and Law (2008, pp. 609) state that "since the year 2000 we have been witnessing the truly transformational effect of the communications technologies." This effect cannot be seen in market segmentation studies in tourism. Only three studies could be categorized as focusing on ICT and market segmentation. Brey et al. (2007) introduced a new segmentation base by examining willingness to supply contact information to websites. Beritelli et al. (2007) segmented the Swiss traveling population according to the importance of WWW as a source of information and Kim et al. (2007) examined gender differences in online travel information searches. The reasons why only three papers focusing on the topic have been published in the three journals included in this study since 2000 are beyond the scope of this paper but the results are nevertheless interesting.

Information and communication technologies present many opportunities for market segmentation. Despite an abundance of academic papers on market segmentation in tourism there are only few focusing on ICT. This study is the first to examine the topic in detail and differs from previous segmentation reviews by not focusing only on data-driven segmentation studies but by examining the topic with a wider perspective. This study provides a detailed analysis for market segmentation researchers and practitioners of the effects and opportunities of ICT for segmentation.

The objective of this paper was to review market segmentation studies in tourism from the perspective of Information and Communication Technology. Of the 188 studies reviewed for this study only 58 could be regarded as market segmentation studies influenced by ICT. Research on eTourism is a growing trend and the results of this study support this. As can be seen from Figure 1, more ICT related market segmentation studies in tourism were published in the second half of the last decade than in the first half. Further examination showed that most of the aforementioned 58 studies used the Internet as a data collection method or as a single source of information when comparing information search behavior. These studies demonstrate that the Internet has changed segmentation by providing new bases to be applied to segment tourists instead of well established segmentation variables such as socio-demographics or travel motivations.

The effects of ICT on segmentation theory have been very limited. According to the results of this study it seems that the greatest contribution of ICT to the theory comes from new opportunities for different segmentation bases. ICT can also

be used to measure segmentation efficiency very precisely by using, for example, clickstream data from a website. Segmentation methodology was beyond the scope of this paper but it can be stated that ICT has clearly affected it by providing new ways of analyzing data and enabling data mining as a segmentation approach.

The Internet is no longer merely one information channel among others. In many western markets the Internet is the main source of information and booking for tourists. ICT has changed how tourists plan and book their holidays, what they do during their holiday and what they do after the holiday. These changes in tourism behavior need to be examined more closely from a segmentation perspective. For a segmentation solution to be efficient, more information is required on how to target different segments in the Internet or on the differences between segments regarding their online information search behavior.

Sung (2004) found that the Internet was not the most important information source for any segment when classifying adventure travelers. This only stresses the change that has happened among consumers because of ICT as similar results, especially in western countries, would be very difficult to obtain nowadays. Spencer & Holacek (2007) also state that ICT has changed customer behavior in a way that makes using results of older segmentation studies questionable. However, the rate of ICT adoption is very high at the present moment in many Third World countries, where the number of Internet users is increasing rapidly. Market segmentation studies conducted in markets with high rates of growth in ICT usage should be interpreted with caution as they are probably not very stable over time.

Social media, according to Sigala et al. (2012, pp. 1), is "fundamentally changing the way travelers and tourists search, find, read and trust, as well as collaboratively produce information about tourism suppliers and tourism destinations." However, in light of the papers reviewed in this research, the market segmentation literature on tourism connected to social media is almost non-existent. This can be regarded as a crucial research gap in the segmentation literature as social media is becoming more and more important for travelers as well as for tourism companies.

A wide range of new tools and services have been developed since 2000 (Buhalis & Law, 2008). For example, tourism companies have widely adopted Google Analytics and its more expensive competitors to measure website use. Facebook also has its own tools to measure traffic on a Facebook page. However, these new tools are not to be seen in the papers reviewed in this study, pointing to a gap in research. These tools could be used to ground market segmentation literature on a more solid empirical base as suggested by Foedermay and Diamontopoulos (2008). Segmentation could also provide valuable insights into lowering cost-per-click advertisements and increasing click-through-rate. Clickstream analysis could also provide companies and especially researchers with new ways to collect data for segmentation purposes instead of online and e-mail questionnaires often used in tourism research. Many tourism companies are already using these tools, making it important for researchers conducting market segmentation to work closely together with companies.

Yet another important topic seems to be combining segmentation with website design and development (Perdue, 2001). Web marketing can be regarded as

consisting of two phases: first, how to get users to a website and second, how to get website users do what they are required to do, thus increasing the conversion rate. Segmentation is crucial in both phases, first in marketing the website to the right people in the right channels and second in designing and developing the website to serve the users as efficiently as possible, creating ways for marketers to customize their offerings (Gretzel et al. 2004).

In many other contexts ICT and the Internet are regarded as important topics for future research. This has not been the case in segmentation in tourism, as can be seen from this review. Searches conducted on other journals not included in this study such as Information Technology & Tourism resulted in only a few non-critical hits. The Internet also has its own limitations, which are seldom discussed in the segmentation studies. For example, the study by Dolnicar et al. (2009) shows that neither pure online surveys nor pure paper surveys administered through regular mail are unbiased.

Segmentation can be regarded as a three-part process, involving the segmentation itself, market positioning and market targeting. It is clear that the main focus in the segmentation process has been on segmentation itself, and studies relating to positioning and targeting are not as numerous. The Internet and ICT provide new tools and ways for companies to position themselves and target the right customers and measure the success of these efforts, but these are very rarely discussed in the literature.

This study provides researchers interested in studying market segmentation in the eTourism context with a literature review of how ICT has affected segmentation. For tourism practitioners this study also reviewed some of the main findings of earlier studies and explores what it means to segment customers in an online context.

7. LIMITATIONS AND OPPORTUNITIES FOR FUTURE RESEARCH

This research synthesized the main literature regarding market segmentation and eTourism. However, it should be noted that there are a few limitations. ICT is a continuously developing topic and it is quite possible that studies conducted by practitioners have not been published in the academic literature. Much academic literature was not included in this study as only three tourism journals were examined. These three journals, however, have published a large number of segmentation studies and are among the top ranked tourism journals (McKercher et al. 2006). Limiting articles only those that include the word segmentation may have excluded some articles important to the topic, especially a priori studies, as they may not always be recognized as segmentation studies. To the best of the author's knowledge, no studies essential to reviewing the topic were omitted from the study. The focus of this study was on leading tourism marketing and research journals and publications such as the Journal of Information Technology & Tourism were not included.

Some studies have been published which are important to the topic of ICT and segmentation, but were not included in this review because they were published before 2000 or did not include the word segmentation in the topic, abstract or among the keywords. For example, Bonn et al. (1998) conducted a study to examine sociodemographic and behavioral characteristics among users and non-users of Internet as a pleasure travel planning tool. These limitations are not severe, as in ICT the older publications are mostly outdated as the field is developing so rapidly.

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SEGMENTATION OF RURAL TOURISTS: COMBINING PUSH AND PULL MOTIVATIONS

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Abstract
Rural tourism is an important form of tourism in many countries, including Finland. To understand rural tourists' behaviour and help tourism companies market their products more efficiently many scholars have segmented rural tourists in several different geographical locations. This study aims to combine segmentation approaches used in earlier studies, namely motivation and benefit segmentation, and segment online rural tourists in Finland. Data is collected in a rural tourism affiliate website and analysed using cluster analysis on tourists' motivations. Among 727 respondents, four rural tourist segments are found: "Social travellers", "Wellbeing travellers", "Home region travellers" and "Family travellers". The segments differ from each other in motivations, preferred destination attributes, travel behaviour and socio-demographic factors. Understanding these differences will provide rural tourism companies important information to successfully market their products by combining both push and pull motivations in their marketing and product development.[*]
Keywords segmentation, motivations, benefits, cluster analysis, push, pull, tourism marketing

INTRODUCTION

Segmentation is used to gain a better position in the markets compared to competitors because it provides valuable information on customers and makes it possible for a destination to adjust its offering to better match customers' needs (Matzler et al., 2004). This is important because, according to Buhalis (2000), each destination can only match certain types of demand. Hence, destinations should be aware of the needs and wants of potential tourists in order to manage the destination resources and attract the correct customer groups.

Rural tourism has been a popular research topic among tourism scholars. Results of Frochot (2005) in Scotland, Royo-Vela (2009) and Molera and Albaladejo (2007) in Spain, Kastenholzet et al., (1999) in Portugal, Park and Yoon (2009) in Korea, Komppula (2005) and Pesonen, Komppula and Laukkanen (2009) in Finland as well as the literature review in a study by Cai and Li (2009) show that rural tourists in different countries have several similarities: they are most often motivated by opportunities to learn and explore nature or different cultures, participate in outdoor activities and search for peace and solitude. They may expect family togetherness, peace and quiet,

friendly reception, change from routine and good food. Beautiful landscapes, opportunities for outdoor activity and hassle-free environments tend to attract rural tourists. Despite the similarities several differences can be found especially in relation to expectations towards farming activities, heritage or other destination attributes.

Earlier rural tourism segmentation studies have mainly compared what segments are like or what they do instead of studying what they would like. This information is particularly important in order to develop rural tourism businesses and destinations. Earlier studies have either segmented rural tourists based on their travel motivations (i.e. push motivations) (e.g. Park & Yoon 2009), benefits (i.e. pull motivations) they seek from a destinations (e.g. Kastenholz et al. 1999) or a combination of these two (e.g. Molera & Albaladejo 2007). However, in rural tourism segmentation using both push and pull motivations has rarely been investigated in a single study. Instead, most studies have focused on what activities members of different segments want to do during their holiday (e.g. Park & Yoon 2009).

This article contributes to the existing segmentation literature by combining both push and pull segmentation in a single study. Finding combinations of motivations and destination attributes rural tourists value helps rural tourism companies to plan their marketing and product development. Earlier rural tourism segmentation studies that have used either motivations, destination attributes or their combinations as the segmentation base have not examined them as two separate concepts. Understanding how different motivations affect the destination attributes customers think of as important can be regarded as essential in understanding how customer expectations, satisfaction and value are formed (Gnoth, 1997; Snepenger et al., 2006). This study also contributes to rural tourist segmentation in Nordic and in this case Finnish context as earlier studies have focused mainly on other geographic regions.

The purpose of this research is to segment internet users who seek information regarding their rural tourism accommodation according to their push motivations. Then the importance of destination attributes, i.e. pull motivations, between segments are compared. This kind of research will provide rural tourism companies more options in differentiating their offerings and academically it will increase the knowledge on interaction between push and pull motivations.

This study is structured in three parts after the introduction. First, a literature review of earlier studies is conducted in order to examine segmentation literature in tourism regarding push and pull factors. Also goals of this study are presented. Next, methods and material used in this study as well as the results are presented. In the third and final part results of this study are discussed and conclusions and managerial implications as well as limitations of the study are presented.

BENEFIT AND MOTIVATION SEGMENTATION IN TOURISM: PUSH AND PULL ITEMS

Psychographic segmentation is the most popular data-driven segmentation method in tourism literature (Dolnicar, 2006). According to Kotler and Keller (2006), in psychographic segmentation buyers are divided into different groups on the basis of psychological or personality traits, lifestyle or values. In tourism segmentation this has generally meant using either motivations (e.g. Bieger & Laesser, 2002), benefits (e.g. Molera & Albaladejo, 2007) or Attitudes, Interests and Opinions (e.g. González & Bello, 2002). In her literature review on data-driven market segmentation in tourism Dolnicar (2006) observed that three quarters of all studied used psychographic constructs such as benefits, motivations and preference as grouping criterion. In this study the focus is especially on benefit and motivation segmentation studies, as they are in tourism marketing literature closely related to each other.

Push and pull factors are central concepts in tourist motivation literature. According to Baloglu and Uysal (1996) these concepts involve the theory that people travel because they are pushed and pulled to do so by "forces". They continue that "these forces (motivational factors) describe how individuals are pushed by motivational variables into making a travel decision and how they are pulled (attracted) by the destination area" (Balogly & Uysal, 1996, pp. 32).

Benefit segmentation was introduced by Russell Haley in 1968 as a technique for indentifying market segments by causal factors. According to Haley (1968, pp. 31), "The belief underlying this segmentation strategy is that the benefits which people are seeking in consuming a given product are the basic reasons for the existence of true market segments."

The difference between motivation and benefit segmentation is sometimes unclear. According to Frochot and Morrison (2000) there have been some mixed interpretations of benefit segmentation in tourism research because Haley never proposed a precise definition of benefits. Based on the review of benefit segmentation in tourism by Frochot and Morrison (2000), benefit segmentation studies can be divided into three parts based on what kind of benefit statements are used: 1) studies that use motivations, 2) studies that use destination attributes and 3) studies that have mixed both attributes-based and psychologically based benefits.

Even though motivation segmentation has been stated as a way to do benefit segmentation (Frochot & Morrison, 2000), for the purpose of this study they are seen as separate concepts. In this study motivation segmentation is regarded as segmentation based on push factors and benefit segmentation is based on pull factors. Much has been written on the concept of push and pull factors in tourism but only a few researchers have examined the relationship between the two dimensional forces as factors of tourist motivations (Baloglu & Uysal, 1996). In this study push motivations are tourist's intrinsic attributes that motivate them to travel, whereas pull motivations are destination attributes that determine which destination tourist chooses based on how well the destination attributes match the needs derived from push motivations.

There are a countless number of push and pull motivations used in earlier tourism segmentation studies. For example Frochot and Morrison (2000) list altogether 26 benefit statements used in benefit segmentation studies conducted between years 1980 and 1998. These benefit statements are all push items, i.e. factors that motivate tourist to travel. There are also many studies that have used destination attributes or pull factors to segment tourists but despite the popularity of pull factors there is no universally accepted set of destination attributes as they are destination dependant. According to Frochot and Morrison (2000) in tourism benefits are often attached to a specific destination, vacation or activity and cannot be generalized. For example Sarigöllü and Huang (2005) segmented visitors to Latin America using 24 different destination attributes mostly including activities.

This study aims to combine motivation (push) and benefit (pull) segmentation in the context of rural tourism. This study has three goals:

1) to segment potential rural tourists according to their travel motivations,
2) to compare segments regarding important destination attributes and
3) to compare socio-demographic factors and travel behaviour.

METHODS AND MATERIAL

Data collection and base sample

Data were collected on the Finnish Cottage Holidays Affiliate website www.lomarengas.fi during summer 2009 using banner advertisement. Website users clicking the banner were directed to the questionnaire page. Respondents were asked to state their interest in rural holidays and provide information on what kind of rural holiday they are planning to have or would like to have regarding the destination attributes they preferred by rating the importance of 48 different rural destination attributes (Table 2). Also a list of 31 motivation statements based on earlier literature on rural tourism segmentation was presented to respondents (Table 1). The push and pull statements were based on a literature review of rural tourism segmentation studies, benefit segmentation studies and studies on customer value and experiences in tourism (Otto & Ritchie, 1996; Tapachai & Waryszack, 2000; Williams & Soutar, 2000; Duman & Mattila, 2003; Komppula, 2005; Sánchez et al., 2006; Gallarza & Gil, 2008). The goal in variable selection was to choose the most often used and the most relevant push and pull motivations for rural tourism. Respondents were asked to rate different items using Likert-type scale from 1 (Not at all important) to 7 (Very important). Altogether 1043 questionnaires were completed by users of the website, 316 responses had to be deleted because of missing answers. Remaining 727 questionnaires suitable for the analysis methods used in this study were analysed using PASW Statistics 18 program.

Analysis

In this study segmentation approach presented by Boksberger and Laesser (2009) was used. Different segmentation approaches from several other studies were tested, but aforementioned approach produced the most usable and logical results regarding tourists' motivations. In this study Tamhane's T2 test was used instead of Bonferroni corrected *p*-values that Boksberger and Laesser (2009) used. This was justified as Tamhane's T2 is more conservative and thus produces more trustworthy results with sample size of this study. Also the homogeneity of variance test between segments revealed great statistical significances between segments regarding motivation and destination attribute scores.

Average mean score across all motivation statements was calculated for each respondent and these scores were used to calculate relative importance of each item for each respondent. K-means cluster analysis was used to find the segmentation solution. Final number of clusters was determined by examining graphical results (dendogram) and the best discrimination result between the groups. Clusters were compared using ANOVA and post-hoc tests were conducted with Tamhane's T2 test.

RESULTS

Discriminant analysis

Results of the discriminant analysis reveal that the travel motivations *I would like to relax away from the ordinary*, *I would have a feeling of romance* and *I could visit places my family comes from* have most discriminating power between all clusters (in descending order). These results were used in naming clusters. Three discriminant functions were generated. Function 1 explains 72.3 % of variance with eigenvalue 3.668, function 2 explains 18.2 % of variance with eigenvalue 0.924 and function 3 explains 9.5 % of variance with eigenvalue 0.481. Based on the classification matrix, 95.0 % of all cases are correctly classified.

Cluster analysis

K-means cluster analysis was used to find rural tourist segments based on their motivations. Trials with two to seven clusters were executed. Based on the results of cluster formation and discriminant analyses the solution with four clusters formed the most distinctive and logical segments (Table 1).

Cluster A is named as "Social travellers" as they rate many motivations that include other people higher than other segments. For example chance to meet interesting people, sense of cooperation between the hosts and the traveller and involvement in the service process are more important for "Social traveller" than for other segments. Also control and feeling that the traveller is important are significant motivations for "Social travellers". They also differ from other segments in the importance of romance in their holidays: for "Social travellers" feeling of romance is clearly more important than for any other segment.

Cluster B is labelled as "Wellbeing travellers" as motivations traditionally related to wellbeing are more important for them than for any other segment. Escape from busy life, refreshing, physical rest, relaxation and comfort as well as security are important motivations for "Wellbeing travellers" when compared to other segments.

Cluster C has very low scores in most motivation statements when compared to other segments. However, for this segment visiting places where their family comes from is clearly more important than for other segments. Based on this the segment is named as "Home region travellers".

Last segment is labelled as "Family travellers" as they are the most motivated by being together with family of all segments. It is also the most important travel motivation for this segment. "Family travellers" are also experience travellers, as motivations such as having fun, having memorable and "once in a lifetime" experiences and exploring new places were important for "Family travellers" when compared to other segments, especially "Wellbeing travellers" and "Home region travellers".

Table 1: **Motivation item means among clusters**

Item	Sample mean	Cluster A (N=213)	Cluster B (N=164)	Cluster C (N=148)	Cluster D (N=202)
I am doing something I really like to do	5.84	5.68	5.89	5.77	6.01[A]
It will be a memorable experience	5.56	5.78[B]	4.86	5.46[B]	5.98[B,C]
I would have a hassle-free vacation	6.02	5.68	6.35[A,D]	6.17[A]	5.99
I would like to escape from a busy everyday life	6.03	5.78	6.38[A,C,D]	6.02	6.01
I would have fun and/or be entertained	5.97	5.91	5.71	5.97	6.24[A,B]
There would be an opportunity to be together as a family	5.89	5.37	5.78[A]	6.18[A]	6.33[A,B]
I could visit places my family comes from	3.27	4.01[B,D]	1.85	4.60[A,B,C]	2.66[B]
I would have a feeling like I was being pampered	4.91	5.42[B,C]	4.02	4.78[B]	5.17[B]
I would get refreshed	6.22	6.07	6.37[A]	6.13	6.35[A]
I would have an opportunity for physical rest	5.80	5.67	5.96	5.88	5.77
I would have an opportunity to be physically active	4.70	5.00[B,C]	4.15	4.57[B]	4.94[B]
I would feel at home away from home	5.46	5.51	5.16	5.51	5.59[B]
I would be doing something thrilling and exciting	4.59	5.29[B,C]	3.12	4.35[B]	5.22[B,C]
I would have a "once in a lifetime" experience	4.43	5.24[B,C]	2.74	3.95[B]	5.31[B,C]
I would like to share my experience with others later on	4.53	5.27[B,C]	2.87	4.37[B]	5.20[B,C]
I would be stimulated or challenged in some way	4.20	5.05[B,C]	2.38	4.01[B]	4.93[B,C]
I would like to have a sense of comfort	6.19	5.95	6.42[A,C]	6.13	6.32[A]
I would like to relax away from the ordinary	6.42	6.14	6.74[A,B,C]	6.44[A]	6.46[A]
I would like to have a feeling of	5.94	5.67	6.13[A]	5.87	6.12[A]

Item	Sample mean	Cluster A (N=213)	Cluster B (N=164)	Cluster C (N=148)	Cluster D (N=202)
personal security					
I would like to have a feeling that my privacy would be assured	5.71	5.54	5.93	5.58	5.82
I would like to be involved in the service processes	3.84	4.51^{B,C,D}	2.84	3.97^B	3.85^B
I would have a variety of things to see/do	4.58	5.21^{B,C}	3.48	4.26^B	5.05^{B,C}
I would have some control over the way things turn out	4.20	4.84^{B,C,D}	3.40	4.03^B	4.29^B
I would have a sense of cooperation between the host and me	3.64	4.69^{B,C,D}	2.06	3.35^B	4.02^{B,C}
I would have a feeling that I am important	4.27	5.26^{B,C,D}	2.95	3.54^B	4.85^{B,D}
I would have a feeling like I was on an adventure	4.37	5.39^{B,C}	2.69	3.59^B	5.21^{B,C}
I would experience different culture	4.54	5.45^{B,C}	3.27	3.59	5.32^{B,C}
I would explore new places	5.02	5.79^{B,C}	3.84	4.06	5.88^{B,C}
I would have a feeling of romance	2.64	4.86^{B,C,D}	1.63	1.96	1.60
I would have a chance to meet interesting people	4.40	5.76^{B,C,D}	2.73	3.68^B	4.86^{B,C}
Go to places friends haven't been	3.66	5.42^{B,C,D}	1.93	2.55^B	4.03^{B,C}

*Superscript denotes segments that have significantly lower mean score (p<0.05)

Important destination attributes

There are many statistical differences between segments in destination attributes (Table 2). Most differences are between "Socials travellers" that value several destination attributes more than "Wellbeing travellers" and "Home region travellers". Among other destination attributes "Social travellers" value public transportation, socializing with other people, history, culture and handicraft making significantly more than other segments. Also organized program and trips are more important for "Social travellers" than for other segments.

"Wellbeing travellers" differ statistically only from "Social travellers" by valuing calm atmosphere and spending time outside in nature more than "Social travellers". "Home region travellers" value opportunity to go to sauna every day and full time self catering more than other segments but differences are not statistically significant.

"Family travellers" differ significantly from other segments in many ways. Safety of the destination is top priority for "Family travellers". They also value beautiful landscapes, but differences are statistically significant only when compared to "Social travellers". When comparing to "Wellbeing travellers" and "Home region travellers" "Family travellers" value opportunity for daytrips, variety of things to see and do, historic sites, participating local festivals or events and especially that hosting company is environmentally qualified.

Table 2: **Importance of destination attributes for segments**

Destination attribute	Sample mean	Social travellers (A)	Wellbeing travellers (B)	Home region travellers (C)	Family travellers (D)
Price of accommodation is low	5.65	5.81[B]	5.42	5.55	5.76
I do not need to make major efforts in searching information about the destination	5.46	5.65[B]	5.17	5.37	5.56[B]
The efforts to access the destination are low	5.45	5.59[B]	5.18	5.45	5.52
The time for travelling to the destination is short	4.80	5.06[B]	4.39	4.77	4.89[B]
I do not feel like wasting time when I make plans for the holiday	4.93	5.36[B,C]	4.27	4.85[B]	5.06[B]
The price for travelling (transportation) is low	5.38	5.55[B]	5.09	5.31	5.49
The destination is accessible by public transport	3.72	4.40[B,C,D]	2.91	3.62[B]	3.74[B]
The destination gives children an opportunity to have a good time	4.75	4.85	4.24	4.63	5.13[B]
The destination is not crowded	5.95	5.73	6.04	6.00	6.08[A]
In the destination there is a variety of things to see/do	4.97	5.5[B,C]	3.84	4.72[B]	5.51[B,C]
The destination is safe for everybody in the family	5.96	5.76	5.83	5.93	6.30[A,B,C]
The destination gives an opportunity to have good time together as a family	5.81	5.53	5.55	5.92	6.23[A,B]
The destination gives an opportunity to socialize with other people	4.26	5.13[B,C,D]	3.14	4.08[B]	4.40[B]
Make daytrips to the neighbouring countryside	5.37	5.63[B,C]	4.90	5.13	5.66[B,C]
Enjoy beautiful landscapes	6.42	6.26	6.48	6.39	6.56[A]
Enjoy a landscape with lakes/rivers/sea	6.42	6.31	6.52	6.44	6.46
Enjoy mountain landscapes	4.56	5.19[B,C,D]	3.79	4.26	4.74[B]
Spend time outside in nature	6.29	6.17	6.47[A]	6.16	6.38
Experience original/unspoiled rural landscapes	5.71	5.82[C]	5.57	5.40	5.93[C]
Enjoy the forest	5.83	5.84	5.82	5.76	5.89
Visit historic sites	4.70	5.27[B,C,D]	4.04	4.41	4.86[B,C]
Visit cultural attractions	4.59	5.22[B,C,D]	3.85	4.25	4.77
Experience a different culture	4.47	5.21[B,C]	3.41	3.82	5.04[B,C]
Enjoy local traditional food	5.33	5.76[B,C]	4.60	4.96	5.73[B,C]
Participate local festivals/events	4.58	5.29[B,C]	3.57	4.22	4.94[B,C]
Make long walks and hikes	5.09	5.29	4.91	4.93	5.14
Have a picnic in the countryside	5.10	5.49[B,C]	4.52	4.97	5.27[B]
Make short walks	5.78	5.79	5.84	5.59	5.87
Learn about the local nature	5.38	5.64[B,C]	5.06	5.11	5.57[B,C]
Get familiar with the original rural lifestyle	5.13	5.55[B,C]	4.44	4.82	5.46[B,C]
Meet local people	4.46	5.27[B,C,D]	3.24	4.22	4.78[B,C]
Handicraft making	3.28	4.27[B,C,D]	2.10	2.91	3.47[B,C]
See traditional live-stock pasturing	4.34	4.84[B,C]	3.70	4.07	4.54[B]
The hosting company is	5.76	5.74	5.62	5.59	6.00[B,C]

Destination attribute	Sample mean	Social travellers (A)	Wellbeing travellers (B)	Home region travellers (C)	Family travellers (D)
environmentally qualified (shows environmental responsibility)					
The hosts have pets (cats, dogs, rabbits etc.)	4.72	5.09[B, C]	3.98	4.55[B]	5.05[B]
The hosts spend time with the guests/are available for the guests	3.68	4.46[B, C]	2.41	3.39	4.09[B, C]
I do not need to rush according to schedules	6.36	6.07	6.62[A]	6.38[A]	6.45[A]
There is a calm atmosphere	6.32	6.08	6.53[A]	6.33	6.38[A]
I would have no language barriers	5.05	5.40[B]	4.52	5.03	5.12[B]
I have an opportunity to go to the sauna every day	5.71	5.77	5.68	5.81	5.61
Full board available (three meals/day)	4.13	4.81[B, C]	3.18	3.70	4.50[B, C]
Half board (breakfast and dinner) available	4.94	5.51[B, C]	4.11	4.64	5.24[B]
A variety of restaurants available in walking distance	4.56	5.11[B, C]	3.82	4.39[B]	4.70[B, C]
Local food available	5.13	5.62[B, C]	4.35	4.79	5.50[B, C]
That your accommodation gives you an opportunity for full time self catering	5.10	5.01	5.24	5.31	4.95
Daily organized program available	3.57	4.52[B, C, D]	2.44	3.22[B]	3.76[B, C]
Organized trips and other packages available	4.31	5.15[B, C, D]	3.27	3.91	4.56[B, C]
Bicycles, boats etc. for rent	5.52	5.79[B, C]	5.10	5.30	5.73[B]

*Superscript denotes segments that have significantly lower mean score (p<0.05)

Differences in preferred rural holiday attributes and socio-demographic factors

Segments have many statistical differences regarding their preferred rural holiday (Table 3). All respondents were planning going on a rural holiday within the next year. "Wellbeing travellers" and "Home region travellers" are most sure with their holiday plans whereas "Social travellers" and "Family travellers" have more undecided tourists than other segments. All the segments prefer cottage as their accommodation during rural holiday but "Social travellers" are most interested in other accommodation options. "Social travellers" have also the least experience of rural holidays whereas "Home region travellers" and "Wellbeing travellers" have the most experience. More than 40 percent of "Home region travellers" go on a rural holiday more than four times a year. "Home region travellers" travel mostly with their partner or spouse. Nearly 50 percent of "Family travellers" travel most probably with their family. Most probable to travel with their friends are "Social travellers".

Table 3: **Differences in travel behaviour between segments**

Travel behaviour	Social travellers	Wellbeing travellers	Home region travellers	Family travellers	χ²	Sig.
Rural holiday plans within the next year					10.6*	p=0.014
Yes	89 (41.8%)	84 (51.2%)	76 (51.7%)	76 (37.6%)		
Maybe	124 (58.2%)	80 (48.8%)	71 (48.3%)	126 (62.4%)		
Preferred accommodation					17.8*	p=0.007
Hotel room	17 (8.1%)	6 (3.7%)	6 (4.1%)	14 (7.1%)		
Farm room	45 (21.5%)	15 (9.1%)	20 (13.7%)	28 (14.1%)		
Cottage	147 (70.3%)	143 (87.2%)	120 (82.2%)	156 (78.8%)		
Most probably travel company on a rural holiday						
Spouse / partner	79 (37.4%)	67 (40.9%)	74 (50.3%)	87 (43.3%)	49.3*	p<0.001
Family with children under 12-years-old	39 (18.5%)	32 (19.5%)	24 (16.3%)	50 (24.9%)		
Family with children of different age groups	40 (19.0%)	29 (17.7%)	19 (12.9%)	47 (23.4%)		
Friends	30 (14.2%)	18 (11.0%)	18 (12.2%)	8 (4.0%)		
Alone	18 (8.5%)	7 (4.3%)	3 (2.0%)	0 (0.0%)		
Other	5 (2.4%)	11 (6.7%)	9 (6.1%)	9 (4.5%)		

When looking at Table 4, it can be seen that there are some differences between segments regarding to their education, age, annual income and gender. It seems that "Social travellers" are least educated while "Wellbeing travellers" have most travellers with university degree. "Social travellers" have the most under 25 years old members and "Home region travellers" have the most at least 45 years old respondents. 45- to 54-year-olds is the largest age group in all segments expect for "Social travellers" where 35 to 44 years old are the largest age group. "Social travellers" have also clearly smaller income than other segments. "Social travellers" have the largest proportion of men among respondents, 26.2 percent, but nevertheless females are majority in every segment.

Table 4: **Socio-demographic profiles of segments**

Socio-demographics	Social travellers	Wellbeing travellers	Home region travellers	Family travellers	χ²	Sig.
Education					18.5*	p=0.029
University degree	26 (12.4%)	40 (24.8%)	32 (21.8%)	29 (14.6%)		
Technical / Trade school / Vocational	124 (59.3%)	94 (58.4%)	88 (59.9%)	127 (63.8%)		
Upper secondary school	20 (9.6%)	11 (6.8%)	9 (6.1%)	18 (9.0%)		
Elementary school	39 (18.7%)	16 (9.9%)	18 (12.2%)	25 (12.6%)		

Socio-demographics	Social travellers	Wellbeing travellers	Home region travellers	Family travellers	χ²	Sig.
Age					35.8*	p=0.002
Under 25	24 (13.0%)	5 (3.4%)	6 (4.5%)	4 (2.2%)		
25-34	25 (13.5%)	33 (22.4%)	28 (20.9%)	42 (22.6%)		
35-44	57 (30.8%)	39 (26.5%)	34 (25.4%)	47 (25.3%)		
45-54	55 (29.7%)	46 (31.3%)	41 (30.6%)	72 (38.7%)		
55-64	21 (11.4%)	21 (14.3%)	23 (17.2%)	17 (9.1%)		
65 or older	3 (1.6%)	3 (2.0%)	2 (1.5%)	4 (2.2%)		
Annual income of the houshold						
Less than 15 000 €	33 (16.1%)	8 (5.1%)	5 (3.6%)	9 (4.7%)	39.8*	p=0.002
15 000 – 29 999 €	56 (27.3%)	39 (24.7%)	32 (23.4%)	45 (23.7%)		
30 000 – 44 999 €	53 (25.9%)	40 (25.3%)	34 (24.8%)	49 (25.8%)		
45 000 – 59 999 €	33 (16.1%)	30 (19.0%)	30 (21.9%)	44 (23.2%)		
60 000 – 74 999 €	16 (7.8%)	25 (15.8%)	22 (16.1%)	25 (13.2%)		
75 000 – 89 999 €	8 (3.9%)	11 (7.0%)	9 (6.6%)	7 (3.7%)		
At least 90 000 €	6 (2.9%)	5 (3.2%)	5 (3.5%)	11 (5.8%)		
Gender					20.6*	p<0.001
Male	55 (26.2%)	15 (9.3%)	20 (13.7%)	32 (16.9%)		
Female	155 (73.8%)	146 (90.7%)	126 (86.3%)	169 (84.1%)		

CONCLUSIONS, DISCUSSION AND LIMITATIONS

The results of this study do not only clarify the distinction between push and pull motivations but also enable rural tourism companies to plan their marketing efforts and product offerings more efficiently as they know what kind of destination attributes each segment, for example "Family travellers", value. Besides differences mentioned before, there are many similarities between segments. These are for example the most important travel motivations and destination attributes. For all segments the most important motivation is to relax from the ordinary, closely followed by getting refreshed and sense of comfort. Beautiful landscape as well as calm, rush-free atmosphere are among the most important destination attributes for all segments. These can be regarded as something that almost every rural tourist expects from his or her rural holiday. They form a baseline for tourists' expectations toward rural holiday.

In this study only domestic rural tourism in Finland is examined. From studies conducted in other countries it can be seen that rural tourism segments are not so different in other countries. In developing tourism foreign tourism is sometimes emphasized and the importance of domestic tourism is neglected. However, for many rural tourism companies domestic tourists are the most important source of income. By taking into account what kind of combinations of push and pull factors tourists would value it is possible to design attractive products that would encourage potential rural tourists to actually go on a rural holiday instead of just planning it.

In retrospect using both push and pull items to segment and describe segments produces accurate image of different segments. Some destination attributes are also activities and from the results it can seen that "Social travellers" are most active what comes to doing something in a destination whereas "Wellbeing travellers" prefer more passive rural holidays. These two segments are very similar to two of four segments, "The Actives" and "The Relaxers", found by Frochot (2005). Also in a study by Park and Yoon (2009) segments of "Passive tourists" and very active "Want-it-all" tourists can be found. This suggests that there are many similarities between different countries regarding rural tourist segments, albeit size of segments may differ. For example in Finland many people have roots in the countryside thus increasing the size of "Home region travellers" segments when compared to other, more urban countries.

Dolnicar (2002) states that quality level of segmentation studies could be substantially increased by choosing the data format and number of variables included in the study very carefully. In this study a large number of push and pull items are included to study their interrelationship. This means that used sample size, 727 respondents, is not as large as would be preferred. This problem has been attempted to deal with by using more conservative statistical methods, namely Tamhane's T2 test.

For the purpose of this study data was collected online in a Finnish affiliate website. This has resulted in a data where over 65-year-old respondents are almost nonexistent and there are more women than men among respondents. These facts should be kept in mind when interpreting the results. According to the marketing manager of the website which was used to collect the data, women are majority among their customers, but still somewhat overrepresented in this study.

Stability of the cluster solution is very important factor in segmentation studies (Dolnicar, 2002). To study the validity and stability of the clustering solution presented in this study a new study is to be conducted to examine how has the cluster solution changed during two-year period between studies. Even though cluster membership and relative proportion of travellers in each segment can change for individual travellers, all these segments probably exist at any given time in Finnish rural tourism. However, this requires further research.

MANAGERIAL CONTRIBUTION

This research has found four different rural tourist segments among online using Finnish tourists by segmenting them according to their travel motivations using k-means clustering method. The first segment, "Social travellers" is the largest segment with 29.3 percent of 727 respondents. The members of this segment clearly value social interaction with local people, hosts and other travellers. "Social travellers" segment has also more active and younger members than other segments. There are also more males and they are more likely to travel with their friends compared to other segments. This segment should be targeted with low-cost products as they valued low prices the most. This segment was also most interested in hotel accommodation, meaning that rural hotels could emphasize combination of social interaction, rural surroundings and activities in their marketing.

The second segment, "Wellbeing travellers", is the third largest segment with 164 respondents. For them a very quiet, calm and passive rural holiday is very important. They want that everything goes as planned during their holiday. They will choose a destination that can offer beautiful landscapes and good opportunities to spend time outside in nature.

"Home region travellers" is the smallest segment. The members of this segment are very difficult to target for rural tourism companies as they choose the destination based on where they or their family comes from.

Last segment, "Family travellers", is the second largest. They want to spend time with their family, have new and memorable experiences and have fun. Safety and family friendliness of the destination as well as well as landscape and environmental aspects of the hosting company play an important part in choosing a destination. These factors should be taken into account when planning marketing efforts for this segment.

All rural tourists seem to be motivated by relaxation, closely followed by getting refreshed and sense of comfort. Beautiful landscape as well as calm, rush-free atmosphere were among the most important destination attributes for all segments. These can be regarded as basic level of service for almost all rural tourism companies in Finland, something that everyone expects when they come to a rural destination.

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Testing segment stability: insights from a rural tourism study

Juho Pesonen

ABSTRACT

Majority of earlier segmentation studies have focused on finding segmentation solutions rather than on applying the results to practice and testing the viability of the results. In this study a unique opportunity is used to test how the segmentation solutions of an earlier rural tourism segmentation study conducted in 2009 represent rural tourist segments in 2011 and how well rural tourists can relate to the segments found in the earlier study by using multiple choice questions. Also different segmentation methods are compared regarding their accuracy to identify the segments. These results show that the four segments identified in the earlier study continue to exist two years later as respondents are able to relate to the segments quite well. However, segment sizes are crucially different and there is some overlap between segments. Travel motivations measured using binary scale produce more accurate segments than if motivations were measured using Likert-type scale.

Key words: market segmentation, rural tourism, cluster analysis, segment stability, segmentation criteria

INTRODUCTION

According to Dolnicar and Grün (2008, pp.63), ideal market segments "contain tourists with similar tourism needs and behaviors, similar sociodemographic profiles, who are profitable, who could easily be reached with marketing communication messages, who match the strengths of the tourism destination or business, and whose needs are not catered for by major competitors." Besides these criteria many authors (e.g. Dibb & Simkin, 2010; Morrison, 2002) regard that ideal segments should also be stable over certain periods of time. However, in the market segmentation litera-

ture and in the case of a posteriori segments tracking of market segment trends is neglected (Dolnicar, 2004). Longitudinal market segmentation studies are not very common and the topic of segment stability is very seldom discussed in the literature.

There are two basic ways to segment markets. In a priori or common sense segmentation (Dolnicar, 2002) individuals are grouped according to a criterion known in advance, such as age or gender. In a posteriori or data-driven segmentation (Mazanec, 2000) or post hoc segmentation (Wedel & Kamakura, 1998) an empirical data set is analyzed using quantitative techniques in order to derive a grouping. Most of the earlier market segmentation research in tourism has focused on finding a segmentation solution based on common sense or data-driven research and then validating those results by comparing external factors such as socio-demographics, activities or buying behaviors. According to Everitt (1993), most studies conducted a posteriori segmentation use a technique belonging to the family of cluster analysis. However, cluster analytic techniques will always render a result whether or not there really are meaningful segments in the data (Dolnicar, 2003). This problem can partially be overcome by using several different techniques when analyzing the data but still the problem persists. The usefulness of any data-driven segment identification is dependent on two things: the quality of the data and the best possible use of cluster analysis or any other segmentation method (Dolnicar, 2002), making data collection and analysis a crucial part of the data-driven market segmentation process.

This study examines both data collection and data analysis in data-driven market segmentation in tourism. The purpose of this study it to test the results of an earlier segmentation study and to see how stable market segments identified in that study are and what are the different means to find them again, thus validating the results of the earlier study. By comparing different clustering methods this study also examines the accuracy of different solutions. The present study contributes to tourism segmentation literature by examining the stability of an earlier segmentation study using separately collected empirical data and measuring segmentation effectiveness as well as to choosing the correct segmentation solution. Cluster overlap in segmentation is also discussed.

The context of this study is rural tourism. In the tourism and hospitality literature market segmentation is a popular topic. Especially in rural tourism segmentation has proven to be an important field of study (e.g. Park & Yoon, 2009; Pesonen 2012). Tourism is often seen as an opportunity for rural economic development (Cawley & Gillmor, 2008). People come from urban centres to the countryside to enjoy the natural settings, peace, quiet and leisure activities it can offer (Finnish Ministry of Agriculture and Forestry, 2013). There has been ample interest in the literature in segmenting rural tourists. Park and Yoon (2009, pp. 99) state that "we need to know the causative factors and influences by which tourists in rural areas are motivated to become included in various market segments." It is also important to gain a better understanding of the demand for rural tourism (Molera & Albaladejo, 2007) or rural tourist behavior (Pesonen, 2012), providing deeper insight into the profiles of rural tourists (Frochot 2005) and the lack of research addressing the rural tourism sector (Kastenholz et al. 1999).

LITERATURE REVIEW

Market segmentation and segment quality criteria

Common to many market segmentation studies in tourism is the use of clustering methodology to find a segmentation solution (e.g. Kastenholz et al. 1999; Molera & Albaladejo, 2007; Frochot, 2005; Park & Yoon, 2009; Pesonen, 2012). According to Dolnicar (2002), clustering has become a very popular way of identifying market segments based on survey data. However, the results of segmentation studies using the cluster partitioning method are more than questionable because of some very fundamental weaknesses (Dolnicar, 2002). Often in segmentation studies stability is tested and results are assumed to be valid and reliable if the segments are found repeatedly in the data set. As cluster is an exploratory tool (Dolnicar, 2002) the results constitute one of many possible solutions. It is important that solutions are useful for industry purposes, and according to Dibb and Simkin (2010), close attention has to be paid to segment quality.

In rural tourists have been segmented primarily by travel motivation (Park & Yoon, 2009) or by the benefits they seek (Kastenholz et al. 1999; Frochot, 2005; Molera & Albaladejo, 2007). A combination of the two has also been used (Pesonen, 2012). Oh and Schuett (2010) explored a visitor segmentation approach based on rural visitor spending behavior. Common to all these studies is the use of cluster analysis to identify the market segments.

Many studies have been presented assessing the various segment quality criteria (Dibb & Simkin, 2010). Kotler and Keller (2006) propose five key criteria for market segments to be useful: market segments have to be measurable, substantial, accessible, differentiable and actionable. Middleton et al. (2009) also use five criteria and state that segments have to be discrete, measurable, viable, appropriate and sustainable. Morrison (2002) also presented eight criteria for evaluating the success of a segmentation scheme. According to Morrison (2002) segments have to be homogenous, measurable, substantial, accessible, defensible, competitive, compatible, and durable. According to Wilkie (1994) there are three criteria for a true market segment. Members of the segment must be similar to other members of that segment as well as different from members of other segments. Members of a segment should also respond in a similar manner to a specific marketing mix. The organization in question should also be able to develop an efficient marketing mix for each segment.

Dibb and Simkin (2010) examined the practical application, impact and efficacy of segment quality criteria using a longitudinal case study from the Eastern European mobile phone market. They reviewed the earlier segmentation literature to identify the published segment quality criteria. As a result of a literature review they listed six segment quality themes and one underlying requirement for segmentation. The underlying requirement was that the market to be segmented must be heterogeneous. The six segment quality themes are homogenous segments, segment size and potential profitability, segment stability, segment accessibility, segment compatibility, and segment actionability.

Testing the quality of the segments is a crucial step in the market segmentation process (Dibb & Simkin 2010). Despite the importance of segment stability, it has not often been reported in the literature. According to Dibb and Simkin (2010), using qualitative criteria to evaluate the quality of the segments makes it possible to assess the intuitive managerial logic of the recommendation . Segmentation results can hardly be useful for managerial purposes if they are not stable over time, meaning that the results should be useful beyond the time of data collection. The segments should also be easy to interpret for companies aiming to utilize the results. It can be a limitation in a market segmentation study if people cannot relate to segments identified using statistical methods. In this study attention is paid especially to segment size and segment stability.

IDENTIFYING MARKET SEGMENTS

Numerous methods have been proposed to find the segmentation solution from a quantitative data set. The most common of these is the use of cluster analysis, which refers to a large number of techniques for grouping respondents according to their similarities and differences (Dolnicar, 2003). Dolnicar (2003) also states that each technique is different and typically leads to different segmentation solutions. Therefore special attention should be paid to selecting the algorithm to be imposed on the data.

There is no clear consensus in the market segmentation literature whether ordinal, nominal or metric data should be used when measuring the segmentation base. According to the literature review by Dolnicar (2002), most earlier market segmentation studies in tourism have used ordinal data, which is used twice as often as nominal data. However, studies comparing segmentation results between ordinal and nominal data in the same data set are virtually nonexistent in tourism research. Studies comparing different segmentation approaches in the same study have been very uncommon in the tourism segmentation literature. There has been considerable debate over which bases and statistical approaches provide the best segmentation solutions (Moscardo et al. 2001).

A great deal of criticism has been leveled at cluster analysis in marketing and management literature. For example, Ketchen and Shook (1996) analyzed 45 published strategy studies and found that the implementation of cluster analysis has been often less than ideal. Dolnicar and Leisch (2003) presented a bagged clustering approach to segment visitors in order to increase the stability of segmentation results. They suggest that further research is needed to prove that the segments extracted are not artifacts of the partitioning procedure. Dolnicar and Grün (2008) argued that when finding segmentation solutions the traditional "factor-cluster segmentation" is not generally the best procedure to identify homogenous market segments. They conclude that clustering the raw data directly is the superior alternative to "factor-cluster segmentation" as it identifies the true heterogeneity in the data better.

There is also a possibility that market segments can overlap each other. According to Saunders (1994) in conventional cluster analysis observations are separated into mutually exclusive sub-sets which are then described, whereas

in reality segment members could belong to more than one group. Baloglu and Uysal (1996) found significant overlap with German overseas pleasure traveler segments using canonical correlation analysis. However, cluster analysis, the most popular segmentation method in tourist segmentation (Dolnicar, 2002), does not allow segment overlap and the topic of overlapping segments with means cluster analysis is not often discussed. In this study overlap of segments found using k-means cluster analysis is explored.

Pesonen (2012) conducted a market segmentation study on travel motivations among Finnish rural tourists in summer 2009. He identified four rural tourist segments: Wellbeing Tourists, Home Region Tourists, Family Tourists and Social Tourists. In this study the validity of the results of an earlier rural tourist segmentation study by Pesonen (2012) is examined using qualitative criteria, that is, how users of the same website can relate to segments found in the earlier study. The idea is quite similar to that applied in the study by Horneman et al. (2002), who asked respondents to rate the preference of discriminating factors of an earlier segmentation study to categorize senior travelers into those segments.

According to Dibb and Simkin (2010), one of the difficulties marketers face is testing the quality and robustness of segments. Saunders (1994) states that statistically significant results have to be usable and accepted by managers. Managers have to believe in the clusters formed, recognize them, and see how they can be used. Market segments cannot be only academic concepts; their effectiveness must be proven in reality. By examining how well tourists can relate to segments identified using statistical methods it can be shown that the segments also exist in reality.

It is recognized in the literature that individuals belong to different market segments during different life phases. According to lifecycle theory, as people get older their needs and social roles change, and likewise their travel motivations (Boksberger & Laesser, 2009; Horna, 1994). Thus the important question in segmentation is not if a person belongs to one segment or another. The question is if the segments exist at any given time and behave and respond to marketing mix in the way they are expected to. It is also important that the tourists in the same segment behave in the same way. The lifecycle theory from the segmentation point of view means that even though a person may change the segment of which he or she is a member, that person will still behave as expected when included as a member of a certain segment.

The use of Likert scales and cluster analysis has also been criticized. Despite being a much used tool for market segmentation, cluster analysis has several pitfalls. One of these is that it always produces a solution regardless of the data or the if there are or are not patterns in the data that can be regarded as segments (Dolnicar, 2003). Cluster analysis is also highly susceptible to response style effects, especially when using data measured using Likert-type scales. According to Hair et al. (2010), there is a possibility that when clustering data is collected using, for example, a number of ratings on a 10-point scale, we could end up with clusters of people who said everything was important, some who said everything was of little importance and maybe some clusters in between. This is called response-style effect and results resembling it can be seen in many different segmentation

studies in tourism (see e.g. Bieger & Laesser, 2002; Chung et al., 2004; Füller & Matzler, 2008; Park & Yoon, 2009). Data driven segmentation is heavily dependent on the segmentation method and data analysis conducted. These , however, are very rarely discussed in the literature. There is a need to test different methods and thus improve the quality of data analysis when segmenting tourism markets.

Arimond and Elfessi (2001) demonstrated that multistate categorical survey data can be successfully used to cluster tourists. They stated that in the future other methods for clustering market segments with qualitative, categorical data should be investigated. Arimon and Elfessi (2001) as well as Green and Krieger (1995) suggest that it would be useful to run comparative studies using the traditional quantitative ratio scale segmentation methods.

In light of the literature review and the gaps found in the way market segmentation is conducted in the field of tourism and hospitality research, the purpose of this study is to examine the quality of the market segmentation results of an earlier study, in this case a rural tourism segmentation study based on travel motivations (Pesonen, 2012). This study examines rural tourists' perceptions of the clusters that should represent them and tries to find clusters similar to those reported by Pesonen (2012) by collecting new quantitative data and comparing the results to those reported by Pesonen (2012). This study has thus four research questions:

- How well can Finnish rural tourists relate to previously identified rural tourist segments?
- How much overlap there is between segments?
- How accurately can market segments be rediscovered from new data using quantitative clustering methods?
- How do travel motivation segments identified using Likert scale data differ from segments identified using binary data regarding the accuracy of the segmentation solution with self-selective segment membership?

MEASUREMENT

The starting point for this study is the study conducted by Pesonen (2012) in 2009. In earlier market segmentation studies focusing on rural tourists in Finland four different rural tourist segments have been identified (Pesonen, 2012; Pesonen & Komppula, 2010). Pesonen (2012) collected a quantitative data during summer 2009 on the largest Finnish rural tourism website using a survey questionnaire. The survey focused on what motivates rural tourists to travel and what kind of destination attributes they value. Altogether 727 usable answers were collected by Pesonen (2012). Pesonen segmented the website users into four segments on the basis of their travel motivations using K-means cluster analysis with data preprocessed to account for response style effects by calculating average mean scores across all motivation statements for each respondent and using these scores to calculate relative importance of each item for each respondent. The segments identified were Social Travelers (N=213, 29.3 %), Wellbeing Travelers (N=164, 22.6 %), Home Region Travelers (N=148, 20.4%) and Family Travelers (N=202, 27.8 %) (Pesonen, 2012).

To examine segment stability over time and to compare different market segmentation methodologies three different kinds of data were collected in this study:
1) Travel motivations measured with 7-point Likert-type scale,
2) Travel motivations measured with binary scale (important / not important) and
3) What segment identified by Pesonen (2012) best describes the respondent in his or her own opinion.

Pesonen (2012) used 31 travel motivation statements, measured using 7- point Likert-type scale ranging from 1 (not at all important) to 7 (very important). To keep this questionnaire short and to get more responses only those travel motivations that differentiated the clusters the most were included. Including more items from the study by Pesonen (2012) would have made this questionnaire considerably longer and would not have helped in separating the clusters. Similar 7-point Likert-type scale that Pesonen (2012) used was utilized. The respondents were asked to rate the importance of the following 12 travel motivations:

- I would have a hassle-free vacation
- I would like to escape from a busy everyday life
- There would be an opportunity to be together as a family
- I could visit places my family comes from
- I would have a feeling like I was being pampered
- I would have an opportunity to be physically active
- I would have a "once in a lifetime" experience
- I would like to relax away from the ordinary
- I would have some control over the way things turn out
- I would experience different culture
- I would have a feeling of romance
- I would have a chance to meet interesting people.

To measure travel motivations on a binary scale travel motivation statements from the study by Bieger and Laesser (2002) were used. Altogether 10 travel motivations were used. Respondents were asked to choose at least one and at most three different travel motivations that were most important for them. This approach was used to make sure respondents had to think about their choices instead of just selecting everything that they thought would be nice during their holiday. These ten statements are general travel motivations found in many other tourism studies (abbreviations in parentheses):

- Participating in nightlife (nightlife)
- Enjoying comfort, spoiling myself (comfort)
- Taking and having time for my partner (partner)
- Taking and having time for my family (family)
- Enjoying landscape and nature (nature)
- Broadening my mind, enjoying sightseeing (culture)

- Being able to make flexible and spontaneous decisions (liberty)
- Doing something for my looks and well-being (body)
- Sports activities (sports)
- Enjoying the sun and water (sun).

To find out how well the respondents could relate themselves to the segments identified in the study by Pesonen (2012) descriptions of the four segments were presented (Table 1). The differences between segments reported by Pesonen (2012) were used to describe the four segments of rural tourists. Respondents were asked to choose the segment which best described them. In contrast to the study by Horneman et al. (2002), a respondent could either belong to the segment or not, making segment membership a binary score, whereas Horneman et al. (2002) used a 4-point Likert-type scale.

TABLE 1. Segment descriptions

Segment name	Description
Social Tourists	During your holiday you want to meet interesting people, be active and maybe even have a feeling of romance. You appreciate a destination that has a rich history and culture and where you can meet new people outside your own family. You also like to have control over your own holiday. You prefer traveling with friends.
Family Tourists	You enjoy traveling with your family. Having fun, being together with your family, new "once in a lifetime" experiences and everything that is new and exciting motivate you to travel. You want the destination to be safe for the family and for your children to enjoy the destination. You also appreciate environmental friendliness in a destination.
Wellbeing Tourists	You want to escape from your busy everyday life to the peace and quiet of the countryside. You want to relax from the routine and hassle of the cities and enjoy privacy and comfort. You appreciate having no timetables , a peaceful atmosphere, good opportunities for outdoor activities and beautiful landscapes.
Home Region Tourists	You are interested in traveling to the region your family comes from.
Something else, what?	If none of the above options describes you as a rural tourist you can describe your own rural tourism behavior here.

Respondents were also able to choose several different segments. The purpose of this was to see how well a description of a single segment could be used to describe a rural tourist or if a combination of several segments would serve better.

DATA COLLECTION

For the purposes of this study a new questionnaire was used to validate the segmentation results of the earlier study. The questionnaire was promoted to the users on the same website that was used by Pesonen (2012) as well as two other rural tourism websites. Pesonen (2012) argues that the four segments can be found among Finnish rural tourists that use the Internet so two additional web sites were included to test this. A large majority of responses, more than 90 per cent, came from the website www.lomarengas.fi which was the website also used by Pesonen (2012). Responses from the three websites were compared regarding travel motivations and only small differences (p<0.05) were found (Table 2). Largest difference in is in the opportunity to be physically active which was considerably more important for users of website 3 compared to users from other websites. Website 3 rents accommodation near a skiing center which explains the difference. Eta squared values that determine the strength of the relationship between the variables (Moscardo et al., 2001) are very low, meaning that the website used to collect the responses does not have large effect on how respondents answered to the questionnaire regarding travel motivations.

TABLE 2. Differences in travel motivations between the three websites

Item	Lomarengas.fi	Website 2	Website 3	Sig. (2-tailed)	Eta squared
I would have a hassle-free vacation	5.63	5.48	5.70	p=0.504	0.001
I would like to escape from a busy everyday life	5.75	5.60	6.16	p=0.062	0.003
There would be an opportunity to be together as a family	5.64	5.60	5.59	p=0.945	0.000
I could visit places my family comes from	3.55	3.12	3.08	p=0.022	0.004
I would have a feeling like I was being pampered	4.81	4.63	4.97	p=0.383	0.001
I would have an opportunity to be physically active	4.64	5.01	5.54	p<0.001	0.011
I would have a "once in a lifetime" experience	4.18	4.31	4.41	p=0.549	0.001
I would like to relax away from the ordinary	6.24	6.39	6.57	p=0.038	0.004
I would have some control over the way things turn out	3.92	3.51	3.86	p=0.026	0.004
I would experience different culture	4.31	4.75	4.65	p=0.009	0.005
I would have a feeling of romance	4.70	4.38	4.95	p=0.091	0.003
I would have a chance to meet interesting people	4.39	4.43	5.05	p=0.088	0.003

A banner advertisement with a prize of a 400-Euro gift voucher was used to attract the users to the questionnaire. Data was collected in summer 2011, from the beginning of March to the end of August. Whereas Pesonen (2012) collected data only during summer season a longer time span was chosen for this study in order to increase the sample size. In order to examine if the month of visiting the websites affects the responses the 12 travel motivations measured with 7-point Likert-scale were compared by dividing respondents into groups based on which month they

had answered to the questionnaire. Only some very small statistical differences were found in variables "I would have a hassle-free vacation" ($F=2.794$, $p=0.016$), "I would like to escape from a busy everyday life" ($F=2.799$, $p=0.016$), "There would be an opportunity to be together as a family" ($F=2.387$, $p=0.036$) and "I would like to relax away from the ordinary" ($F=3.667$, $p=0.003$). Relaxation, being with family and escape from a busy everyday life seem to be more important in March and in July than during other months whereas hassle-free vacation is especially important in July. Based on these results it can be argued that the time when respondent answered to the questionnaire does not have huge effect on the results of this study.

Altogether 1937 responses were obtained, all from Finnish users. Of these 1772 were usable for this study. Most of the excluded responses were a result of duplicate answers from the same respondents, who had not answered regarding the importance of travel motivations or because they had answered all Likert scale questions with the same answer.

METHODOLOGY

Original data from the year 2009 that Pesonen (2012) used was acquired from the author in order to compare the results between these two studies. The data is analyzed in five phases:

1) A sample profile is presented.
2) Importance of travel motivations between 2009 and 2011 are compared.
3) The accuracy of market segmentation results from an earlier study (Pesonen, 2012) are analyzed by asking rural tourists which market segment describes them the best.
4) Five different statistical segmentation methods are used to ascertain which can produce segments that best represent the four rural tourist segments identified by Pesonen (2012) .
5) The accuracy of statistical segmentation methods is scrutinized by comparing the results with the segments that rural tourists think describe them the best.

First, sample profile is presented and differences between 2009 and 2011 studies are compared using chi-square test and one-way analysis of variance (ANOVA). Then travel motivations measured using Likert-type scale were compared between data collected for the present study and data used by Pesonen (2012). Comparative analysis was conducted using independent samples t-test. All responses containing missing values in travel motivations were excluded from this analysis.

For the third part of the study the results from the question on how well people could relate to the segments are considered as the correct segments existing in the data. As cluster analysis does not support overlapping clusters only people relating to just one segment are included in the data analysis. This results in 1509 usable questionnaires. Then these segments are sought from the data using the most used data analysis methods in the market segmentation literature on tourism.

The chosen segmentation methods are based on the study by Dolnicar (2002). In her review of data-driven market segmentation in tourism she found that 45 per cent of studies used factor analysis to preprocess data before clustering and 44 per cent of studies using hierarchical algorithms used Ward's method to derive groupings. In this study principal component analysis with varimax rotation is used to preprocess data for the use of K-means cluster analysis as one possibility for data analysis. Varimax rotation was chosen as it is one of the most common rotations used in segmenting tourism markets (see e.g. Konu et al. 2011). Pesonen (2012) preprocessed the data by standardization before clustering to eliminate the effects of response styles. Last cluster method is to use only K-means without any data preprocessing, an approach proposed by Dolnicar and Grün (2008). Four different methods with a number of cluster solutions ranging from three to five are used on the data measured with a Likert scale. Cluster solutions from three to five are most common in tourism segmentation studies and the earlier study by Pesonen (2012) also identified four clusters. To analyze binary data a hierarchical clustering algorithm was used with squared Euclidean distances and Ward's method. Cluster memberships from three to five clusters were saved. All the results of these analysis can be found from the Internet in the address http://goo.gl/lb99M.

In the last part of the data analysis the accuracy of segmentation methods that most successfully identified the four aforementioned segments from the data was examined. Cross tabulations with chi square analysis were used to compare the accuracy of statistical segmentation methods by cross tabulating statistical segment membership and self evaluated segment membership.

RESULTS

There are some differences between respondents in age and gender. In the study conducted in 2009, 17 per cent of respondents were male. In the present study 26.3 per cent are male. The difference is statistically significant ($\chi 2 = 24.35$, $p < 0.001$). The respondents are also younger in this study with an average age of 39 years compared to 43 years in 2009 study ($F = 40.37$, $p < 0.001$). However, Bieger and Laesser (2002) for example noted that the sociodemographic situation of individual travelers seem to be least relevant for motivation segmentation, meaning that in this regard differences in sociodemographics between the two samples should not decrease the validity of these results too much. Also Johns and Gyimóthy (2002) state that age, gender and income are only indirectly related to what a person will buy.

There are some differences in samples between the 2009 and 2011 studies regarding socio-demographic factors and travel motivations. Altogether 12 travel motivations were measured in this study as well as by Pesonen (2012). There are statistically significant differences in many travel motivations, measured using independent samples t-test (Table 3). All the motivations that differ have higher mean score in the study conducted during summer 2009 except for visiting places where respondent's family comes from. However, in both studies relaxing away from the routine was the most important travel motivation, followed by escape from busy everyday life and taking a hassle-free vacation.

TABLE 3. Sample differences in importance of travel motivations between 2009 and 2011 studies

Item	2009 mean	2011 mean	t (Equal variances assumed)	Sig. (2-tailed)
I would have a hassle-free vacation	6.02	5.62	6.118	p<0.001
I would like to escape from a busy everyday life	6.03	5.75	4.978	p<0.001
There would be an opportunity to be together as a family	5.89	5.64	3.707	p<0.001
I could visit places my family comes from	3.27	3.51	-2.733	p<0.001
I would have a feeling like I was being pampered	4.91	4.80	1.419	p=0.006
I would have an opportunity to be physically active	4.70	4.69	0.248	p=0.156
I would have a "once in a lifetime" experience	4.43	4.20	3.108	p=0.804
I would like to relax away from the ordinary	6.42	6.26	3.919	p<0.001
I would have some control over the way things turn out	4.20	3.89	4.172	p<0.001
I would experience different culture	4.54	4.35	2.564	p=0.010
I would have a feeling of romance	2.64	2.69	-0.681	p=0.496
I would have a chance to meet interesting people	4.40	4.41	-0.089	p=0.929

The results of how well rural tourists can relate to the segments found earlier are presented in Table 4. As can be seen, most of the respondents could relate to one of the segments presented to them, while 10.3 per cent would position themselves to two different segments, 1.2 per cent to three and nine respondents (0.5 %) think that all the segment descriptions fit them. Respondents reporting that none of the segments could describe them amounted to 2.9 per cent.

Family Tourists was the largest segment with 37.1 per cent of respondents, closely followed by Wellbeing Tourists (34.1 %). Approximately ten per cent of respondents think that Social Tourists describes them best. Only four per cent found description of Home Region Tourists to fit them best.

TABLE 4. Rural tourists relating themselves to segments

Segment name	Rural tourists relating themselves to segments
Social Tourists	177 (10.0 %)
Family Tourists	657 (37.1 %)
Wellbeing Tourists	605 (34.1 %)
Home Region tourists	70 (4.0 %)
People belonging to two segments	182 (10.3 %)
People belonging to three segments	21 (1.2 %)
People belonging to four segments	9 (0.5 %)
Something else	51 (2.9%)

Table 5 presents the results of the cluster analysis. All the details of data analysis can be found from the Internet in the address http://goo.gl/lb99M. First a principal component analysis (PCA) with varimax rotation was used on the twelve travel motivation statements. This resulted in three principal components explaining 51.7 per cent of variance. Cronbach alphas for the principal components were 0.745, 0.685 and 0.362. It should be noted that 0.362 is very low value for alpha but can be explained by the fact that only two items were included in the third principal component. Adding more items would have increased the reliability of PCA and variance explained but on the other hand increased the effort of the respondents. According to Dolnicar and Grün (2008), PCA with cluster analysis is an outdated method that does not provide enough benefits to justify its use. However, it is still widely used and was included also in this study to demonstrate its effects in identifying segments.

The regressions score from the principal component analysis was used in K-means cluster analysis and the segments were compared using the original Likert scale scores. K-means segmentation based on regression score from PCA managed to produce quite distinctive segments and as the number of clusters increased so did the distinctiveness of segments. In three cluster solution Family Tourists and Wellbeing Tourists segments were identified The wellbeing tourists segment valued a hassle-free vacation, escape from everyday life and relaxation more than respondents in other segments. The other main segment was one containing respondents who valued all but the aforementioned three travel motivations more than respondents in other segments, making it a combination of home region travelers, wellbeing tourists and family tourists. In four and five cluster solutions Wellbeing Segment was easy to find. Those who regarded the feeling of romance as more important that other segments were regarded to be Social Tourist in all the cluster solutions in all data analysis methods.

Segments found using only K-means cluster analysis were very similar to those found using hierarchical cluster analysis with Ward's method and squared

Euclidean distances. The wellbeing segment was again distinguishable in every solution as was the segment that valued feeling of romance more than other segments. However, in this case the wellbeing segment valued not only motivations related to relaxation but also all other motivations except for feeling of romance more than other segments.

Examining travel motivations measured with binary data provides better results. In all the solutions the three segments identified in the earlier study can be found. The reason why home region travelers are not to be found is because questions relating to that travel motivation were not measured in the study by Bieger and Laesser (2002). In the four-cluster solution family travelers divides into two segments, both very much motivated by being together with family and in the five-cluster solution the wellbeing segment is also divided into two. Otherwise the cluster membership is very stable, as can be seen from segment sizes.

TABLE 5. Rural tourists relating to segments with different segmentation methods (N=1509)

	Can the segment be found?			
	Social Tourists (N=177)	Family Tourists (N=657)	Wellbeing Tourists (N=605)	Home Region Tourists (N=70)
Principal component analysis and K-means cluster				
3	No	Yes (703)	Yes (670)	No
4	Yes (419)	Yes (565)	Yes (475)	No
5	Yes (210)	Yes (530)	Yes (443)	No
K-means cluster				
3	Yes (554)	No	Yes (555)	No
4	Yes (503)	No	Yes (489)	No
5	Yes (323)	No	Yes (360)	No
Hierarchical cluster with Ward's method				
3	Yes (513)	No	Yes (415)	No
4	Yes (513)	No	Yes (415)	No
5	Yes (513)	No	Yes (415)	No
RSE preprocessing and K-means cluster				
3	Yes (646)	No	Yes (532)	No
4	Yes (524)	No	Yes (398)	Yes (446)
5	Yes (253)	Yes (389)	Yes (361)	No
Binary data with hierarchical cluster analysis				
3	Yes (379)	Yes (524)	Yes (606)	No
4	Yes (379)	Yes (266+258)	Yes (606)	No
5	Yes (379)	Yes (266+258)	Yes (392+214)	No

In this study also the accuracy of the segmentation solution compared to the self-selective segment membership was examined. Because K-means cluster analysis and hierarchical cluster analysis with Ward's method did not produce very distinctive segments their accuracy is not compared.

The results of the accuracy analysis are presented in Table 6. As can be seen from the table, principal component analysis and K-means cluster analysis based on the regression scores of PCA correctly classifies from 27.8 per cent to 35.5 per cent of respondents.

In the three cluster solution with K-means cluster analysis of RSE-standardized data 66.1 per cent of those regarding themselves as Social Tourists belonged to the Social Tourists segment found. In the three-cluster solution a total of 20.7 per cent, in four-cluster solution 17.4 per cent and in five-cluster solution 23.5 per cent of respondents were correctly classified, meaning that K-means cluster analysis based on regression scores from PCA outperformed cluster analysis based on RSE standardized data.

However, the cluster analyses based on Likert scale data are clearly inferior to those identified using binary data. The results are quite impressive, with more than half of respondents correctly classified into data driven segments. The results between three, four and five cluster solutions are the same as increasing the number of clusters only divided family and wellbeing tourists into smaller segments, still mainly motivated by being together with family or motivations traditionally connected with wellbeing.

TABLE 6. Examination of segmentation accuracy

	Percentage of correctly classified segment members				
	Social Tourists (N=177)	**Family Tourists (N=657)**	**Wellbeing Tourists (N=605)**	**Home Region Tourists (N=70)**	**Total (N=1509)**
Principal component analysis and K-means cluster					
3	0 %	259 (39.4 %)	276 (45.6 %)	0 %	535 (35.5%)
4	67 (37.9%)	220 (33.5%)	172 (28.4%)	0 %	459 (30.4%)
5	49 (27.7%)	211 (32.1%)	159 (26.3%)	0 %	419 (27.8%)
RSE preprocessing and K-means cluster					
3	117 (66.1%)	0 %	188 (31.1%)	0 %	305 (20.2 %)
4	110 (62.1%)	0 %	153 (25.3%)	0 %	263 (17.4%)
5	58 (32.8%)	160 (24.4%)	137 (22.6%)	0 %	355 (23.5%)
Binary data with hierarchical cluster analysis					
3	69 (39.0 %)	400 (60.9 %)	368 (60.8 %)	0 %	837 (55.5 %)
4	69 (39.0 %)	194 + 206 (60.9 %)	368 (60.8 %)	0 %	837 (55.5 %)
5	69 (39.0 %)	194 + 206 (60.9 %)	253 + 155 (60.8 %)	0 %	837 (55.5 %)

DISCUSSION AND CONCLUSION

The aim of this study was to examine the quality of segmentation results from an earlier study (Pesonen, 2012). This was done by analyzing how accurately rural tourists could place themselves into the segments identified by Pesonen (2012) and also by using data driven segmentation to find the market segments again. The rural tourists in this study could relate to the segments identified by Pesonen (2012). In light of the results it can be argued that the rural tourist segments proposed by Pesonen (2012) depict Finnish rural tourists fairly accurately. Most of the website users could relate to one particular segment. The largest segment is Family Tourists (37.1 %) closely followed by Wellbeing Tourists (34.1%). Home Region Tourists was a very small segment; only four per cent of respondents reported travel to the place of their family's origin as their sole motivation.

Only 2.9 per cent of respondents could not find themselves in any of the segments or in combinations of these. Some respondents (12.0%) chose at least two different segments to describe them best. Even though there is some overlap between segments, most of the respondents could categorize themselves as members of a single segment, making it easy to use the results. Saunders (1994) regard overlapping

clusters as an unnecessary complication and suggest that researchers should aim to find easily interpretable clusters. Market segments have to be designed so that a single person cannot be a member of several segments at any given time. It is possible for a person to change from one segment to another but that also means that he or she has to behave the same way as the other members in the same segment. This has always been a strength of common sense segmentation, as a person cannot belong to more than one segment at a time. This topic has not often been discussed in relation to data driven segmentation studies. This study suggests that segment overlap is not a major problem with the use of cluster analysis and the respondents were generally able to place themselves in only one travel motivation segment.

When comparing these results to those of Pesonen (2012) it can be seen that there is a great difference in segment sizes between these two studies. Whereas Pesonen (2012) found that the four segments had almost equal numbers of rural tourists, the results of the present study show that Family Tourists and Wellbeing Tourists are actually much larger segments than Home Region Tourists or Social Tourists when considering how well rural tourists relate to the segments. This study also attributes these differences between two different studies to the way the data was analyzed. The K-means cluster analysis used in this study produced only segments that are relatively equal in size. However, this is not always the case in real life.

When segmenting the data using binary measured motivations the results are much closer to the results of how people relate to segments. Even though motivation to travel to the region the respondent's family comes from was not measured with binary travel motivations, all the other segments were quite easily distinguishable. The segment sizes are also much more closer to the way people relate to different segments.

An interesting details that can be found from the results is that using regression scores from principal component analysis as a basis for cluster analysis seem to produce more distinctive segments than using only raw scores. Even though Dolnicar and Grün (2008) argue that "factor-cluster segmentation" is inferior to segmentation based on raw scores in identifying segments, it can still provide additional benefits such as more distinctive segments.

Segmentation based on binary travel motivations could also classify respondents much better to the segments regarded as correct, that is, the segments that people could relate to. More than half of the respondents belonged to the correct segment when the binary data was analyzed with hierarchical cluster analysis, whereas the data analysis based on 7-point Likert scale data could classify little more than 20 per cent of cases correctly at best.

In earlier studies a Want-it-all segment has been a very common rural tourist segment (Kastenholz et al. 1999; Park & Yoon, 2009). However, this segment is typical with cluster analysis. In this study too a Want-it-all segment was found when using K-means cluster analysis either on data based on principal component analysis or on unstandardized Likert scale scores. A Want-it-all segment was also found with hierarchical cluster analysis of unstandardized data. However, from a managerial view perspective a Want-it-all segment is very difficult to operate

with. Warnings about this have also appeared in the literature (Hair et al. 2010).

This study supports the notion of using binary data to collect information for market segmentation purposes. This way some of the common problems , such as response style effects with Likert scale scores and segments of equal sizes with the use of K-means cluster analysis, can be avoided or alleviated.

Stability of segments over time is also very important for managerial purposes. The results are hardly useful for managers if they can be used only at the time of data collection and not in the future. The data for this study was collected on rural tourism websites and only from online respondents. In order, for example, to differentiate the offering on a website it is important for managers to have a stable solution and ways to examine change in segments over time. According to Hoek et al. (1996), including variables that predict consumer behavior to the segmentation base is very important in order to find segments that are fairly constant in nature. The segment descriptions of Pesonen (2012) and the present study are also based on travel companions. Social Tourists travel with friends, Family Tourists with family and Wellbeing Tourists with their partners. These segments can thus be regarded as quite stable over time.

The results also show that data-driven solutions from statistical segmentation methods, in this case K-means cluster analysis, should be interpreted with caution. Even though a solution may seem logical and correct, it does not necessarily represent the real world. Relative segment size is an important factor in deciding which segments to target and the results of this study suggest that segmentation using K-means cluster analysis is only a starting point for market segmentation and that segments need to be carefully evaluated.

LIMITATIONS AND FUTURE RESEARCH

There are some limitations to this study. Even though the sample of this study is similar to the sample used by Pesonen (2012), they are not identical. Even though both sets of data were collected from the same rural tourism website only two years apart there are many differences in the travel motivations, age, and gender of the respondents. It is unknown whether these differences are a result of changes in the sample or changes in the population between studies. However, the typical respondent can be described the same in both studies: a middle aged female who is mostly motivated to travel for relaxation, escape and a hassle-free vacation.

Want-it-all segments and Passive Tourist segments should be explored further. As in many earlier studies, these two segments were also found in this study with certain partitioning methods. In this study it was assumed that the four segments identified by Pesonen (2012) were the correct segments to be analyzed but it is unknown how the results might differ if people were asked to relate to segments that include Want-it-all Tourists and Passive Tourists.

The validation of the segments found using the categorical data is beyond the scope of this paper, but is a crucial next step in examining the usefulness of the segments presented in this study. The wording of the question on how well customers can relate to segments should be explored further. The topic of applying

segmentation results to practice is very important (Dibb & Simkin 2010) and in tourism this field also requires further research.

The strength of quantitative studies lies in the generalizability of their results. However, despite extensive research on rural tourism segmentation the results are always destination or country specific. An alternative approach could be to use a combination of qualitative and quantitative segmentation. For example, Mackellar (2009) used qualitative methodology to segment festival participants on the basis of their behavior. A quantitative approach could be used to generalize the segmentation results of a qualitative study using, for example, the methodology presented in this study, but this requires further research.

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Targeting Rural Tourists in the Internet: Comparing Travel Motivation and Activity Based Segments

Juho Pesonen

ABSTRACT

This study aims to compare activity based segmentation and travel motivation segmentation from the perspective of information search behaviour and online use behaviour by comparing segment heterogeneity. The data were collected from users of three Finnish rural tourism websites with 1754 completed and usable questionnaires to create segmentation solutions based on travel activities and motivations using hierarchical cluster analysis and then comparing the results. The results indicate that travel activities are more useful than travel motivations in finding heterogeneous segmentation solutions, making the travel activity segments more heterogeneous than travel motivation segments as regards their information search behaviour and Internet use. The results suggest that in this era of Internet marketing travel activities are a better segmentation base than travel motivations in order to target different market segments as activities form more heterogeneous segmentation solution.

Keywords: segmentation, travel motivations, travel activities, ICT, Internet, rural tourism

INTRODUCTION

Every day tourism businesses face the question of where they can find customers. The question however is not only where the customers are but also how to reach them. Answers for these questions can very seldom be found from the tourism research literature. A stream of market segmentation research has been

conducted in the past but it's applicability in finding and reaching customers is limited at best. When looking at the majority of earlier market segmentation literature it can be seen that it has focused on finding the segmentation solutions instead of discussing how to reach different customer segments (Pesonen, 2013). Typically travel segments are compared by what different information channels they use when they are planning their holidays without going into details about their behaviour in different information channels, for example in the Internet. The Internet has typically been just one information channel among many. In reality that is not the case: since the year 2000 information and communication technologies (ICT) have transformed the tourism industry (Buhalis & Law, 2008) and especially how tourists search for information. Understanding the composition of information that is available for travellers online enables the development of successful marketing programs (Xiang & Gretzel, 2010).

Market segmentation has been a popular topic in marketing for several decades. Market segmentation, targeting, positioning, and micro-marketing are based on the consumer heterogeneity (Rondan-Cataluña & Rosa-Diaz, 2012). Different people have different needs to be satisfied by different solutions. The categorization of consumers into homogenous market segments became a topic of interest for marketing researchers in the middle of the 20th century in the context of business making. Dolnicar (2002, pp. 2) articulates the obvious potential behind the idea of segmentation: "Targeting a market segment characterized by expectations or preferences that mirror the destination strengths leads to competitive advantage. Once the segment that is optimally suited is identified and chosen as target, marketing action is adapted to attract the members of this segment and the product is customized to best possibly satisfy the needs of this particular group of individuals." Hence segmentation of markets alone is not enough; the results of segmentation must be used to target the right customer segments with the most efficient marketing message. This targeting process has only rarely been studied in tourism related segmentation studies, where it has been more usual to characterize different segments according to the information channels used when planning a holiday. Nevertheless, this information search behaviour has not been thoroughly scrutinized in earlier market segmentation studies in tourism.

Segmentation in the ICT context has seldom been studied and discussed in the tourism research literature. Some studies have been presented comparing different tourist segments with respect to information search behaviour (Beritelli et al. 2007) or destination website functionality (Kim et al. 2007). Beritelli et al. (2007) state that research on information sources composition with reference to the degree of WWW inclusion is limited. However, as more and more consumers are using the Internet as an important source in their information search process, it becomes crucial to the success of a segmentation plan to be able to distinguish segments in their Internet use behaviour to better promote and market products on the Internet.

The context in this study is rural tourism. Typically rural tourism companies in Finland and all over the world are micro or SME businesses characterized by part-time tourism entrepreneurship, limited financial resources, limited entrepreneurial skills and a low level of commitment to long-term development of the busi-

nesses (Komppula, 2000). Limited financial resources make promoting and advertising the services offered very challenging. As the Internet offers an efficient and cheap way to reach customers its importance to rural tourism companies cannot be underestimated. Thus Internet marketing should be the ideal solution for rural tourism companies. Despite this the topic of marketing rural tourism products and services over the Internet has received very little attention in the literature so far.

It can be difficult for rural tourism companies to design their marketing message to best suit different channels. Should they focus on what motivates customers to travel and choose their holiday destination or on what tourists want to do during their rural holiday? What are the differences between different customer groups in different marketing channels?

This study aims to explore how market segments identified with two different segmentation bases, activity based and travel motivation based segmentation, differ from each other as well as study the connection between travel motivations and travel activities to Internet use behaviour. This study contributes to the market segmentation literature by comparing two different approaches, activity segmentation and motivation segmentation from the Internet marketing perspective, and provides managerial insights for rural tourism companies regarding marketing their products to different customer groups in the Internet.

LITERATURE REVIEW

There are two fundamental ways to segment individuals: a priori segmentation, where the grouping criteria are known in advance, and data-driven segmentation, a posteriori, or post hoc segmentation, where quantitative techniques of data analysis are used to derive a grouping (Dolnicar, 2002). A combination of the two can also be used. Data-driven segmentation has recently achieved popularity because a priori segmentation approaches no longer have much potential for competitive advantage (Dolnicar 2002). The problem with data-driven segmentation has been that it always produces a solution or range of solutions depending on the data analysis method. According to Moscardo et al. (2001), obtaining segmentation solutions in tourism research is relatively routine, but the question of solution adequacy is far from simple. One way to assess the value of a segmentation solution could be to use three evaluation criteria presented by Wilkie (1994): 1) members of the segment must be similar to other members of that segment as well as different from members of other segments, 2) members of the segment should also respond in a similar manner to a specific marketing mix, and 3) the organization in question should also be able to develop an efficient marketing mix for each segment (Wilkie 1994).

According to Mazanec (1992) any variable or bundle of variables that exhibit predictive power with respect to travel behaviour may be employed when conducting market segmentation. Several arguments have been presented about the superiority of certain segmentation bases and techniques over others (Frochot & Morrison, 2000). Some of the most popular data-driven approaches in tourism research are travel motivation segmentation (e.g. Boksberger & Laesser, 2009), benefit segmentation (e.g. Frochot, 2005) and activity based segmentation (e.g. Moscardo

et al. 2001). In rural tourism especially travel motivation based segmentation has been very popular. Previously rural tourists have been segmented among others by travel motivations (Park & Yoon, 2009) or by the benefits they seek (Kastenholz et al. 1999; Frochot, 2005; Molera & Albaladejo, 2007). A combination of the two has also been used (Pesonen, 2012). Oh and Schuett (2010) explored a visitor segmentation approach based on rural visitor spending behaviour.

In data-driven segmentation studies segments have been validated by comparing variables not included among the segmentation variables. These have been traditionally socio-demographic factors (e.g. Park & Yoon, 2009), travel behaviour (e.g. Moscardo et al. 2001) or information sources (e.g. Molera & Albaladejo, 2007). Wind (1978) describes different situations where certain variables can be used to validate segmentation solutions and states that most of the variables used in consumer behaviour literature can be considered as segment descriptors. Information sources in particular can be regarded as essential in order for managers to know the channels they can use to maximize the effectiveness of their marketing, which must be adapted to different segments using different channels and information.

There are some studies that have compared different segmentation bases and a number of studies comparing segmentation methods (e.g. Dolnicar & Grün, 2008; Dolnicar et al., 2011; Hruschka & Natter, 1999; Jiang & Tuzhilin, 2009). In this study the focus is on segmentation bases: why should customers be categorized in one way instead of another? In the earlier literature on the topic Moscardo et al. (2001) compared two segmentation approaches, the a priori geographic approach and the a posteriori activity approach, to visitors to the Wet Tropics region of Australia. They stated that despite the extensive and expanding literature on market segmentation several issues remain unresolved, one of them being that while obtaining clusters or segments of customers is common practice, the question of solution adequacy is far from simple. Moscardo et al. (2001) judged the superiority of activity segmentation over geographic segmentation based on eight criteria for successful segmentation (Morrison, 2002):

1. People within a segment should be similar to each other and segments should be as different from each other as possible (homogeneity).
2. Segments should be identified with a reasonable degree of accuracy (measurable).
3. Segments should be large enough in size to warrant separate attention (substantial).
4. An organization needs to be able to easily reach or access the identified segments (accessible).
5. Segments must require different marketing approaches. This suggests that the segments must differ on those characteristics which will be most relevant to the organization's services or products (defensible).
6. Segments must be suited to the products or services offered by the organization (competitive).
7. The segments identified need to be compatible with existing markets (compatible).

8. There must be some stability in the segments. The segments identified need to remain relevant over an extended period of time (durable).

Also Lin (2002) compared psychographic segmentation and demographic segmentation regarding consumer brand preference. Lin (2002) argues that demographic segmentation can only provide marketers with customers' demographic data such as age, gender and income whereas psychographic segments can clearly describe lifestyle and personality of consumers, explore consumption models, and identify relevant brand characteristics. However, Lin (2002) concludes that adopting both psychographic and demographic segmentations provides complete marketing segmentation information useful for deciding product positioning and increasing target market share.

There are also other studies comparing segmentation solutions and bases. Novak and MacEvoy (1990) compared Values and Life Styles (VALS) against the List of Values (LOV), based on the study by Kahle, Beatty, and Homer (1986). Novak and MacEvoy (1990) concluded that LOV alone is significantly less predictive than VALS alone but including demographic variables in the LOV model makes it a better predictor of segment membership than VALS.

Storbacka (1997) compared different market segmentation options based on existing customer base of two retail banks in the Nordic countries. Storbacka (1997) compared volume-based segmentation, profitability based segmentation, and segmentation based on relationship volume and customer relationship profitability. Criteria that Storbacka (1997) used to asses customer base segmentation solutions were that the solution should be permanent enough to make development, implementation and evaluation of a new market strategy possible and should also be unambiguous so that customers can be placed only in one segment at a time. Also, belonging to a group should be pertinent to a specific buying behaviour and the implementation stage has to provide employees with a simple orientation to the foundation of the new strategies.

As can be seen from the literature review there are several reasons why one segmentation base should be used over another: it predicts segment membership better (Novak & MacEvoy, 1990), it satisfies the requirements for successful segmentation better (Moscardo et al., 2001) or provides companies better understanding of their customers (Storbacka, 1997).

In this study the focus is on the criterion presented by Wilkins (1994) that segments should differ from each other and different marketing mix should be able to be designed for each segment. As the other criteria presented above are mostly assessed within the context of the organization in question and its aims and resources, they are not examined in this study. The focus on the superiority of one segmentation base against another has mainly been between data-driven and common sense segmentation methods (Moscardo et al. 2001). There is a large gap in the literature regarding the superiority of different data-driven methods in segmenting tourists. It is unknown, for example, how segments found using a psychological approach differ from segments found using a behavioural approach regarding the segmentation evaluation criteria. In the context of destination recommendation

systems Gretzel et al. (2004) examined the activities travel personality segments are interested in and suggest that activities can serve as an efficient route for recommending potential places to visit for tourism regions with similar destinations.

Moscardo et al. (1996) studied the relationship between travel motivations, activities and features of preferred destinations and found consistent relationships between different concepts. According to Moscardo et al. (1996) there is a clear link between the vacation benefits travellers seek and the activities that they pursue. This link is an especially interesting topic in this study because here travel activities as well as travel motivations from the same respondents are examined and used as a basis for segmentation.

The Internet has become the most important source of information for many tourists (Buhalis & Law, 2008). Travellers now use the Internet to seek information regarding their holidays, plan what they are going to do, book flights, accommodation and car rental online and share their experiences in social media. In the majority of earlier travel motivation segmentation studies the Internet was only one information source among others if differences between information sources were measured at all. However, the Internet can be used in many other ways by tourists besides as an information source. According to the results of Jani et al. (2011) the Internet is more widely used as a source of travel information but less for travel purchases and travel information sources do indeed vary with personalities. In this study motivation segments are compared according to the online purchase of travel products, Internet channels used and how they spread electronic word-of-mouth (eWOM) by writing reviews of the products and services they buy online.

It is important to know who post reviews of their trips and accommodation on the Internet as they have many opportunities to affect other travellers' choices (Bonner & de Hoog, 2011). The Internet has facilitated linking tourism suppliers and potential tourists, making it possible for tourists to buy several different tourism products online without the help of travel agencies (Buhalis & Law, 2008). Knowing who buys products online enables managers to design what kind of customers they should serve via their online stores.

Based on the gaps found in the literature review this study seeks to make a distinction between activity based and travel motivation based segments by comparing differences in information search behaviour and Internet use. The study contributes to segmentation theory by being the first study to compare activity segmentation and motivation segmentation from Internet usage point of view. The results are also useful for managers of rural tourism companies in planning their online presence.

DATA AND METHODOLOGY

The data set was collected in Finland in 2011 during spring and summer using a convenience sample method. Banner advertisements leading to the online survey were placed on three large Finnish rural tourism websites. Users were required to click on the banners to access the questionnaire meaning that this is a self-selective survey. The first banner was placed on a website on March 4 and the last advertisement was removed from a website on August 31. Lots were drawn for

a cottage rental gift certificate worth 400 Euros among all who left their contact information after completing the questionnaire.

Banner advertisements were clicked altogether 3,684 times, resulting in 2131 completed questionnaires. Altogether 164 questionnaires had to be discarded because of missing responses or the same respondents answering the questionnaire more than once, resulting in 1,967 usable questionnaires. As cluster analysis was chosen as the segmentation method all questionnaires with missing responses to one or more motivation statements were removed from the analysis. A further 49 responses were excluded because there were no differences between different motivation statements, meaning that they had used the same answer in all the questions. Eighteen responses were deleted because of missing answers to either activity questions or travel motivation questions. This left altogether 1,754 questionnaires for analysis.

The questionnaire used in this study was only in Finnish. A rough translation of the questionnaire can be seen in the Internet at address https://elomake.uef.fi/lomakkeet/2410/lomake.html.

To measure travel motivations a list of ten items from a study by Bieger and Laesser (2002) was used. It consists of only ten general travel motivations, making it easier for respondents to report the main motivations. To avoid response style effects caused by Likert scales (Dolnicar & Grün, 2007) respondents were asked to select at least one but up to three most important travel motivations for them. Mazanec (1984) state that simplified measurement approach increases the reliability of information collected. One way to simplify measurements is to offer respondents only two response choices compared to a voluminous battery (Mazanec, 1984). To simplify measurement even further the respondents were asked to choose the travel motivations that are most important for them. The ten travel motivation statements used in this study are general travel motivations found in many other tourism studies (abbreviations in parentheses):

- Participating in nightlife (nightlife)
- Enjoying comfort, spoiling myself (comfort)
- Taking and having time for my partner (partner)
- Taking and having time for my family (family)
- Enjoying landscape and nature (nature)
- Broadening my mind, enjoying sightseeing (culture)
- Being able to make flexible and spontaneous decisions (liberty)
- Doing something for my looks and well-being (body)
- Sports activities (sports)
- Enjoying the sun and water (sun)

The travel activities included in this paper are the rural tourism activities that are most important for the Finnish rural tourism companies. They are based on the current supply of rural tourism products in Finland as well as the development work done by the Finnish Tourist Board (http://www.mek.fi/w5/mekfi/index.nsf/(Pages)/OutDoors?opendocument&np=A, accessed 1.30.2013). The list of travel activities was also reviewed by both managers of rural tourism companies as well

as academics. Respondents were asked to choose the activities that they would be interested in during their rural holiday.

Data analysis was in three stages. Hierarchical cluster analysis with Ward's method and squared Euclidean distances was used which is a common approach in market segmentation in tourism (see e.g. Dolnicar, 2002). To increase the reliability of the results by the data was divided randomly into two samples and clustering procedures were applied to both random samples. The dendograms suggested that respondents should be divided into four clusters based on activities and three clusters based on travel motivations. In travel activities a five-cluster solution was chosen because it identified a very precise winter activity segment compared to three- and four-cluster solutions. Among motivation segmentation solutions a four-cluster solution was chosen as the most easily interpreted and most meaningful.

Clusters were validated by comparing their Internet use behaviour with items adopted from the study by Jani et al. (2011). These items have previously been used to describe travel personality segments but they are usable also when comparing travel activity and travel motivation segments. Respondents were asked what travel products they had purchased from the Internet during the last 12 months, what kind of Internet channels they used when planning and booking a holiday and how often they wrote reviews of the products and services online. The last of the aforementioned variables was re-coded into two groups according to whether the respondents had written reviews during the last 12 months or not. For Internet channels used and Internet purchase multiple responses were allowed.

This study followed the approach presented by Moscardo et al. (2001) to compare segments. For the analysis of variance both F-values and etas are reported and for cross-tabulations both chi-square and Goodman and Kruskal's tau statistics are reported. According to Moscardo et al. (2001), eta and Goodman and Kruskal's tau can be used to determine the strength of the relationship between the two segmentation approaches and the dependant variable under consideration.

RESULTS

The sample profile contained more female respondents (74.8%) than men. All age groups were very well represented with 40 to 49-year-olds being the largest age group (26.0%) and those under 20 years the smallest age group (4.7%). Of the respondents 34.7 percent had vocational education, 20.5 per cent had polytechnic education and 14.8 per cent a university degree.

The segmentation results for travel motivations are presented in Table 1. All the members of Cluster A attached great value to being together with family, and nature was also important for almost all of them (87.7 %). Many members of cluster B (N=360) regarded nature as important. Culture and comfort were also moderately important but other motivations were of minor significance. Cluster C is the largest segment with 637 respondents. For all of them travelling with partner was important. Other important motivations were nature and culture in addition to comfort. Respondents in Cluster D found comfort, family, culture, liberty, and sun important motivations during their holidays but there was no one single motivation connect-

ing all the respondents in this segment. Based on this information Cluster A was labelled as "Family and nature tourists", Cluster B as "Nature and sports tourists", Cluster C as "Couple tourists" and Cluster D as "Relaxation tourists".

Table 1. Motivation segmentation results

Item	Family and nature (N=374, 21.3%)	Nature and sports (N=360, 20.5%)	Partner (N=637, 36.3%)	Relaxation (N=383, 21.8 %)
Nightlife		56 (15.6%)	23 (3.6 %)	36 (9.4%)
Comfort	64 (17.1%)	130 (36.1%)	193 (30.3%)	173 (45.2%)
Partner		10 (2.8%)	637 (100 %)	12 (3.1%)
Family	374 (100 %)	32 (8.9%)	90 (14.1%)	180 (47.0 %)
Nature	328 (87.7%)	314 (87.2%)	366 (57.5%)	56 (14.6%)
Culture	118 (31.6%)	157 (43.6%)	200 (31.4%)	179 (46.7%)
Liberty	42 (11.2 %)	77 (21.4%)	112 (17.6%)	140 (36.6%)
Body	11 (2.9%)	18 (5.0%)	7 (1.1%)	18 (4.7%)
Sports	1 (0.3%)	66 (18.3%)	32 (5.0%)	28 (7.3%)
Sun	73 (19.5%)	68 (18.9 %)	136 (21.4%)	209 (54.6%)

Table 2 describes the results of activity based segmentation. Almost all members of Cluster A regard swimming as an important activity during their rural holiday. Other important activities are water related as well, such as rowing and fishing. Walking and hiking are something that almost half of the members of the Cluster A would like to do during their rural holiday. Members of Cluster B are quite passive. Walking / hiking is the only motivation that more than half of the segment members would be interested in. There are a lot (40%) of those who would like to watch animals during their rural holiday. For almost every member of Cluster C swimming and walking / hiking are preferred things to do. Nearly half of the segment members would also like to cycle. Cluster D is clearly a winter tourism segment with almost all wanting downhill skiing during their rural holiday. Cross-country skiing is also a preferred activity for them. Other important activities are swimming and walking / hiking. Walking / hiking and swimming are also very important for the last cluster. However, in Cluster E there are also a lot of those interested in canoeing, rowing, fishing, berry and mushrooming, watching animals and cycling, making the members of this segment very active during their rural holiday. Given the information above, the five activity segments were labelled as "Water activities", "Passives", "Nature activities", "Winter activities", and "Actives".

Table 2. Activity segmentation results

Item	Water activities (N=396, 22.6%)	Passives (N=270, 15.4%)	Nature activities (N=507, 28.9%)	Winter activities (N=133, 7.6 %)	Actives (N=448, 25.5 %)
Downhill skiing	28 (7.1%)	5 (1.9%)	32 (6.3%)	128 (96.2 %)	77 (17.2 %)
Cross-country skiing	17 (4.3 %)	10 (3.7%)	145 (28.6%)	57 (42.9 %)	189 (42.2 %)
Tour skating	8 (2.0%)	9 (3.3%)	22 (4.3%)	19 (14.3%)	88 (19.6%)
Snowmobiling	11 (2.8%)	9 (3.3%)	78 (15.4%)	52 (39.1%)	88 (19.6%)
Swimming	373 (94.2%)	25 (9.3%)	431 (85.0%)	101 (75.9%)	404 (90.2%)
Canoeing	50 (12.6%)	7 (2.6%)	94 (18.5%)	53 (39.8%)	276 (61.6%)
Rowing	300 (75.8%)	76 (28.1%)	148 (29.2%)	40 (30.1%)	390 (87.1%)
Fishing	241 (60.9%)	99 (36.7%)	122 (24.1%)	37 (27.8%)	346 (77.2%)
Berry picking or mushroom gathering	76 (19.2%)	89 (33.0%)	148 (29.2%)	8 (6.0%)	300 (67.0%)
Walking / hiking	177 (44.7%)	167 (61.9%)	458 (90.3%)	81 (60.9%)	418 (93.3%)
Golf	1 (4.5%)	8 (3.0%)	6 (1.2%)	10 (7.5%)	37 (8.3%)
Watching animals	110 (27.8%)	108 (40.0%)	213 (42.0%)	27 (20.3%)	224 (50.0%)
Cycling	49 (12.4%)	54 (20.0%)	225 (44.4%)	43 (32.3%)	311 (69.4%)

Table 3 is a cross-tabulation of activity segments by motivation segments, a segment comparison approach suggested used by Moscardo et al. (2001).. A chi-square test indicates that there is a significant relationship between the two variables (chi-square 39.742, df 12, p<0.001, tau=0.006). This means that travel activities are related to travel motivations. Members of "Family and nature tourists" are most likely to be members of "Water activities" and least likely to be members of "Winter activities". Almost a third of members of "Nature and sport tourists" are members of either "Nature activities" or "Actives" clusters. There are also a lot of members of "Nature activities" and "Actives" in "Couple tourists". In "Relaxation tourists" many respondents are members of "Water activities" or "Nature activities".

Table 3. The Relationship Between Activity Segmentation and Motivation Segmentation Cluster Membership

Item		Water activities (N=396, 22.6%)	Passives (N=270, 15.4%)	Nature activities (N=507, 28.9%)	Winter activities (N=133, 7.6 %)	Actives (N=448, 25.5 %)	Total
Family and nature tourists (N=374, 21.3%)	N	109	41	93	28	103	374
		29.1%	11.0%	24.9%	7.5%	27.5%	100.0%
		(27.5%)	(15.2%)	(18.3%)	(21.1%)	(23.0%)	21.3%
Nature and sports tourists (N=360, 20.5%)	N	55	61	111	27	106	360
		15.3%	16.9%	30.8%	7.5%	29.4%	100.0%
		(13.9%)	(22.6%)	(21.9%)	(20.3%)	(23.7%)	20.5%
Couple tourists (N=637, 36.3%)	N	130	113	191	42	161	637
		20.4%	17.7%	30.0%	6.6%	25.3%	100.0%
		(32.8%)	(41.9%)	(37.7%)	(31.6%)	(35.9%)	36.3%
Relaxation tourists (N=383, 21.8 %)	N	102	55	112	36	78	383
		26.6%	14.4%	29.2%	9.4%	20.4%	100.0%
		(25.8%)	(20.4%)	(22.1%)	(27.1%)	(17.4%)	21.8%
Total	N	396	270	507	133	448	1754
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Figures in brackets are column percentages, other figures are row percentages.

The two types of clusters are here also described in terms of some basic demographic and trip-related variables. The results of these comparisons can be found in Tables 4 and 5. The most important notion in these tables is the strength of F- and chi-square test scores as well as Tau and Eta. When the segmentation solutions are compared there are more statistical differences between activity segments than there are among travel motivation segments, as differences between motivation segments regarding age and previous rural tourism trips are non-significant. The differences between travel segments are greater in activity segmentation regarding age, gender, and previous rural trips. In travel party the differences are much stronger in travel motivation segmentation, which can be explained by the fact that travelling with a partner and travelling with family

were among the travel motivations used to find the segmentation solution. Travel motivation segments also differ from each other more than activity segments in their plans to go on a rural holiday during the next 12 months.

Table 4. Profile of Activity Segments on Age, Gender, Type of Travel Party and Previous rural holidays

	Water activities (N=396, 22.6%)	Passives (N=270, 15.4%)	Nature activities (N=507, 28.9%)	Winter activities (N=133, 7.6 %)	Actives (N=448, 25.5 %)	χ 2 / F	Goodman Kruskal's Tau (χ 2 test) / Eta (F-test)
Mean age in years (Std.Dev.)	38.97 (12.23)	43.94 (13.64)	39.38 (12.80)	32.86 (11.20)	38.23 (12.56)	16.69**	0.198**
Gender						31.25**	0.018**
Male	104 (26.5%)	101 (37.5%)	108 (21.4%)	33 (25.2%)	90 (20.5%)		
Female	288 (73.5%)	168 (62.5%)	396 (78.6%)	98 (74.8%)	350 (79.5%)		
Travel party							
Partner	149 (37.6%)	153 (56.7%)	257 (50.7%)	59 (44.4%)	220 (49.1%)	25.57**	0.016**
Family with only children below 12 years old	104 (26.3%)	32 (11.9%)	84 (16.6%)	34 (25.6%)	82 (18.3%)	28.15**	0.016**
Family with children in different age groups	99 (25.0%)	32 (11.9%)	91 (17.9%)	22 (16.5%)	98 (21.9%)	20.82**	0.012**
Other relatives	34 (8.6%)	10 (3.7%)	32 (6.3%)	8 (6.0%)	31 (6.9%)	5.46	0.004
Friends	65 (16.4%)	46 (17.0%)	108 (21.3%)	35 (26.3%)	87 (19.4%)	8.45*	0.005*
Alone	9 (2.3%)	19 (7.0%)	23 (4.5%)	2 (1.5%)	21 (4.7%)	11.82**	0.007**
Has been on a rural holiday during the past 12 months	236 (59.9%)	155 (58.1%)	319 (63.5%)	94 (71.2%)	314 (70.4%)	17.95**	0.10**
Is not planning to go on a rural holiday during the next 12 months	70 (17.8%)	57 (21.2%)	100 (19.9%)	20 (15.2%)	70 (15.7%)	21.96**	0.007**

*p<0.10
**p<0.05

Table 5. Profile of Motivation Segments on Age, Gender, Type of Travel Party and Previous Rural Holidays

	Family and nature (N=374, 21.3%)	Nature and sports (N=360, 20.5%)	Partner (N=637, 36.3%)	Relaxation (N=383, 21.8 %)	χ 2 / F	Goodman Kruskal's Tau / Eta
Mean age in years (Std.Dev.)	40.37 (10.82)	39.40 (13.81)	38.96 (13.53)	38.11 (12.58)	1.901	0.059
Gender					10.29**	0.006**
Male	74 (20.1%)	102 (28.7%)	173 (27.5%)	87 (22.8%)		
Female	295 (79.9%)	254 (71.3%)	457 (72.5%)	294 (77.2%)		
Travel party						
Partner	54 (14.4%)	132 (36.7%)	541 (84.9%)	111 (29.0%)	591.04**	0.337**
Family with only children below 12 years old	162 (43.3%)	22 (6.1%)	57 (8.9%)	95 (24.8%)	231.265**	0.132**
Family with children in different age groups	152 (40.6%)	45 (12.5%)	48 (7.5%)	97 (25.3%)	184.117**	0.105**
Other relatives	22 (5.9%)	37 (10.3%)	30 (4.7%)	26 (6.8%)	12.00**	0.007**
Friends	36 (9.6%)	136 (37.8%)	72 (11.3%)	97 (25.3%)	135.70**	0.077**
Alone	2 (0.5%)	47 (13.1%)	6 (0.9%)	19 (5.0%)	99.58**	0.057**
Has been on a rural holiday during the past 12 months	252 (67.7%)	231 (64.5%)	396 (62.6%)	240 (63.2%)	2.93	0.002
Is not planning to go on a rural holiday during the next 12 months	39 (10.5%)	78 (21.7%)	113 (17.9%)	87 (22.8%)	33.91**	0.008**

*p<0.10
**p<0.05

It can be seen in Tables 6 and 7 that travel activities are much more powerful in separating clusters. All the test scores are higher in travel activity segmentation and there are much more statistical differences between segments. The test values of Goodman and Kruskal's Tau test are much higher in activity segmentation than motivation segmentation. For example, travel motivation segments differ

from each other statistically only in use of Internet, whereas travel motivation segments also differ in their use of magazines, brochures, guidebooks, word-of-mouth, and travel agency. Travel activity segments also differ regarding their Internet use behaviour more than members of travel motivation segments, and there are more differences between travel activity segments in online purchasing behaviour and the differences in writing online reviews are greater.

Table 6. Differences in information seeking behaviour between travel activity segments

Information sources	Water activities (N=396, 22.6%)	Passives (N=270, 15.4%)	Nature activities (N=507, 28.9%)	Winter activities (N=133, 7.6 %)	Actives (N=448, 25.5 %)	χ 2	Goodman Kruskal's Tau
Information sources used when planning and booking a holiday							
Internet	372 (93.9%)	226 (83.7%)	476 (93.9%)	128 (96.2%)	424 (94.6%)	39.22**	0.022**
Magazines	82 (20.7%)	49 (18.1%)	110 (21.7%)	32 (24.1%)	129 (28.8%)	13.86**	0.008**
Brochures	179 (45.2%)	116 (43.0%)	263 (51.9%)	59 (44.4%)	248 (55.6%)	16.71**	0.010**
Guidebooks	67 (16.9%)	42 (15.6%)	90 (17.8%)	30 (22.6%)	111 (24.8%)	14.13**	0.008**
Friends and relatives	147 (37.1%)	84 (31.1%)	214 (42.2%)	57 (42.9%)	214 (47.8%)	22.36**	0.013**
Travel agency	37 (9.3%)	22 (8.1%)	70 (13.8%)	17 (12.8%)	72 (16.1%)	14.37**	0.008**
Types of web sites used when planning and booking a holiday							
Affiliate website	261 (65.9%)	156 (57.8%)	337 (66.5%)	78 (58.6%)	326 (72.8%)	20.54**	0.012**
Travel agency website	151 (38.1%)	82 (30.4%)	187 (36.9%)	48 (36.1%)	189 (42.2%)	10.32**	0.006**
Destination website	131 (33.1%)	88 (32.6%)	181 (35.7%)	51 (38.3%)	199 (44.4%)	15.90**	0.009**
Search engine	345 (87.1%)	203 (75.2%)	419 (82.6%)	118 (88.7%)	398 (88.8%)	29.62**	0.017**
DMO website	50 (12.6%)	30 (11.1%)	74 (14.6%)	27 (20.3%)	96 (21.4%)	20.72**	0.012**
Newspaper/Magazine web site	58 (14.6%)	24 (8.9%)	78 (15.4%)	18 (13.5%)	81 (18.1%)	11.64**	0.007**
Discussion boards / blogs	60 (15.2%)	37 (13.7%)	92 (18.1%)	29 (21.8%)	98 (21.9%)	11.41**	0.007**
Social media	49 (12.4%)	24 (8.9%)	74 (14.6%)	21 (15.8%)	76 (17.0%)	10.55**	0.006**
Purchased online travel products from the past 12 months							
Accommodation	205 (51.8%)	109 (40.4%)	269 (53.1%)	76 (57.1%)	257 (57.4%)	21.42**	0.012**
Flight tickets	145 (36.6%)	73 (27.0%)	182 (35.9%)	56 (42.1%)	184 (41.1%)	16.36**	0.009**
Ticket to event / destination	59 (14.9%)	30 (11.1%)	72 (14.2%)	30 (22.6%)	90 (20.1%)	16.19**	0.009**
None of the above	110 (27.8%)	116 (43.0%)	155 (30.6%)	30 (22.6%)	113 (25.2%)	31.05**	0.018**
Writes online reviews	117 (29.8%)	60 (22.3%)	114 (22.5%)	35 (26.5%)	140 (31.4%)	14.06**	0.008**

*p<0.10

**p<0.05

Table 7. Differences in information seeking behaviour between travel motivation segments

Information sources	Family and nature (N=374, 21.3%)	Nature and sports (N=360, 20.5%)	Partner (N=637, 36.3%)	Relaxation (N=383, 21.8 %)	χ 2	Goodman Kruskal's Tau
Information sources used when planning and booking a holiday						
Internet	347 (92.8%)	328 (91.1%)	603 (94.7%)	348 (90.9%)	6.89*	0.004*
Types of web sites used when planning and booking a holiday						
Affiliate website	264 (70.6%)	226 (62.8%)	426 (66.9%)	242 (63.2%)	6.75*	0.004*
Newspaper/Magazine web site	42 (11.2%)	57 (15.8%)	91 (14.3%)	69 (18.0%)	7.37*	0.004*
Discussion boards / blogs	47 (12.6%)	75 (20.8%)	114 (17.9%)	80 (20.9%)	11.60**	0.007**
Social media	45 (12.0%)	44 (12.2%)	87 (13.7%)	68 (17.8%)	6.72*	0.004*
Purchased online travel products from the past 12 months						
Accommodation	189 (50.5%)	181 (50.3%)	358 (56.2%)	188 (49.1%)	6.52*	0.004*
Flight tickets	111 (29.7%)	134 (37.2%)	255 (40.0%)	140 (36.6%)	11.02**	0.006**
Ticket to event / destination	54 (14.4%)	55 (15.3%)	90 (14.1%)	82 (21.4%)	10.81**	0.006**
Writes online reviews	85 (22.7%)	109 (30.3%)	157 (24.8%)	115 (30.3%)	8.95**	0.005**

*p<0.10
**p<0.05

There is also a possibility that the number of segments affects the scale of statistical differences between segments. Table 8 shows the statistical differences among six different segmentation solutions. The differences among segments seem to increase as more and more clusters are added to the solution, partially explaining why the five-cluster activity segment solution performed better than the four-cluster travel motivation segment solution. However, the differences among activity segments are greater than the differences in travel motivation segmentation solutions with the same number of segments in almost every aspect measured in this study. Only when comparing travel party and plans to go to a rural holiday are the differences greater among travel motivation segments.

Table 8. Comparing different cluster solutions

Information sources	Activities, three clusters	Activities, four clusters	Activities, five clusters	Motivations, three clusters	Motivations, four clusters	Motivations five clusters
Age, F-test / eta	1.91 / 0.048	13.40 / 0.155	16.69 / 0.198	1.99 /0.049	1.90 / 0.059	1.81 / 0.067
Gender, chi test / tau	6.82 / 0.004	30.46 / 0.018	31.25 / 0.018	6.98 / 0.004	10.29 / 0.006	10.69 / 0.006
Travel party, chi test / tau						
Mean	11.39 / 0.007	15.30 / 0.009	17.21 / 0.010	189.31 / 0.108	208.95 / 0.119	209.87 / 0.120
Median	10.71 / 0.006	15.05 / 0.009	16.32 / 0.010	141.00 / 0.081	159.91 / 0.091	160.72 / 0.092
Has been on a rural holiday, chi test / tau	11.17 / 0.006	15.28 / 0.009	17.95 / 0.010	2.78 / 0.002	2.93 / 0.002	12.20 / 0.007
Is planning to go to a rural holiday, chi test / tau	17.08 / 0.006	19.11 / 0.006	21.96 / 0.007	33.22 / 0.008	33.91 / 0.008	50.71 / 0.014
Information sources, chi test / tau						
Mean	7.06 / 0.004	12.70 / 0.007	13.52 / 0.008	2.44 / 0.001	3.24 / 0.002	4.57 / 0.003
Median	7.74 / 0.005	13.05 / 0.008	14.00 / 0.008	2.34 / 0.002	3.41 / 0.002	3.85 / 0.002
Websites used in search, chi test / tau						
Mean	9.48 / 0.005	13.81 / 0.008	14.97 / 0.009	4.49 / 0.003	5.74 / 0.003	9.98 / 0.006
Median	7.03 / 0.004	11.35 / 0.006	11.64 / 0.007	3.46 / 0.002	5.63 / 0.003	10.93 / 0.006
Online purchases, chi test / tau						
Mean	5.36 / 0.003	12.13 / 0.007	14.01 / 0.008	4.41 / 0.003	5.98 / 0.003	9.29 / 0.005
Median	6.16 / 0.004	10.72 / 0.006	16.19 / 0.009	2.78 / 0.002	4.29 / 0.002	9.11 / 0.005
Writing online reviews, chi test / tau	13.11 / 0.008	13.21 / 0.008	14.06 / 0.008	8.95 / 0.005	8.95 / 0.005	11.42 / 0.008

DISCUSSION AND CONCLUSION

In this study the superiority of activity based segmentation is compared to that of travel motivation based segmentation in respect to the power to distinguish between clusters. Segment heterogeneity has always been an important criterion when evaluating the success of market segmentation schemes. In order to effectively target different segments they need to be sufficiently distinguished, not just by demographics but also by information seeking behaviour. This study contributes to the existing market segmentation literature on tourism by comparing segment heterogeneity between activity and travel motivation segmentation.

The results presented in Tables 4 to 8 show that activity based segmentation produces more distinctive segments than travel motivation segmentation in most items measured in this study. This holds true for information seeking behaviour, online purchasing behaviour, and online information seeking behaviour and writing online reviews as well as socio-demographic factors. The only items for which travel motivation segmentation produces more distinctive segments are travel party and plans to go on a rural holiday in the near future.

The results of study concur with those of earlier studies. The results presented in Table 3 reveals a strong relationship between travel activities and travel motivations. Just as Moscardo et al. (1996) found a link between benefits sought and travel activities, this study found that travel motivations are connected to travel activities (Table 3). Travel motivations are the factors that make people want to travel, whereas activities represent what they want to do on their holidays. The results of this study also support this idea as travel motivations form more distinct segments than travel activities regarding the plans to go on a rural holiday during the next 12 months.

In earlier studies the Internet has usually been only one information channel among others. However, the importance of the Internet as a planning and booking channel has grown very fast in the last 20 years (Buhalis & Law, 2008). As the technology develops there have been many innovations, especially in the services provided in the Internet. The destination websites are losing importance as people are searching for more and more information from social media. This change in information seeking behaviour has also to be accounted for in market segmentation studies. In this study the segments are not compared only by different information channels used but also by how they use the Internet when planning, booking and reviewing their holidays. This enables tourism companies to plan and design their marketing campaigns better, and to choose what different Internet channels to use in order to most efficiently reach the customers they desire.

There are also several managerial contributions to be found in the results of this study. In this study both travel activity as well as travel motivation segments are examined and described, providing managers of rural tourism companies important information on existing market segments. For example, members of "Water activities" are hardly interested at all in canoeing, even though rowing and fishing are important for most of them. Those most interested in canoeing are members of "Actives", who, for example, use magazines more than members of "Water activities" segment. This only denotes the importance of distinguishing

rural tourists interested in canoeing from those interested in fishing and rowing. Motivation segmentation of rural tourists has been done many times in the literature (e.g. Frochot, 2005; Park & Yoon, 2009; Pesonen 2012) yet little is known about activity segmentation of rural tourists. For managers of rural tourism companies this study provides results on two kinds of segmentation methods from which managers can choose the segment or segments that best suits their companies' marketing strategy and plans.

The results are useful especially when designing recommendation systems (Gretzel et al. 2004) as the results suggest that recommendation systems should be based on travel activities instead of travel motivations. Recommendation systems based on travel activities should be more accurate in recommending the correct travel products than travel motivation based systems. The results show that activity segmentation should be preferred to motivation segmentation when researcher or company wants to find distinctive segments.

There are some limitations to this study. It should be born in mind that the data was collected only from Internet users. However, it can be concluded that most rural tourists in Finland are likely to visit one of the websites included in this study when planning and booking their holidays. Internet penetration in Finland is very high (Statistics Finland, 2011) and this study has included all age groups under 65 years. Also most of the respondents in this study were women. This can be a result of self-selective sampling or that women visit the websites the data was collected from more often. Also the answering format in which respondents only choose motivations and activities important for them can be highly prone to evasion bias (Dolnicar, 2013), thus producing substantially fewer "yes" responses than any other answer format. This is not necessarily a bad thing as fewer responses make segments more distinctive, but still something that has to be accounted for when interpreting the results.

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Juho Pesonen
Developing Market Segmentation in Tourism: Insights from a Finnish Rural Tourism Study

Efficient utilization of market segmentation creates competitive advantage for tourism companies. This research explores options for improving the success of market segmentation research by testing different market segmentation methods and effects of information and communication technologies (ICTs) in tourism research. This study provides evidence that the academic market segmentation literature does indeed identify segments that also exist in practice, and contributes to the way market segmentation is conducted in travel and tourism.

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