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Ferry Connection as an Attribute of Twin-Capital's Brand Image

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Destination collaboration has emerged as an answer to increasingly challenging competition within tourism industry. The benefits of the approach include i.e. stability of growth, sustainability and innovation. The purpose of this thesis is to explore whether transport connection can assist in establishing such collaboration through common brand image.

The initial idea to study the topic originated from Tourism in Twin-Capital project currently near completion and seeking further funding. The project perceives Helsinki and Tallinn as two destinations that could offer visitors an extended tourism experience through cooperative competition. The aim of the project is to facilitate tourism collaboration between the cities through education, research and product development.

The theoretical part of the thesis studies destination image as a complex multilayered entity as perceived by individual tourists. The concept has been studied extensively, yet an exact definition is challenging due to multiple theories approaching the subject and its constituents from different angles. The empirical analysis, in turn, examines whether ferries running between Helsinki and Tallinn support the appeal of visiting both destinations and whether differences between various tourist types exist.

The results reveal strong correlation between favourable perception of travelling by ferry and tourists' willingness to visit Tallinn as part of their journey to Helsinki. This, in turn, depends on evaluation of vessels' individual service and quality elements as well as respondents' nationality, income, personality traits, travel experience and family structure. The results also reveal that not every service and quality component impact overall perception equally but, in certain cases, may become irrelevant.

The research confirms previous studies regarding the role of transportation in relation to destination characteristics implying that ferry connection indeed affects brand image in Twin-Capital context as well. Since tourists perceive service and quality elements aboard ferries differently, it has an impact on possible development of new marketing strategies. Therefore, local DMOs need to acknowledge the importance of transportation as a whole and take more active role in its development in the future.

Key words
Destination, image, brand, characteristic, attribute, ferry

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1 Introduction

Collaboration in tourism industry is gaining an increasing foothold in current circumstances. With local destination management organizations (further referred to as DMOs) having been utilizing such approach for already many years, it is becoming clear that this is quickly becoming the only viable mean to maintain a competitiveness in a marketplace. With many examples from inter-destination collaboration around the globe – such as Greater Mekong Subregion, East ASEAN Growth Area and Copenhagen-Malmö – confirming the benefits, the potential implications can no longer be overlooked. This holds particularly true for peripheral destinations, serving as the means of broadening the destination domain. (Fyall and Garrod 2005; 5, 44, 289.)

The drivers for such development have been, among others, intensified globalization, ever more demanding consumers as well as deregulations in the aviation industry. Collaboration has thus provided a much saught-for solution with most significant benefits including sustainable growth oppourtunities, cost efficiency along with more efficient product development and use of resources. Thus, it can be said that implementation of collaborative destination marketing strategy is without any doubt becoming – if not yet having become – an obligatory rather than advantageous approach. (Fyall and Garrod 2005; 6, 8-9, 14, 315; Pernia 1999, 51; Yamakawa 1999, 29.)

The likely benefits resulting from collaboration are i.a. more effective implementation of marketing campaigns through better economies of scale and fostering of new innovations – especially if current tourism product is underdeveloped. Expansion of EU into Baltic countries has only facilitated this even further by creating something that can be deemed as permissive setting for regional co-operation to develop, including integrated local policies and funding for the sake of infrastructure development. (Fyall and Garrod 2005; 4, 9, 14, 290, 302.)

1.1 Prospects of Twin Capital collaboration

Helsinki and Tallinn can be duly placed in a category referred to as 'peripheral' destinations. Located in Northern Europe, these cities are situated in geographically challenging area making it difficult to achieve high numbers of tourist arrivals. With nearby cities of Stockholm and Copenhagen receiving significantly higher amounts of bednights, it is clear that Helsinki and Tallinn remain, as of yet, challengers on the market. Although the cities are in different stages of tourism development, the twosome have also many similarities including short length of

stays, similar occupancy rates, arrivals in the harbours, comparable primary markets as well as seasonal fluctuations. (Helsingin kaupungin matkailu- ja kongressitoimisto 12/2011; 1-2, 7; Austrian National Tourist Office 2012; Tallinn City Tourist Office & Convention Bureau 15.03.2011, 1.)

Yet, in terms of tourism strategies, the cities implement two different approaches. While Tallinn's Tourist Office & Convention Bureau focuses mainly on operational tasks, Helsinki operates on much more extensive scope. This includes clearly defined and publicly released vision and strategical objectives. More specifically, Helsinki aims at developing a strong and original brand on a global level while promoting itself as a year-round destination. In addition, it focuses on becoming an appealing cruise destination as well as leading and most quality oriented city for meetings and conventions on European level along with developing transport connections and partnerships with the stakeholders. Tallinn, on the other hand, maintains lower key approach towards strategic marketing focusing mainly on promotion, publishing marketing materials, co-ordinating tourism related projects as well as product development. (Helsingin kaupungin matkailu- ja kongressitoimisto 3/2011, 2; Tallinn City Tourist Office & Convention Bureau 2012.) Therefore, it is likely that the cities might have different expectations regarding the preferred outcomes of destination marketing. As it is suggested to consider compatibility of DMOs visions with each other as well as differences in approaches towards positioning – implementation of collaboration approach as a foregone conclusion would not be recommended (Fyall and Garrod 2005; 317, 319).

According to Dwyer (in Fyall and Garrod 2005, 309-310), this holds particularly true for such export industry dependant countries as Finland which "are most likely to suffer adverse economic effects from" sharing their industry profits. Thus, careful assessment of all potential benefits and impediments involving thorough internal and external audits would be highly recommended. However, as this goes beyond the topic studied, we will refrain from going deeper into assessment of PESTEL environments, competitive forces as well as SWOT analyses. Yet, the cities' close proximity to each other, well developed air service connections to and from Helsinki as well as its expertise in tourism development can only bode well for a stronger partnership. Therefore, in order to avoid any further confusion, it would be more accurate to refer to 'cooperative competition' as the most viable solution in this particular context. This would facilitate improved competitiveness by intensifying need to develop new products and to improve their quality further. (Fyall and Garrod 2005; 302-303, 316, 329-338.)

One option to induce such competition would be an introduction of common brand which would offer an extension to the destination's current product offering while forcing them to compete against each other for shared visitors as proposed in Tourism in Twin-Capital project. Since its launch, the project has helped in bringing these two closer together in terms of cooperation. With its main objectives focusing on tourism education, research and development, the initiative can effectively close the gap between the industries on each side of the gulf (of Finland). One goal of the project is also to provide market analyses for the use of professionals in both destinations helping them to achieve compatible standards in tourism products. This could eventually help in establishing Twin-Capital brand. (Tourism in Twin-Capital 2012.) At the same time, development of transport connection can improve the cross-border mobility and subsequently help collaborative environment to evolve.

1.2   Evolution of transport connection between Helsinki and Tallinn

Transportation between the Twin-Capital cities has long history with regular shipments of food, wood and building materials across the gulf dating back to the age of Russian Empire. The beginning of 19th century saw the advent of steam vessels which made the route more accessible for passenger traffic and making it popular among the upper class in particular. Regular access between the ports soon followed with the arrival of British built vessel Storfusen which operated between the ports of Stockholm, Helsinki, Tallinn and St. Petersburg increasing passenger numbers even further.

The demand for the route was clear from the outset with voyages tripling between 1920 and 1938 and as many people travelling from Finland to Tallinn as to all other foreign destinations combined. (Helsingin Sanomat 19.12.2001.) The first passenger flight between the cities occured in 1924 with then newly established Aero Airlines AS (now Finnair) making its maiden journey across the Gulf of Finland. The first planes had room for four passengers only and lacked comfort – especially for pilots who did not have the privileges of a closed cockpit. The flights were operated from Katajanokka sea terminal using pontoons during summer and skis during winter and were frequently disrupted due to challenging weather conditions. (Helsingin Sanomat 7.3.1999, Helsingin Sanomat 26.10.2001.)

Second World War disrupted the transport connection until the motor vessel Vanemuine reestablished the sea access in 1965. The link was remarkable in a sense that it opened access from Soviet Estonia to the outside world for the first time. Naturally, KGB kept close eye on the route and only few citizens were ever permitted to board the vessel. (Histrodamus 2012.)

During the following years, 100 000 to 200 000 passengers travelled from Finland to Soviet Union annually with numbers increasing to 400 000 upon the opening of the borders (Helsingin Sanomat 19.12.2001). The transport link between Helsinki and Tallinn had been subsequently expanded to include helicopter connection as well with Copterline entering the market in 2000. The company first flew until 2005 when its operations seized due to fatal accident. In 2008 the flights were disrupted for the second time due to the beginning of global financial crisis. (Ilta-Sanomat 21.12.2011, Taloussanomat 11.8.2011.) Copterline, however, returned in 2011 relaunching its flights one more time (Copterline 2012a).

Currently, there are vast amount of travel options available between Helsinki and Tallinn with Tallink Silja, Eckerö Line, Viking Line and Linda Line operating ferry and catamaran connections along with Finnair, Estonian Air and Copterline offering flights (Helsinki Airport 10/2012, Yle 2012). The route is well serviced with all transport providers together offering a total amount of 26 to 38 departures daily[1]. With connections running from early in the morning until past midnight and in different price categories, the transport link accommodates various passengers' needs. (Copterline 2012b, Eckerö Line 2012a, Helsinki Airport 10/2012, Linda Line 2012, Tallink Silja 2012, Viking Line 2012a.) The vast majority of crossings happen by ferry with over 7 million arrivals and departures to Helsinki and Tallinn harbours annually (Helsingin kaupungin kongressi- ja matkailutoimisto 12/2011, 6; Tallinn City Tourist Office & Convention Bureau 15.03.2011, 1). This inevitably puts pressure on the shipping companies as growing numbers of passengers is likely to reach maximum capacity of current terminals at some point (Yle 2012).

Increasing demands for passenger and freight capacity along with tighter environmental regulations have revived discussions about new transport solutions, most notably development of subsea railway tunnel connecting Helsinki and Tallinn (O-P Hilmola 2012; 21, 24; The Estonian Institute for Futures Studies, ASI Consult OÜ, 5). The vision dates back to early 90's and has been subject to various analyses already back then – mainly from geological perspective. This has recently changed, however, after mayors of Helsinki and Tallinn had signed letter of intent regarding initiation of a feasibility study concerning different railway connection alternatives. (Helsingin Sanomat 1.4.2008; The Estonian Institute for Futures Studies, ASI Consult OÜ, 5.)

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[1] Changes in the numbers of daily departures are causeed by differences in the amounts of dayly departures on a weekly level along with Linda Line suspending its operations during winter season.

The initiative obviously has several challenging elements to it – mainly coming from financial restrictions, conflicting interests as well as unfavorable experiences from Channel Tunnel (Helsingin Sanomat 6.2.2012; Salmensaari 2010, 14). However, with HTTransPlan project – aiming at delivering feasibility analysis of alternative transportation scenarios for governing bodies – almost complete, it will be interesting to see whether this would impact or speed up development process of the transport link. As for the rail tunnel, depending on which scenario will prove to be correct, the construction would not start earlier than in ten years. (HTTransPlan 2012; Terk, Sakkeus and Keskpaik 2012, 25.)

1.3   Research design

The aim of this thesis is to examine how much ferry connection affects Twin-Capital's brand image from the perspective of domestic and international visitors travelling to either or both cities. In other words, it will address whether travelling across Gulf of Finland is an attraction byitself and by what means it could be improved. The results will be obtained from closeness coefficient values derived from fuzzy TOPSIS analysis which would be described in further detail in chapter 4.1. The method is suitable for assessment of linguistic variables such as those used in the questionnaire of this thesis. In addition, the research will attempt to find out which elements of ferry connection between Helsinki and Tallinn are considered to be the most important ferry and evaluate them compared to scenarios as proposed by the literature used. The intention is to address all of the above by providing answers to the following questions:

- How big a role does ferry connection play in choosing Helsinki or Tallinn as travel destination?
- Which service and quality elements of the connection impact the willingness to travel by ferry the most and are there any differences in their importance to different tourist types?
- How appealing would Helsinki-Tallinn tunnel connection be from the point of view of prospective tourists?

2   Transportation as an attribute affecting destination choice

The purpose of the theoretical framework presented in this chapter is to explain how various tourism concepts relate to each other providing justification for the topic researched in this thesis. It will give the reader an idea of how exactly do elements of transportation relate to travel decision making (TDM). For the purpose of clarity, the text may be regarded as a funnel where more general concepts are followed by their constituents. In other words, this will justify that TDM is influenced by destination's image which, in turn, consists of selection of attributes one of which is being ferry connection. In addition, the elements of the transportation will be reviewed. This tri-dimensional approach is common in destination image studies and offers researchers flexibility in measuring the relationships between TDM variables, perception of destination's characteristics and its image (Gallarza, Gil and Calderón 2002; 62, 67). However, before proceeding forward, following key concepts need to be defined first.

According to Decrop, travel decision making[2] is a process involving socio-psychological elements influenced by personal and external variables. A tourist is pushed to travel by his or her own motives, personality, lifestyles and emotions which are filtered through social and cultural influences, interpersonal variables and situational influences. In addition, TDM is subject to tourist's mental interpretation of a destination through its perception, acquired knowledge and attitudes. (Decrop 2006; 7-9, 12.) It is important to note that TDM is not only a destination choice but rather consists of considerations made on several decision levels. In other words, it involves more generic items of decision such as whether a trip should substitute other major purchace(s) etc. Choice of specific destination is only a part of this process and, unlike TDM in general, is not dependent "on the four Ps of the marketing mix [but] involve[s] the relative importance given to product attributes". (Decrop 2006; 68, 91, 100, 125.)

Holloway describes destination as a large natural or constructed area within a country, a country itself, a specific town or a resort or a certain region of the world. In addition, it may be nodal or linear in nature having its attractions closely grouped or scattered across wide geographical area. (Holloway 2009; 14, 16.) Decrop confirms the possibility of a region being considered as one destination although his wording is somewhat different. According to him, a tourist "develops perceptions and feelings (attitudes) towards […] (domestic, foreign or a

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[2] Decrop prefers to use the wording 'vacation decision making' instead

combination of both) destinations" hence being prone to visit e.g. several cities during one trip. (Decrop 2006, 26-27.)

Beerli and Martín present "image as a concept formed by the consumer's […] evaluation of the perceived attributes of the object and […] an individual's feelings towards" it (Beerli and Martín 2004, 658). Its role as a factor in image → trip quality → perceived value → satisfaction → behavioral intentions sequence, as validated by Chen and Tsai, makes focusing on it one of the key priorities of destination managers (Bigné, Sánchez and Sánchez 2001, 614; Chen and Tsai 2007, 1118-1120; Chi and Qu 2008, 625-626, 631, 632-634; Gallarza et al. 2002, 56; Tasci and Gartner 2007; 413, 419, 421-423; Yoon and Uysal 2005, 46). This influence is further emphasized by the fact that satisfied tourists are more likely to recommend visiting the destination to the people they know creating a ripple effect and making the destination even more popular (Yoon and Uysal 2005, 45).

Literature suggests a distinction between primary and secondary image where former is a consequence of visiting a destination and latter – a result of external stimuli coming from "organic, induced, covert and autonomous sources of information" (Beerli and Martín 2004, 661; Tasci and Gartner 2007, 414). Combined, these determine the way individual perceives the overall image based on its cognitive and affective components (San Martín and Rodríguez del Bosque 2008; 270, 274).

Destination brand along with brand image, in turn, stands for concrete promise "of a memorable experience that is uniquely associated with a destination" and that the tourist can count on his or her expectations being met. It is a relatively new concept within tourism context receiving proper attention for the first time in Travel and Tourism Research Association's Annual Conference in 1998 (Blain, Levy and Brent Ritchie 2005, 328; Holloway and Robinson 1995, 74.)

According to Aaker (2005, in Blain et al. 2005, 329), brand's primary purpose is to identify and differentiate either one seller's or group of sellers' products and services "from those of competitors". It consists of "brand awareness, perceived quality […], brand associations and brand loyalty". In order to be strong, it is considered to require consistent advertising and reinforcement of differentiated brand message (Berry; Biel; Nielsen; Sebastiao, in Blain et al. 2005, 329).

In tourism context specifically, it serves various purposes communicating product differentiation through registered names, trademarks, etc., and appealing to consumer perceptions enhancing product value and establishing customer relationships as suggested by Hankinson (2004). He goes on further by presenting the concept under an umbrella of brand relationships related to consumers, primary service, media and infrastructure which all fall beneath single core brand. (Blain et al. 2005, 329.)

Considering Helsinki's and Tallinn's common history, proximity and interlinkedness through transport connections, definition of Twin-Capital as one single destination can be justified. First of all, the setting definitely offers an oppourtunity to market the destination as something unique which is one of the key determinants of a brand. Furthermore, what comes to transport connections available, they do all represent what Hankinson calls brand's infrastructure relationship further supported by findings of Byon and Zhang, Chi and Qu, Pritchard and Havitz as presented in chapter 2.2.4. Therefore, this thesis evaluates brand as a unique joint destination experience produced as a result of cooperation between two competing destinations and which subsequently has a defineable image. Let us now proceed further into the concepts behind image perception.

2.1   TDM as a concept

We will now present an overview of TDM. Although the following concepts might seem generic at first, understanding them is necessary in order to appreciate the processes behind selection of a destination in all their complexity. Most importantly, the purpose of this part is to describe the major influences that lead to specific choice as well as travelling in the first place. The most noteworthy conclusion that can be derived from the subsequent chapters is that there are no universal approaches to TDM. Instead, individuals and groups perceive and decide on travelling differently depending on a situation. This depends on psychological, conceptual as well as social influences which may evoke different impacts and even evolve in time. Thus, in order to make correct empirical sampling, a thorough conceptualization of TDM is needed.

2.1.1   Special characteristics of TDM

Purchace and consumption of tourism product is not simply a pattern of evaluation, financial transaction and use. It rather involves several more subtle elements to it adding nuances to TDM process as a whole. Most importantly, travelling always consists of sequence of

purchaces related to accompanying products such as flight tickets and accommodation, complementing products such as car rental and refueling as well as non-tourism related products (Decrop 2006; 25, 36). In other words, it consists of several inputs coming from variety of sources affecting overall evaluation of a destination (Chi and Qu 2008, 626; Narayan, Rajendran and Sai 2008, 470)

Even as a packaged deal, tourism – as one-off activity – is complex enough to involve such subdecisions as with whom to travel, for how long and by what means of transportation as well (Decrop 2006, 22). Furthermore, depending on an individual's level of involvement, travel planning is more or less an ongoing process producing new ideas and aspirations all the time. Decisions are therefore bound in time succeeded by multitude of separate TDM processes. (Decrop 2006, 22.)

Quite often, the decision making process is far from being just a tool leading up to desired outcome but functions as a purpose within itself. Fantasizing, reading brochures and talking about travel plans evokes pleasant emotions all the while and is an integral part of TDM. (Decrop 2006, 44.) This holds particularly true for hedonic vacationers described in more detail in chapter 2.1.6 who derive so much enjoyment from planning alone that they often engage in daydreaming about unrealizable destinations. As the last conclusion, opting for a satisfactory rather than an optimal destination underlines the whole choice system as situational constraints function as major factors forcefully modifying the decisions (Decrop 2006; 27, 37, 128).

2.1.2   Motivation

Motivation serves as an initial desire to escape home environment (Decrop 2006; 33, 37). Travelling, as any type of consumer activity, may be regarded as a response to underlying need(s) to seek the transition from prevalent state of tension towards its satisfaction (Decrop 2006, 9). Venturing outside the home environment may thus be considered as a consequence to psychological factors, or wants, elicited by the desire of reaching the goal(s) (Decrop 2006, 9; Yoon and Uysal 2005, 45). It is important to notice, however, that the goal does not equal destination but results from underlying motives instead (Decrop 2006, 101).

According to Goodall (1988), four alternative motivations exist in tourism context: physical, cultural, escape from the prevalent reality and social. In addition, the above may be expanded to include status seeking and prestige as well. (Decrop 2006, 22; Kozak 2002, 229, 231.) How-

ever, this does not imply that these elements exclude each other as tourists often seek variety of benefits while travelling. This suggests that motivation is a multidimensional entity affecting TDM in several ways (Kozak 2002, 223).

Literature makes a distinction based on state of tension's endurance by categorizing travellers according to their level of involvement as described in chapter 2.1.5. This has implications on decision making in terms of information search (Decrop 2006, 10). The origins of enduring state of desire can be linked to external factors, such as climate, making those who live in colder, less sunnier countries more predisposed to travelling in general (Decrop 2006, 74).

Motivations also serve as moderating factors influencing image formation of individuals. That is to say, tourists may perceive same element of destination image differently depending on their own interests. (San Martín and Rodríguez del Bosque 2008, 273.) Accordingly, it is possible to have variances within single group of travelers as well. As it will be pointed out later in chapter 2.1.7, decision making power is not always equally distributed within one group. Therefore, an individual's own preferences and even such major decisions as whether to travel or not may at times be overridden by other members of the same group.

In order to summarize this chapter, motivation can be regarded as an initial determination to engage in TDM process. It is influenced by a number of variables characteristic to individual tourist and which can be manifested through factors related to tourist's physical, cultural and social, presige fulfilment and reality escape related factors. Motivation is therefore one of the elements which affect destination choice in rather indirect manner as can be seen from attachment 4.

2.1.3   Underlying psychological influences

Three cognitive constructs run in the background of decision making process affecting the way individual tourists respond to various aspects related to TDM. In other words, perception, assimilation and attitudes shape travellers' own preferences in advance influencing subsequent decision making process before it even commences. Over the long term, these constructs serve multiple purposes. First, they help in filtering and recognizing external stimuli such as advertisements, personal recommendations and media simplifying interpretation of incoming information. Secondly, they serve as intermediaries between the tourism product and an actual choice in form of predeveloped criteria. In certain cases, developed attitudes and perception may either reinforce or inhibit particular decisions. (Decrop 2006; 7-8, 26-27, 29,

31, 35, 38.) For example, associations related to living abroad or war memories may be decisive factors in whether someone chooses to seek or avoid travelling to certain destinations (Decrop 2006, 78).

Perception is formed when incoming sensory inputs are interpreted through series of mental processes which bundle together whatever may be related to the stimuli encountered, a person's own description and his or her opinion of it. These processes labeled as association, categorization and inference are influenced by attitudes and previously assimilated information stored in long-term memory and vice-versa. (Decrop 2006; 8, 38; Tasci and Gartner 2007, 416.) Therefore, e.g. tourists continuously evolve in the way they perceive different destinations as their travel experiences are affected by previously conceived mental images which, again, are reshaped during experiences themselves thus affecting subsequent choices (Decrop 2006; 27, 36-37).

Finally, travellers can also learn to respond in a predetermined manner lead by "need satisfaction, social agreement [or] 'travelability'" and without getting involved in complex mental processes at all. These developed attitudes are very common among tourists and contribute to formation of preferences, influence and help to predict the way a person thinks, feels or acts in relation towards certain destination. (Decrop 2006; 8-9, 29-31, 35, 101.)

2.1.4 An overview of TDM variables

The previous chapters dealt with the origins and general nature of tourism product consumption. Let us now move on to the more specific side of TDM. In his work on vacation decision making, Decrop divides contextual factors into four categories labeled as "environmental, personal, interpersonal and situational (Decrop 2006; 66, 69). These variables form the basis of the subsequent choice and will be presented individually based on their categorization in the following chapters and the conceptual model found in attachment 4.

What is most important to learn before proceding further into the analysis of TDM variables is that their functionality is twofold. Much like perception and attitudes, variables may facilitate or inhibit certain decisions. Moreover, the way they affect TDM differs depending on their endurance, intensity and the way tourist(s) choose to incorporate them into their decision making processes.(Decrop 2006, 66.)

For example, family and occupation remain stable over long period of time thus being referred to as structural influences whereas availability of flight tickets and time serve as situational constraints (Decrop 2006, 73-75). Other situatiational variables include e.g. mood shifts having an effect on preferences or need to redefine decision criteria if the trip is purchased as a gift (Decrop 2006, 15). Weather and climate, on the other hand, are slightly more complex entities, much like level of involvement. People living in cold or damp regions are likely to be generally more inclined towards travelling, to sunnier destinations in particular – whereas temporarily poor weather may evoke spontaneous decisions to book a trip. Involvement may differ in resembling way depending on an individual tourist as well as level of decision being different depending on whether it has to deal with choosing a specific brand, type of destination or general decision whether to travel or not. The more specific the decision, the more it is also affected by situational variables thus increasing their utility as determinants of particular destination. (Decrop 2006, 74.)

Situational variables are often perceived by tourists as constraints whereas structural factors are frequently regarded as oppourtunities. This connects them to the next level of categorization. Generally speaking, the larger the travel party – the stronger the constraints might seem at first, although some exceptions exist. For example, individual travellers are more restricted by certain TDM variables such as safety and budget considerations compared to groups. (Decrop 2006, 75.) In addition, constraints may vary within the same party of travelers as e.g. younger members will be more dependant on their parents' decisions, school results etc. (Decrop 2006, 76).

Finally, the distinction can be made between objective vs. subjective variables. More often than not, these have to deal with actual and potential influences (Decrop 2006, 76). The latter can result from anticipations related to occupation, lifecycle, changes in destination's characteristics and so on being based on personal beliefs rather than solid facts. As a result, these anticipations may either postpone or expedite a TDM process. (Decrop 2006, 77.)

Broadly speaking, TDM variables are what makes the process so complex as a phenomenon. They may affect and encompass other individual variables as well as intervene as a system with other tourists' personal decision making in a group context. Most importantly, they cover everything that influences tourism decision making originating from legal formalities, living situation, personal life, and specificalities related to individual trips. (Decrop 2006; 69, 71.)

2.1.5 Environmental variables

Social, cultural and geographical factors are the most influential environmental variable sub-types influencing tourism decisions (Decrop 2006, 69). Although social factors fall within this category as well, they are closely linked to group decision making situations which will be presented in more detail in chapter 2.1.7. Therefore, at this point, it is only sufficient to point out their structural as well as situational functionality. Simply put, visiting friends and relatives may serve as an impulse (i.e. push factor) either at certain point in time or repeatedly due to tradition(s) thus influencing TDM over long term. (Decrop 2006, 74.) What is more important, however, is to note how geographical factors affect the process. These are mostly concerned with information availability, climate and weather influencing final choice directly as situational constrains or as cultural variables affecting availability of information indirectly.

It is also worth mentioning how distance plays a role in image formation of a destination. As a rule of thumb, those who live further away from the destination tend to be more dependent on induced information sources described in chapter 2.2.2. Due to this fact, those who travel longer distances may have their perceptions somewhat distorted. (Gallarza et al. 2002; 61, 72; Tasci and Gartner 2007, 418.) It is what Ankomah, Crompton and Baker (1996, in Sirakaya and Woodside 2005, 825) refer to as cognitive distance and which is indirectly influenced both by cultural variables as an external factor and image components. This, as well as individual geographical factors are presented in attachment 4.

Let us now proceed to examine culture's role as part of TDM more specifically. According to Blackwell et al. (2001), "[c]ulture refers to a 'set of values, ideas, artifacts, and other meaningful symbols that help individuals communicate, interpret, and evaluate as members of society'". Therefore, it has an undisputable effect on who we are and the psychological processes that lie underneath our personality. (Decrop 2006, 12.) In tourism context, culture may act as e.g. a distinctive factor between domestic and international visitors by causing language barriers as well as influencing image formation through value differences (Bonn, Joseph and Dai 2005, 299; San Martín and Rodríguez del Bosque 2008, 269). To some extent, this also depends on culturally specific uncertainty avoidance level characterized by its members' reactions in unfamiliar situations indirectly influencing an individual's personality as visualized in attachment 4. I.e., apart from novelty seeking – which is common between travellers irrespective of the background – image perception is dependent upon how comfortable person would feel in an environment different to his or her own. (Kozak 2002, 230; San Martín and Rodríguez del Bosque 2008; 273, 275.) Grossly exotic images, on the other hand, are generally

considered to be ill-favoured as proposed by Hunt (1975) and supported by MacKay and Fesenmaier (1997) (Tasci and Gartner 2007, 419). It can be argued, however, that for some tourists such exotism may even serve as the primary purpose to travel (Decrop 2006, 22).

It is important, however, to make a distinction between culture as a broad definition and subcultures. Broadly speaking, the former encompasses multiple nations along with their citizens which share the basic norms yet may deviate in terms of e.g. race, religion, social class and age. Therefore, culture can be further split into subcultures based on these categorizations. In other words, nations, occupational groups, generations etc. may have their own distinct norms and behaviour patterns within broader concept of culture. (Decrop 2006, 12.) In tourism, this accounts for disparities in destination criteria among visitors from different countries. However, variances based on motives, sociodemographic factors as well as different language groups within single nationality exist as well. (Kozak 2002, 224-228, 230-231; Tasci and Gartner 2007, 418.) Moreover, a subculture may consist of members who have connections to other groupings. Figure 4 below gives a graphical explanation of the matter.
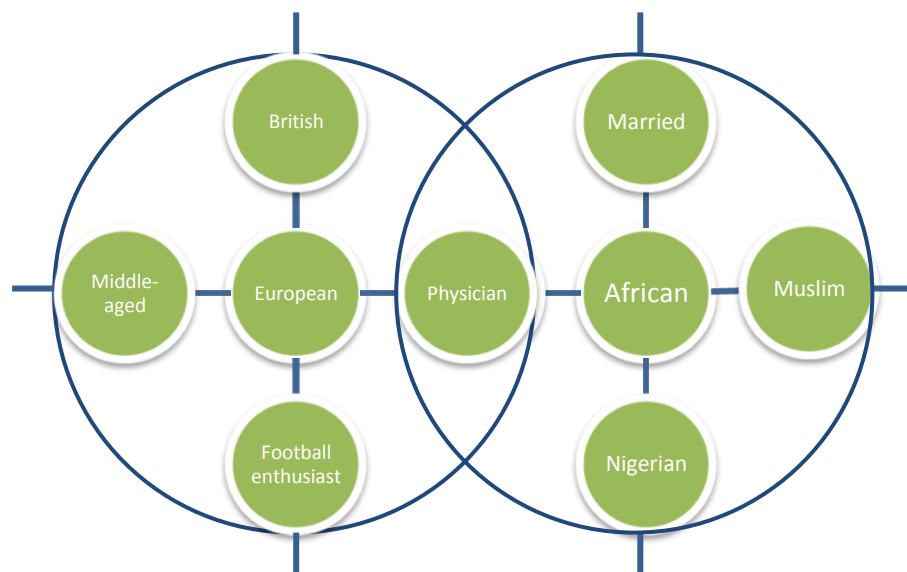
Figure 4. An average person may be defined through several subcultures each representing a connection point to other individuals. There are endless variations of these linkages each forming larger groupings of otherwise different persons.

As a summary to this chapter, we can come to a conclusion that culture is a broad concept that can be interpreted in several ways. To describe it merely as manifestation of nationality would be highly simplified and would undermine the broad meaning of the word. In the context of TDM, culture fits into conceptual model as one of the external factors and by influencing availability of information along with the level of risk aversion as shown in attachment 4.

Here, however, culture refers simply to nationality in order to maintain simplicity and clarity of conceptual model acknowledging subcultures as separate entities. These will be presented in the following chapters.

2.1.6 Personal variables

This category encompasses a broad selection of TDM variables. These include i.a. such determinants as personality, age, family cycle as well as travel experience, motives and level of involvement. Further distinction can be made between primary and secondary personal factors based on their dependency. In other words, e.g. education and occupation fall within the former category defining i.e. personal resources and brand loyalty which form the latter (Decrop 2006, 69). We shall present both of these in this chapter and attempt to include all of their constituents.

Personality can be defined both through self-image or a person's sustained habit to respond to external stimuli in a certain way (Decrop 2006, 10). It has pronounced influence on "vacation destinations, activities, period, style, [decision making] formulas" and so on (Decrop 2006, 71). In addition, lifestyles may be regarded as reflections of personality providing more detailed description to peoples' routines, prefererred activities, interests and so on. Compared to segmentation based on simply demographic variables, lifestyles deliver better utility when it comes to categorization as they consider the way consumers actually behave irrespective of imposed characteristics. (Decrop 2006, 11.)

Several means to classify tourists based on their personality traits exist. The most noteworthy, perhaps, is the model introduced in tourism by Plog (1972). The model incorporated popular yet basic distinction between psychocentric and allocentric tourists where former prefer independent and authentic experiences whilst latter enjoy familiarity and structure. (Decrop 2006, 10.) This also accounts for differences in how big a role service quality plays in destination assessment. While allocentrics may easily forego high quality on account of making the arrangements themselves, psychocentrics often enjoy better service as many of hospitality products are targeted for tour operators. However, this does not automatically imply that, given the occasion, former would automatically take on the oppourtunity to visit destination with better service quality. Neither does it guarantee flow of psychocentric tourists. (Weaver, Weber and McCleary 2007; 339, 341.) Instead, what theory suggests is that, depending on traveller's personality, service quality can be seen either as dissatisfier or neutral variable.

Typification can also be made by positioning tourists on 'emotional vs. rational', 'active vs. passive', 'introvert vs. extrovert' and 'avaricious vs. prodigal' grid(s). The first panning is concerned with level of attention to details. An emotional tourist is characterized by impulsive decisions whereas his or her counterpart would be bound by careful planning and analytical evaluation of available options. Second pairing divides tourists according to their desire to travel whereas introvert vs. extrovert typology makes a distinction based on those who do or do not seek actively social encounters. Timing of the trip is directly connected with the latter dimension as introvert tourists try minimize social contact by travelling during off-season whilst extroverts conduct the opposite. Finally, avaricious travellers are constrained by tight budget while prodigal are more generous and do not plan their spending as much. (Decrop 2006; 70-71, 120.) Decrop makes a more thorough typification, however, presented in attachment 1. According to his suggestion, tourists show noticeable differences when it comes to repeated behaviour, extent of planning, information search, adaptability and conformity. (Decrop 2006, 157-163.) Most importantly, though, personality connects underlying cognitive constructs determined by personality traits with motives as shown in attachment 4.

Major developments in personal life have an effect on travel behaviour as well. These are e.g. changes in lifecycle or occupation, ageing along with financially binding projects such as building a house and are included in attachment 4 as determinants of lifestyle which, in turn, affects benefits sought from travelling through motivation (Decrop 2006, 85-86). Transitional occasions have a substantial impact on the way individual is affected by oppourtunities or constraints and may even impact travelling behaviour. For example, a young family may consider staying at home as an equally inviting alternative whereas a retired couple may reduce their level of involvement and forego some previously important prerequisites as new constraints emerge (Decrop 2006, 88). Decrop therefore segments families based on their maturity and stage affirming this as a reliable approach. He presents eight family types categorizing them into age groups ranging from 20 to 40, under or above 40, under 45 and above 50 as well as whether these are made up of singles and married or unmarried couples with or without children. (Decrop 2006, 69-70.)

Experience plays a substantial role in shaping tourists' expectations and the benefits sought. Demand level increases as one becomes ever more familiar with travelling. Raised expectations can be also related towards certain destination characteristics such as service quality in hotels, transportation and attractions or towards an experience as a whole. Moreover, higher experience level can become self-fulfilling as tourist developes ever higher interest towards travelling itself. This can appear both as desire for variety or value. In other words, depending

on an individual, different importance is given towards visiting as many destinations as possible or experiencing only few in greater depth. (Decrop 2006; 41, 86, 88; Tasci and Gartner 2007, 416; Weaver et al. 2007, 341.) In addition to this, the latter often results in more analytical approach towards the final choice along with higher level of knowledge and more realistic as well as different expectations compared to first time visitors (Beerli and Martín 2004, 660-662; Decrop 2006, 120; Tasci and Gartner 2007; 414, 418-419).

Experience can also gain depth as a result of prolonged period spent at a destination. This, in addition to the above, generates more accurate perceptions. (Tasci and Gartner 2007, 421.) Experience, however, should be considered separate from the rest of personal variables as shown in attachment 4 as it has more profound effect on how destination image is perceived.

2.1.7 Interpersonal variables

The third category of variables involves groups as its focal component. Here the distinction is made based on levels associated with influence and formality. Primary groups usually have the highest impact on individual's travel decision making as these are the most intimate and cohesive of all subtypes. Thus, their role can be described as value-expressive, i.e. "[imposing their] norms, values or behavioral patterns". Secondary groups have looser structure and often consist of friends and therefore having less influence over the decision making. In addition, groups may be divided into more or less structured and those which either evoke or diminish the desire to be associated with them – i.e. be either aspirational or dissociative. The latter conceptualization may also involve normative or informative elements to it having referential or suggestive influence respectively serving as informal source of information affecting preferences and final decisions. Finally, groups have often unequal power distribution and may require norms and acceptance. (Decrop 2006; 13-14, 35, 41, 101.)

According to Decrop, a group of people travelling together permits individuals with different decision making styles within itself. Although preferences may differ on a personal level, TDM process eventually results in joint choice defining interpersonal and social variables as external factors as shown in attachment 4. (Decrop 2006, 163.) The level of cohesiveness has a significant impact on how easy it is for a group to arrive in a joint conclusion – i.e. the higher the level the higher the need to take everyone's opinion into account. Therefore, at times, travel plans may become even rejected in case some of the members have difficulties to join the trip. (Decrop 2006, 145.) For an individual, group may imply either structural or situational constraint. This largely depends on what type of group is in question. As it was previously men-

tioned, families impose an enduring influence over the decisions whereas friend circles evolve in time being less persistent (Decrop 2006, 76).

On the other hand, individual's influence over the group can not be forgotten either. In addition to this, some members of a group may impose higher influence over the decisions. This becomes ever more evident whenever a group has constrained type of tourists within itself. At times, for some individuals participation in the trip may be even involuntary (Decrop 2006, 161). Furthermore, members of the group might impact the expenditure of the others, parents might impose personal preferences on their children and friends or relatives can make suggestions or explicit proposals to revisit destinations they want to share with the group (Decrop 2006, 145).

2.1.8 Situational variables

This chapter concludes the part dedicated to TDM variables. These consist of e.g. personal selling, advertising, availability of tour package, financial constraints as well as other choices related to particular TDM process. In some cases, they may even make other decision criteria redundant. This becomes clearly evident in context of business travel where consumers, even despite negative image, do not really have other choice rather than to follow the ad-hoc situation and engage in tourism (Tasci and Gartner 2007, 420). As a result, situational variables affect evaluation of alternative destinations, accommodation and transportation options, level of self-initiative and timing of a trip as external factors included in the conceptual model in attachment 4. Moreover, time of year can constitute a major shift in motives as e.g. summer tends to evoke relaxation and pleasure as primary motivation to travel irrespective of previous variables (Kozak 2002; 229, 231). In addition to the above, several situational variables display bi-directional functionality – these affect TDM choices directly as shown in the conceptual model (Decrop 2006; 40-41, 99, 128). According to Woodside and MacDonald (1994), following decisions are cross-dependent:

- Destination, activities and mode of route
- Destination, local area visits, accommodation and attractions
- Activities, accommodation and local area visits
- Mode of route and F&B choices
- F&B, local area visits and souvenier purchases

2.2   Destination image

Until now, we had focused on TDM mainly from tourists' perspective. The previous chapters dealt with choice as the function of contextual elements irrespective of destination itself. We will now proceed to discuss the formation of preferences further and explain this process by using Lancaster's product characteristics theory and Koppelman's consumer transportation model as applied to tourism by Papatheodorou (2001), Seddighi and Theocharous (2002). Although both are generally considered to represent microeconomic approach to TDM, such simplification would be highly misleading. Indeed, the original models did generalize consumption on the price-demand continuum. However, the applied theories offer much more thorough explanation. First of all, both assume the existence of several characteristics leading up to the final choice. In addition, Seddighi and Theocharous incorporate Morley's (1992) suggestion that individuals perceive characteristics differently based on their own preferences. (Decrop 2006, 24-27.) This is largely in line with the TDM variables described above. Furthermore, as the aim of this thesis is to present a rigorous analysis of ferry connection as destination characteristic, inclusion of these findings is necessary.

2.2.1   Lancaster's and Koppelman's models

The shortcomings of traditional consumer demand theories to incorporate sufficiently all the complexities involved in tourism serve as the focal assumption in both Papatheodorou's as well as Seddighi's and Theocharous' models. More specifically, they target the weak points of previous studies which failed to incorporate time and spatial constraints along with power of supply chain and evolutionary nature of destinations. According to Papatheodorou, demand theories suggest the existence of representative tourist who can make simultaneous evaluation of all possible alternatives on the spot (Papatheodorou 2001, 165). Such assumption would virtually undermine the effects of marketing by ignoring the intangibility of tourism product and travellers' need to make decisions based on their expectations rather than opportunity to test the product in advance. In addition, former findings failed to apply preferential differences among tourists and explain why relative popularity between tourism destinations evolves in time (Papatheodorou 2001, 165-166).

In order to offer an empirically valid explanation, Papatheodorou proceeds to test his assumptions by modifying the amount of constraints and variables while using a mathematical model developed by Rugg (Papatheodorou 2001, 167). The model centers around the proposal that:

- Utility derived by tourists from consumption of a tourism product is equal to collection of characteristics in each destination
- The amount of characteristics consumed equals to amount of days spent in a destination and bound by situational constraints
- Travel costs are sum of price of tourism product multiplied by the amount of time spent at the destination to which the transportation costs are added and together should be less or equal to the expenditure available
- Time available for consumption of tourism product has to be at least equal to amount of time spent at the destination and while travelling there and back

By following these paradigms, Papatheodorou succeeds in proving that tourists' decision making depends on i.a. preferences, destination management, marketing campaigns, pricing policies, transportation innovations and new entrants (Papatheodorou 2001; 171, 173-174). Although the model revolves around temporal and financial constraints as the decision making criteria, it manages to disprove the belief that these are the only ones. The diagram in attachment 2 offers a graphical explanation to the theory.

A field study conducted by Seddighi and Theocharous can be regarded as the follow-up to Papatheodorou's research and offer a verification of theory's applicability in the real world environment. By applying a multivariate Logit analysis on quantitative data obtained from 200 tourists visiting Cyprus in March 2001, the authors were able to prove the existence of connection between personal as well as destination characteristics and probability to revisit (Seddighi and Theocharous 2002, 480). This was proven by high (0.679) r^2 values demonstrating strong correlation between these two in spite of relatively small sample of population and the stage of TDM process. The results suggest strong influence of characteristics over the intention to return, at least when taken jointly. (Seddighi and Theocharous 2002, 483.)

However, it is important to note that characteristics' influence over destination choice is not as purely straightforward as it may seem at first. Their role in TDM process runs parallel to the formation of perception influencing decisions in rather indirect manner. The relative importance of judgement based on characteristics is also largely dependent on whether this approach is preferred or not. Although this is the most common of decision making strategies, other decision making strategies – namely alternative-based, constraint-based and oppourtunistic – exist as well. (Decrop 2006; 120, 126, 128.) Choice also depends on "differences between tourists who [are] from the same country and visiting […] different destinations and between tourists who [are] from different countries and visiting the same destina-

tion" (Kozak 2002, 224). Therefore, simply focusing on destination characteristics without taking underlying contextual influences into account would defeat the whole purpose of the study. Instead, in order to fully comprehend the matter, one needs to find out which visitor groups do rely on attribute-based decision strategy.

2.2.2 The concept of image

As was mentioned earlier in this section, image is based on destination's tangible and intangible elements as well as emotions it evokes. The first two form the cognitive component which is an antecedent of the latter and is associated with tourists' intention to return. (Beerli and Martín 2004, 658; Byon and Zhang 2010, 510, 513-514; San Martín and Rodríguez del Bosque 2008; 270, 274.) Therefore, image can function both as a concept dependent on its attributes as well as an independent variable affecting destination choice. This can be also explained graphically by placing image in between the final choice and its cognitive and affective elements as presented in attachment 4.

It is the abovementioned tangible and intangible elements that make up the bundle of characteristics attracting people but which may also slightly differ from one destination to another (Smith and Deppa 2009; 28, 30; Yoon and Uysal 2005, 45). Above all, they produce a 'benefit package' that has different utility to different tourists depending on their individual needs helping them to establish their choice (Tasci and Gartner 2007, 420). This is shown in attachment 4 as direct link between motivations and affective/cognitive components of image.

Another link that needs further discussion is the one which connects the above two components to the image itself. Expectations tend to be realistic to varying extent depending on quality of information tourist has at his or her disposal and is affected by such factors as e.g. domicile of tourist. This is manifested through differences in various information sources available and will be presented in further detail below. In addition to these, image has its primary constituent which results from visiting destination. As mentioned earlier in chapter 2.1.6, experience can be either deep or broad affecting TDM differently yet they both do affect to what extent the affective and cognitive components determine the perceived image as shown in attachment 4.

Most of the time, decisions are based on one or two major criteria which tend to remain stable over time. There are, however, other features as well being considered by tourists but which at are less emphasized. These may range from one to ten and are constantly affected by "new

inputs of information and with changes in psychological states of the decision maker". In case of both, they produce an enduring effect on choice in general although they do not have as much to do with particular destination. (Decrop 2006, 126.)

The exact composition of bundles may and must be adjusted, depending on research objectives and destination subject to image assessment. Based on extensive literature review, Beerli and Martín attempt to categorize image attributes into nine dimensions. These are natural resources, natural and social environments, general and tourist infrastructures, tourist leisure and recreation; culture, history and art; political and economic factors and atmosphere. (Beerli and Martin 2002, 659-660.) The detailed listing of each dimension's constituents is presented in attachment 3.

Peculiar to tourism is that, compared to other producs or services, destinations' image is shaped by wider array of sources. Tasci and Gartner identify those as supply-side, independent and demand-side further subgrouped into dynamic (controllable), semidynamic (semicontrollable) and static (uncontrollable). These sources thus rely on different types of image determinants, or agents, classified as overt induced, covert induced, autonomous, organic and self-induced. (Beerli and Martín 2004, 661; Byon and Zhang 2010; 510, 515; Tasci and Gartner 2007; 414, 422.)

Overt induced information pertains to conventional advertising carried out by industry professionals whereas covert induced involves use of celebrities and promotional material in order to evoke favourable associations with a destination. These are, to some extent, affected by independent image formation factors as the latter are out of destination marketers' immediate reach therefore forcing them to adjust their activities. (Tasci and Gartner 2007, 422.) Covert and overt induced image formation agents on the other hand may be directly influenced by marketers. As a result, their reliability as source of information is quite often questioned although other more independent agents tend to be manipulated as well. This is understandable to some extent as overt induced images often set unrealistic expectations towards destination causing disappointment following the visit. However, "because of astute efforts of destination marketers in developing skillful media relations, mutual exclusivity of organic, induced, and autonomous agents are practically nonexistent". (Beerli and Martín 2004; 661, 670; Chi and Qu 2008 626; Tasci and Gartner 2007, 414-415, 422.)

The last three image determinants are information disseminated by mass media, word of mouth and actually visiting a destination (Beerli and Martín 2004, 661). In case of autonomous

agents, depictions of natural disasters and other catastrophies tend to have stronger influence on the overall perception of destination characteristics – both related and unrelated to the event – although former are influenced even more (Tasci and Gartner 2007, 415).

2.2.3 Attribute performance

Theories on consumer behaviour generally acknowledge that individual elements of product/service affect satisfaction differently. The paradigm originated from Hertzberg's (1959) human resource theory and has subsequently evoked a variety of definitions – e.g. *order-qualifying* vs. *order-winning*, *utility-preserving* vs. *utility-enhancing*, *qualifying factors* vs. *vantage factors*. The original theory pointed out that different characteristics of workplace affect employee satisfaction differently which was later applied into different fields. (Smith and Deppa 2009, 29.)

Due to empirical evidence of image's influence on customer satisfaction following destination image → trip quality → perceived value → satisfaction → behavioral intentions path, there is reason to suggest that reverse relationship may exist as well. Since tourists evaluate trip quality based on comparison between their expectations and the actual performance, it is likely that these expectations result from image. As satisfaction can only exist when these expectations are being met, it can be further assumed that those elements that serve as precondition to satisfaction would also modify expectations. This is further supported by Chon (1991), Echtner and Ritchie (1991), Fakeye and Crompton (1991) and Ross (1993) who collectively agree that "evaluation of the destination experience will influence the image and modify it" (Chi and Qu 2008, 626). In other words, since there is causal relationship between destination image and expectations, destination image can be measured using same attributes which define satisfaction.

Since Hertzberg's theory, subsequent models have come up with several new approaches to categorize product related attributes. One possible way is to classify these based on core vs. psychological dimensions as proposed by Swan and Combs (1976). According to their findings, service consists of *instrumental* and *expressive performance*, where former is associated with product's *functional* properties and latter represents *experience-based* elements of service. Furthermore, instrumental dimension relates to pre-consumption evaluation whereas expressive elements have their strongest influence during the consumption stage. (Smith and Deppa 2009, 29.)

Attributes' influence on image perception becomes increasingly important during travel experience. Since tourists perceive destination differently as they become more familiar with it, there is clear connection between functional and intangible properties of destination and overall image. Even when taken separately from other elements, individual attributes partially affect satisfaction. As destination loyalty leads to positive recommendations, it is becomes vital for destination managers pay special attention to various constituents of image in order to gain aggregate arrivals. (Chi and Qu 2008; 625-626, 632-634; Yoon and Uysal 2005, 45.)

Vavra (1997) proposes Importance Grid in order to measure individual attributes' importance in relation to overall satisfaction with product or service. The model distinguishes between two types of attributes depending on whether they have *explicit* or *implicit* affect on satisfaction. Former definition relates to those elements which consumers consider to have direct influence on their evaluation of the product. Latter, on the other hand, encompasses those attributes which have an unconscious effect which only becomes evident when subject to statistical analysis. In addition, both explicit and implicit attributes can be measured using both scales which subsequently reveal whether results correlate or not. However, according to Smith and Deppa, discrepancies between stated and measured importance levels decrease as consumption unfolds. (Smith and Deppa 2009; 31, 33.)

2.2.4 Review of transportation elements

Several studies on destination satisfaction involve transportation as its key attributes. Despite different settings and methods used, the results indicate that tourists perceive it as an important element or their tourism experience. (Thompson and Schofield 2007, 137-138.) Even though some authors approach the attribute in more general terms referring to it as infrastructure, accessibility or logistics, the attributes studied eventually involve local transportation as one of the components.

In their research involving development of scale of destination image, Byon and Zhang suggest inclusion of infrastructure as a cognitive component based on their review of similar studies made on measuring destination image. The empirical data collected contains respondents' assessment of roads, airport and utilities under infrastructure as its main heading. (Byon and Zhang 2010; 516, 523, 525, 527.) Similar to the above, Chi and Qu measure convenience of local transportation as a constituent leading up to accessibility (Chi and Qu 2008; 630-631, 634). The practice is further supported by Narayan et al. who use accessibility of and condition of infrastructure at / on the tourist spots as the determinants of logistics. According to

their findings, logistics play significant role in tourist satisfaction leading up to positive word of mouth and repeat visits. (Narayan et al. 2008; 483-484, 487.) Finally, Pritchard's and Havitz's findings suggest that transportation is the most influential element of infrastructure judging from respondents' early responses when free elicitation technique[3] was used (Pritchard and Havitz 2006, 36).

Byon and Zhang measured perceptions of US citizens who had visited Washington DC, US using seven-point Likert scale over 32 factors. Chi and Qu, in turn, applied even broader research design measuring destination image, attribute and overall satisfaction and intention to return of tourists visiting Eureka Springs, US with use of combination of qualitative and quantitative techniques. Narayan et al. implemented SERVPERF technique targeting tourists visiting Kerala, India whereas Pritchard and Havitz utilized content analysis of free-elicited responses collected from tourists visiting state of Western Australia. Therefore, due to broad scope of different contexts and methods used, certain level of precaution needs to be applied when making further assumptions based on the above findings. Yet, the sheer amount of previous studies involving, in one way or another, transportation as an element of tourism consumption confirms the valididy of the thesis topic.

One way to distinguish different elements that relate to transportation service is to apply SERVQUAL. The framework was originally developed by Parasuraman et al. (1988) in order to measure customer satisfaction in service setting across five dimensions: i.e. tangibles, service reliability, responsiveness, assurance and empathy. In context of metro passengers' satisfaction in Montreal, Canada, Awasthi et al. identify 14 underlying componenets. These include: availability and quality of facilities and information, modern and maintained vessels, comfort, waiting times and reliable schedules, price, availability and extent of staff service, security as well as correspondence with individual passengers' needs (Awasthi, Chauhan, Omrani and Panahi 2011, 640). This has been further emphasized by several other independently conducted studies which, in addition to the above, were able to identify age and frequency of travel as conditional variables (Lazim and Wahab 2010, 100; Pantouvakis 2006, 416). However, Friman et al. (1998, 2001) also highlight negative incidents' stronger impact over satisfaction (Thompson and Schofield 2007, 139).

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[3] In free elicitation, respondents are asked to mention the attributes they perceive as being important to product/service. Pritchard and Havitz applied this approach in order to measure the significance of each attribute by gauging the order in which they were mentioned.

From the elements described above, comfort plays an increasingly important role on board seafaring vessels. Symptoms of discomfort, on the other hand, include headache, dizziness, stomach awareness, nausea and vomiting and in their severity depend on multiple factors such as age, gender, previous history of vulnerability to motion and weather conditions. A joint project funded by European Commission involving 11 experts from seven different countries classified these factors into three categories based on how fast they may alter. Motion and speed were identified as rapidly varying, internal intangible elements as slowly varying and design as fixed factors. Managing these becomes vital since not only do they affect passengers' evaluation of a vessel but affect the crew's performance as well. (Turan 2006; 3, 5, 9, 12.) However, other factors such as travel time, friendliness of staff, availability of seats, cabins, spaciousness, food, shops, port sevices and programs for children play an important role too (Lois and Wang 2005; 146, 149-150; Pantouvakis 2006; 406, 413, 416; Thompson and Schofield 2007, 139).

Fun and functionality are also important variables when assessing transportation quality. Waterborne transport is generally associated with leisure which, depending on an individual, has its own requirements for the combination of both. Tourists can be specified according to how much they emphasize the importance of either factor. In addition, individuals have different perceptions towards how well different means of transportation perform respective to their preferred fun/functionality ratio. (Gronau and Kagermeier 2007, 129-130.) Therefore, tourists may have different opinions regarding the amounts as well as importance of these factors.

In addition to the above, ICT plays an important role in passengers' experience. The fact is substantiated by "a survey conducted in 2003 researching Greek passenger shipping companies using websites". Both passengers and managers agreed that Internet would become the most important source of information in the future. The results have obviously been proven since then. As travellers resort to the most convenient means of information search, journey planning, booking, etc. irrespective of what these means are, tourism companies' ICT needs to live up to the expectations. Most importantly, when it comes to online environment, several decisions are involved – i.e. "to enter a website, to navigate, to purchase and pay. Therefore, decision making needs to be supported throughout these individual stages by taking into account passengers' various needs, language requirements, etc. Moreover, since tourism as an experience consists of variety of products and services, incorporating horizontal (inclusion of other means of transportation) as well as vertical (other tourism related services) IT solutions would offer high benefits for the passengers. (Dourmas, Doumi and Stavrinoudis 2009, 66-68.) Since accessing starting points of each route is considered as a quality element, one possi-

ble scenario where applying a vertical solution could work extremely well would be in thore cases where passengers are required to travel long distances to a port (Gronau and Kagermeier 2007, 131; Thompson and Schofield 2007, 139).

3 Methodology

After having produced the theoretical framework presented in the previous part, we are now ready to form certain assumptions and proceed to the next stage of research. What is most important here is that we now have a conception of what academic literature suggests as being the elements that influence choice of a destination. This enables us to take large amount of contexts into account in such way which will permit design and implementation of the best possible research method possible while counteracting the constraints.

3.1 Hypotheses

Following summary can be drawn based on what we already know. Destination choice is basically a function consisting of three components – namely destination image, external factors and, in case of combining other destinations to the journey, related purchaces. These components conjoin so that individual's mental representation of ideal destination is influenced by various external factors leading up to satisficing rather than optimal choice.

Similar to the above, collective decision making when travelling as a group of people forms an additional constraint being no more or less than a set amount of preferences working together as a whole. Thus, although many of previous studies approach groups as single decision making unit, this would be too naïve an approach taking into account what has been told before concerning group dynamics. If groups of people travelling together are treated as single response unit, it could fail to take into account the fact that not everyone in the particular group perceive the destination same way. Neither will it incorporate the possibility that for some, the whole journey would be more or less involuntary, as suggested by Decrop (2006). Moreover, even though these individuals may perceive the destination infavorably, they may still influence subsequent decisions of their friends, relatives, etc. through word of mouth based on their own experiences. In addition, depending on an endurance of their membership of a particular group, they can influence the decision dynamics in other TDM processes. Therefore, it becomes important to reveal opinions regarding destination image on a personal level.

In order to better understand what might be the sources of differences in opinions, a profiling based on environmental, personal and situational variables needs to be made. As described in the previous paragraph, interpersonal variables do not influence individuals directly but rather affect group decisions in terms of incitement towards 'diplomatic' solution. Therefore, it would serve far greater purpose to understand how different contexts might affect people's

individual predispositions towards a destination as the more appealing it is to more members within the same group the higher the chances of it being selected. Moreover, even for an individual, these contexts will evolve in time. Subsequently, focusing on the relationship between the independent variables (contexts) and dependent variable (destination image) will enable DMOs to better understand how to keep destinations appealing and induce repeated visits.

Image, as it was outlined in theoretical part of the thesis, consists of cognitive and affective components developed during pre or post-visit stages. A traveller evaluates destination differently based on his or her breadth of experience with travelling to various locations or deep knowledge about one resulting from length or amount of previous visits. The evaluation, in turn, is made on attribute and emotional level where the former consists of i.a. transportation and its various elements, as mentioned before. Perception of these cognitive and affective components, on the other hand, depends on person's own underlying motives based on lifestyle, emotions and personality related factors.

Even though cultural, social, interpersonal and situational variables' role in TDM is separate from factors modifying image perception, they can still influence image formation rather indirectly. Culture, for instance, affects how comfortable people feel in unfamiliar situations by shaping individuals' personality depending on uncertainty avoidance level, or risk aversion. Similar to this, culture – as a factor attached to specific market, has an influence on availability of information which works as a mediator between citizenship and perceived image. Finally, cognitive distance represents the last function in image formation as a result of internal and external factors combined.

A graphical chart of the concepts presented above can be found in attachment 4. Before moving on to description of questionnaire and preferred data analysis method, let's summarize the hypotheses once more:

- H1: The more favourably a destination image attribute (ferry) is perceived the higher the attractiveness of a destination (Helsinki and Tallinn)
- H2: Evaluation of an attribute depends on TDM variables
- H3: Evaluation of an attribute correlates with evaluation of its elements

3.2   Questionnaire

A combination of qualitative and quantitative sampling methods was chosen in order to obtain empirical data for the thesis. Such approach has become popular in tourism research considering its potential to increase quality and validity of data as stated by Bryman and Babbie (San Martín and Rodríguez del Bosque 2008, 267). The superiority of this method lies in its ability to diversify the components of whatever research design is used by extending what is known and revealing details that would had otherwise been left unnoticed. In addition, the fact that each destination possesses unique qualities and attracts different types of tourists further justifies the implementation of this particular approach. (San Martín and Rodríguez del Bosque 2008; 267, 274.)

Prior to conducting the research itself, Bryman (2006) recommends to decide on priority and order of the methods implemented (San Martín and Rodríguez del Bosque 2008, 267). In this study, a qualitative inquiry was conducted between first and second pilot tests in order to assist the formulation of the questionnaire. Twenty seven (27) randomly selected visitors of West Harbour, Helsinki were approached and asked to reflect on what they perceive as satisfying or dissatisfying when travelling on a ferry.

Comfort – in general and in terms of alternative to flying, on board temperature and seating as well as an alternative to driving and noise caused by other passengers – was mentioned by nine (9) respondents in total. Level of service, including service in foreign language and friendliness of staff, appeared as often making these two the most recurring attributes. Price in general along with price/quality ratio and expensive cafeteria was raised in eight (8) discussions thus being second most common topic followed by spaciousness, seating space and congestion mentioned seven (7) times respectively. Other important aspects were food and beverages on board – mentioned six (6) times, entertainment – five (5) times and travel speed – four (4) times. The characteristics mentioned three (3) times were atmosphere in general and atmosthere created by other passengers, cabins – including their location, appearance and availability of extra beds, and appearance of the vessel. In case of the latter, responses ranged from favorable to less flattering descriptions such as 'nice looking terrace' or 'degraded'. Safety and security, cleanliness, family-friendliness, luggage compartments and suitability according to personal needs were all mentioned twice (2). Check in, online booking, queues and on time service appeared once (1). In addition, one of the respondents offered a very affective response including watching water sprays and vehicles embarking/disembarking while another

perceived elements of journey as irrelevant compared to destination itself. The results of pre-liminary survey can be found in attachment 5.

The questionnaire was first piloted on DP students of hotel, restaurant and tourism management programme in Haaga-Helia UAS in the end of May. The corrections carried out were disposal of questions related to marital status and distinction between single and group travel-ers in favor of making an inquiry about type of household. Options related to level of educa-tion were modified to simply use the wording from 'Higher' / 'No higher education' rather than 'Academic degree' / 'Secondary level or below' in order to avoid confusion as well as to address potential differences in education systems. Question related to use of money was ad-justed to use five-point Likert scale instead of nine-item, nominal scale. Rather than simply asking whether a respondent had visited Helsinki or Tallinn before, the question was expand-ed to calculate the amount of previous visits as well. The item of the questionnaire where the respondents had to state which method of transportation (ferry/plane/helicopter) they were using to travel between Helsinki and Tallinn was disposed of as the context of the research was narrowed down. This was a consciously made decision as ferry traffic has by far the big-gest share of passenger numbers. Moreover, making an analysis of transportation components from ferry passengers' point of view can provide sufficient amount of insight that can be used in evaluation of Helsinki-Tallinn transportation link development scenarios. The initial plan to assess the components by using a nominal, multiple response / itemized rating scale hybrid was abandoned in favor of Likert scale. In addition, the question was also set in much simpler way. I.a. rather than writing a long introduction, the components were split in two sets with separate statements using the phrasing "travelling between Helsinki and Tallinn by ferry is…" and "ferries running between Helsinki and Tallinn are…". Also, the scale for evaluating attrac-tiveness of Helsinki and Tallinn as multidestination was changed from itemized to Likert type along with the phrasing of the question.

The second pilot test was carried out in the beginning of July in Katajanokka terminal. The results revealed that further adjustments had to be made concerning phrasing of instructions and statements. It was found that especially Russian speaking visitors were not used to filling out this type of questionnaire. Therefore, an additional instruction was added to Russian trans-lation to select an appropriate green box according to one's own personal opinion. Also, two statements needed correction to avoid confusion and fit better into language. I.a., the equiva-lent of "travelling between Helsinki and Tallinn by ferry suits my personal needs" was clarified in order to better reveal that question assessed expectations towards Baltic ferries in general and special needs related to cruise. The second statement, "before and during a trip" was

modified to specifically stand for any trip. Finally, a portion of instructions preceding the first part of the questionnaire was underlined as respondents tended to assume that the survey was targeted at satisfaction rather than expectations.

The final version of the questionnaire consisted of two parts with a total of 37 questions and multiple type of scales depending on a question's purpose. The first three sets of questions assessed the components of travelling by ferry as described in chapter 2.2.4 and as mentioned by respondents in preliminary survey as well as expected behaviour at the destination on a 23-item, five-point Likert scale. Use of numbers was avoided as it tends to lead to overuse of the extremes as suggested by Shulman (1973, in Kozak 2002, 223). The wording 'on board' was purposefully excluded from the first set in order to allow evaluation of the elements not necessarily experienced aboard. Some expressions in the first and second sets were adjusted in order to better suit the final questionnaire's format. The third set was included for testing the first hypothesis. I.a. should correlation between high rating for interest in travelling by ferry and importance of visiting Helsinki because of Tallinn exist, then connection between destination attribute and destination attraction in Twin-Capital context would be proven positive.

Second part involved questions related to situational, personal and environmental variables. In addition, the respondents were asked how frequently they travel by ferries in general in order to take into account their experience with this particular method of transportation as one of the factors that might lead to differences in perception. Questions 2 and 3 (how often do you travel per year? / have you visited Nordic or Scandinavian country before?) were targeted at determining the amount as well as quality of travel experience. I.a., taken together, the questions serve as an indicator of whether a respondent prefers to experience wide array of destinations or few in greater depth. Q4 accounts for possibility of respondent possessing a primary image of a destination as well as experience in terms of its depth. This question is vital to correct assessment of empirical data as there was no plausible alternative to contacting visitors upon their arrival. Furthermore, as tourism – just as any other industry – holds possibility of repeat purchase, the opinions of those who return need to be included separately. Although depth of experience can be measured both in terms of amount and length of visits, the former approach was chosen as the amount of visits should also indicate, at least to some extent, the overall length of stay. The set of questions related to behaviour prior and during the trip were added in order to distinguish between personality traits. The assessment was made based on how strongly respondents agreed with the following statements using five-point Likert scale similar to one used in the first part of the questionnaire:

- I prefer to plan the trip entirely myself (in order to measure a traveller's level of independence and allocentricity)
- I spend a lot of time choosing a destination (in order to assess level of careful planning and analytic approach towards destination selection and rationality
- I have strong interest in travelling (in order to evaluate level of involvement and predisposition to travel overall – i.a. rating on active vs. passive grid
- I spend a lot of money while travelling (inclination to prodigal behaviour)

An excessive typification based on characteristics as presented by Decrop in attachment 1. was left off on purpose in order to avoid questionnaire becoming too lengthy to complete, as stated by Brotherton (Brotherton 2008, 137). Nonetheless, the above statements can be used as such to assess extent of risk aversion, planning, information search and price sensitivity as well.

The final five questions were used to obdain relevant demographic data such as nationality, age, education, income and type of household. Since education and level of income can be classified as two separate personal variables the former being primary and the latter secondary, it was chosen to evaluate them separately. In addition, as these two may be regarded as sensitive questions, as implied by Brotherton, exact wording was avoided in favor of higher / no higher options for education and low, medium and high options for income (Brotherton 2008, 149. Moreover, as level of income tends to be relative to the country of origin, use of subjective wording in such way can provide more utility in making comparisons within a single market. Finally, family typification was carried out using closed, multiple response, nominal scale question asking whether a respondent had a spouse and/or children living in the same household. As the data was collected from passengers directly, this allowed for clarification to be made, if necessary, that the purpose was to make a remark if there were any children yet staying at home. In addition, four possible combinations (single, divorced or widowed; married or in a relationship; with or without children) covered quite exhaustively the majority of family types as presented by Decrop in chapter 2.1.6. keeping the questionnaire as easy as possible to complete. The final version of the questionnaire can be found in attachment 6.

3.3 Validity

Validity is concerned with consistency of research design and covers such aspects as accuracy and degree of success in assessing the research question. It considers such elements as solidity of theoretical background, design of the research itself as well as how thoroughly alternative

explanations to the results have been taken into account. According to general understanding, the concept consists of two levels: external and internal validity. These include face validity, criterion related validity, construct validity and content validity. (Colorado State University 2012.)

In this thesis, the structure follows a tri-dimensional approach common in tourism studies – especially those which are based on microeconomic models. Microeconomic models focus on explaining why tourists make certain decisions from the product/service performance point of view. Although the first models offered an oversimplified approach focusing on e.g. destinations' economic utility for the representative consumer – they have been subsequently expanded to cover other contextual elements as well. In this sence, the thesis offers a solid and thoroughly reviewed theoretical background by addressing multiple TDM variables including personality traits, travel experience, the role of an individual within a group as well as their functionality on different levels.

It is therefore justified to argue that the framework developed offers a broadly defined reference for empirical data collection, yet within well-limited scope. The role of individual TDM concepts and how they relate to formation of destination image have been analyzed in chapter 2 and visualized in the attachment 4. In other words, the conceptual model succeeds in clarifying the roles of image both as collection of its elements and as determinant affecting choice as well as distinguishing between different variables and position them according to their role in TDM process. The framework developed thus serves as a solid foundation for elaboration of what needs to be measured.

In chapter 3.2, we presented items of the questionnaire which assessed quality and service elements aboard ferries, willingness to use this transport mode in order to visit Tallinn as well as respondents' background. The items used thus covered multiple facets of image in accordance with earlier studies and were compliant with the dimensions of transport identified by the source literature used and preliminary interview. These were tangibles, service reliability, responsiveness, assurance and empathy along with fun, functionality and ICT factors. As some of the literature used approached the topic from slightly different context, the exact phrasing of the questions had to be modified in order to fit the purpose of evaluating ferries. These were i.e. availability and quality of facilities (rephrased as ferries being in good condition and well equipped) and reliability of schedules (rephrased as ferries running on time). In addition, a compromise needed to be made between thoroughness of the measurements used and length of the questionnaire in order to ensure sufficiency of the response rate. Therefore, this may

have affected construct validity depending on how well the objectivity in formulating the questions was maintained. In order to minimize the effects, the questionnaire was piloted twice as well as expanded using qualitative method prior to commencing the primary sampling.

Finally, the Likert scale used in most parts of the questionnaire is supported by findings made by Jenkins (1999, in San Martín and del Bosque 2008, 269) who points out its popularity in measurement of various image attributes. It enables to encapsulate the extent to which the respondents agree with specific statements capable of providing more precise assessment of the elements studied compared to e.g. nominal scales. However, the scale is limited by what author chooses to measure, therefore excluding elements that may be important to some travellers. Therefore, it offers only as much detail as what is being pursued although it is superior in terms of simplicity compared to open ended question formats.

The research design used in this thesis can be considered to provide an extensive approach to the topic studied. It takes into account several aspects such as breadth of theory, its conection to empirical data as well as its purposefulness for analysis. The theoretical framework offers clearly defined utility in the context which is further supported by empirical methods chosen. Although the design holds some aspects which could be further improved, the overall approach sufficiently addresses matters related to validity making a solid foundation for the remainder of research.

What comes to generalizability and transferability of the subsequent results, they should be treated as context specific. As bundle of characteristics varies from destination to destination, there is no quarantee that duplicating the design would work. This becomes clearly evident considering the infrastructure between Helsinki and Tallinn operated i.e. by ferries which resemble commuter rather than leisure transport more. On the other hand, methods used can be utilized in other destinations as well provided that the questionnaire is adapted to fully represent the particularities of transport and the destination.

4 Results

The sampling was conducted in July 2012 using questionnaires in Finnish, English and Russian in all three Port of Helsinki terminals which have daily connection to Tallinn: i.e. Katajanokka Terminal, Makasiini Terminal and West Terminal. These locations were chosen specifically as they offer an easy access to population with various environmental, personal, interpersonal and situational backgrounds. The respondents were approached randomly since the use of main probability-based sampling strategies was unfeasible both due to movement of passengers prior to boarding and inability to access passenger database or precode the items. Despite this, it was assumed that due to the nature of passenger terminals, none of the TDM variable characteristics would be over-emphasized given that the selection would not follow any pattern.

The questionnaires were personally administered to visitors of the abovementioned terminals excluding residents of Helsinki region and Tallinn as this approach decreases possibility to misinterpret the questions and improves response rates (Seddighi and Theocharous 2002, 480). A total of 94 questionnaires were collected out of which 86 were filled out completely. Of those 86 respondents who returned appropriately filled questionnaire, majority were travelling for leisure purposes whereas only eight were visiting friends or relatives. In addition, over half were domestic passengers living outside Helsinki region. When analyzing the results, those who gave their level of independency score 3 or below were treated as one group since altogether only 19 gave such response. Similar to this, those who used ferries several times a year, nationalities other than Finnish, Russian and Estonian as well as partners with or without children along with partners with or without spouse (due to small number of single parents) were considered as one group. It should also be noted that majority of Estonian respondents were travelling for business purposes (50%) or to visit friends and/or relatives (42%) which may have inflicted the results presented in chapter 4.3. The complete statistics of the respondents can be found in attachment 7.

Based on the closeness coefficient calculations explained in further detail in the following chapter, strong correlation between expectations towards travelling by ferry and willingness to visit Tallinn confirms the first hypothesis. In other words, the more favourably ferry travel is being perceived, the more likely it is that a traveller considers the city as an important attraction. Expectations towards ferry travel in turn rely, to a degree, on evaluation of their service and quality elements suggesting that correlation indeed exists confirming the third hypothesis. Not all elements affect the perception equally, however, with variances existing both between

the elements themselves as well as degrees of willingness to travel by ferry. That is to say, some elements seem to influence the opinions more than the others to a degree where, depending on individual elements' performance, those who gave lower rating could be even more predisposed to travel than those who gave more favorable response. Furthermore, differences exist among some of the tourist groups which only partially confirms the second hypothesis. The respondents who did give the most positive evaluation were Russians, first time visitors, occasional passengers, psychocentric travelers, people with high level of income and singles.

4.1 Fuzzy TOPSIS analysis

Fuzzy logic is a decision-making tool based on neural networks of a human brain. Originally inspired by studies in physiology and psychology, the approach attempts to replicate more complex problem solving abilities into artificial intelligence. The idea is virtually based on an assumption that conventional dual logic, where an input can produce only two possible outputs – either 'true' (1) or 'false' (0), is insufficient to model complex perception and cognition of human mind. (Moutinho 2000, 116-117; Zani, Milioli and Morlini 2012, 439.) As opposed to traditional binary functions of computerized systems, fuzzy logic enables introduction of so called intermediate or – hidden layers – which enable encapsulate the in-between points of the two extremes with far greater precision.

For instance, let us assume a traveller x who makes a final destination selection based on the evoked set of n number of criteria. Each criteria can be assessed on a scale that fits the purpose, however, implementing a standard binary approach would allow only two possible outcomes. That is to say, if one of the criteria was distance then all options falling outside of a specific range would be excluded from the evoked set. Although being markedly simplistic, the example provides a concrete insight of what would happen if TDM would be based solely on dual logic.

The approach is based on fuzzy set theory originally introduced by Lotfi Zadeh in 1965 and which has since then been applied in tourism over variety of subjects, including tourists' perception of product attributes (Moutinho 2000, 117; Zani et al. 2012; 440, 446). The principle is simple and can be described easily by using examples found from everyday life. For instance, length of a person is a relative concept and would vary depending on who makes the evaluation. Therefore, we can assume that the results from asking the same question would slightly differ between respondents.

In order to account for such discrepancies in evaluation between the observants, each degree on an itemized scale needs to be assigned its own truth value, i.a. level of possibility using real numbers and bound by a chosen interval – e.g. 0 to 1. As a consequence, the items become measurable relative to the extent they coincide with e.g. proposition or statement and permitting a situation where "everything is a matter of degree or, figuratively speaking, everything has elasticity". (Jantzen 1998, 4, 13, 27; Zani et al. 2012, 439.) In other words, properties of a measured object are allowed to gradually increase or decrease along the scale predefined by values chosen rather than making an abrubt transition when reaching a certain threshold point as in dual logic (Jantzen 1998; 4-5, 18).

The truth value of a proposition is bound to a *set* which can also be defined as numerical equivalence of the former. For instance, by presenting a statement "travelling between Helsinki and Tallinn is fast" we automatically choose to measure the variable relative to that particular assumption. Thus, each item on a five-point scale needs to be assigned a specific value between 1 and 0, depending on the extent it matches the statement. Truth value, in turn, determines the *membership grade* of the linguistic rating in a set along a linear graph defined by membership function. Series of items which may or may not be part of a particular set are thus labeled *members* and form a *universe* which can include specific values depending on a measurement unit chosen. These can be either numerical or non-numerical, with *term sets* including i.e. such words or phrases as 'strongly agree' and 'strongly disagree'. (Jantzen 1998, 4, 24, 27; Zani et al. 2012, 441.)

There are several considerations which speak for implementation of fuzzy logic in this research. First, it offers a better solution for analysing data which lacks, either partially or completely, quantifiable information as in this case where something as vague as destination image has been studied using subjective terms to evaluate its components (Awasthi et al. 2011, 637-638; Zani et al. 2012, 440). Rather than assuming each rating having a fixed impact on the results, it enables to capture variances in people's perceptions by adding a degree that determines an item's correspondence to a statement it measures. Since fuzzy logic virtually permits multiple levels of ratings to be present simultaneously, it artificially aggregates empirical data capable of duplicating "intuitive, trial-and-error thinking that marketing managers typically require" (Jantzen 1998, 18; Moutinho 2000, 117; Zani et al. 2012, 446). In addition, the meth-

od has been subject to trial in several academic publications[4] studying similar topics and using similar research design as in this thesis, including sample size. This is in accordance with the argument presented by Brotherton who states that previously validated methodology serves as a sound standing point for justifying implementation of an analysis method chosen (Brotherton 2008, 108).

In their own research on metro lines in Montreal, Awasthi et al. implement fuzzy TOPSIS approach in order to distinguish the line with best service quality performance. The method is based on choosing the alternative with fuzzy ratings closest to the best overall score and furthest from the poorest (Awasthi et al. 2011, 639). In this research, the approach had been adjusted in order to test the hypotheses. I.a. if ferry link is indeed capable of affecting destination image then full agreement with the statement "I would like to visit Tallinn by ferry" would prove to be the best alternative and vice versa. Accordingly, conducting sensitivity analysis based on level of agreement with the above statement rather than scores obtained from each individual metro line allows to determine which attributes influence perceptions the most. The results can be then evaluated by taking into account environmental, personal and situational factors. The numerical values obtained are presented in attachments 8 and 9 and following the stages presented below.

- Encode the statements in part I of the questionnaire (S1-S23) and assign triangular fuzzy numbers for each linguistic variable: (fully agree 7,9,9), (agree 5,7,9), (neutral 3,5,7), disagree (1,3,5), fully disagree (1,1,3)
- Calculate aggregate fuzzy weight for each statement using the equation: $1/88 \times (L_1+L_2+\ldots+L_{88}, M_1+M_2+\ldots+M_{88}, U_1+U_2+\ldots+U_{88})$ where L, M and U are lower, middle and upper bounds of fuzzy number and subscript designates the respondent
- Calculate fuzzy values for each statement according to level of agreement with S22
- Convert the fuzzy values obtained into comparable format by dividing them by upper bounds of aggregate fuzzy weights
- Apply the factor loading for each statement by multiplying the converted fuzzy values by aggregate fuzzy weights and indicate the lowest and highest bound value for each statement

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[4] For additional reference, please review following articles used as theoretical background for this thesis. Awasthi, A., Chauhan, S., Omrani, H., Panahi, A. 2011. A hybrid approach based on SERVQUAL and fuzzy TOPSIS for evaluating transportation service quality. Lazim, A., Wahab, N. 2010. A Fuzzy Decision Making Approach in Evaluating Ferry Service Quality.

- Calculate closeness coefficients in order to rate each level of agreement with S22. Closeness coefficient is a numeric value representing distances to both highest and lowest bounds obtained with higher scores suggesting better performance. The result is calculated by dividing the distance to lowest bound by sum of distances to both bounds. The equation for calculating the distances is:

$$\sqrt{\frac{1}{3}[(L_1 - B)^2 + (M_1 - B)^2 + (U_1 - B)^2]}$$ where L, M and U represent lower, middle and upper bounds for each statement and B stands for lowest or highest bounds overall respectively. The equation is repeated and added if necessary.

- Conduct sensitivity analysis for statements S1-S21 with lowest (1, 1, 3) aggregate fuzzy weights while assigning highest (7, 9, 9) fuzzy weights for each statement individually

4.2   Role of ferries as destination attribute

The appeal of ferries was tested by determining whether positive perceptions towards these could increase Twin-Capital's attractiveness and possibly help the destinations to increase their tourist arrivals. This was done first by asking the respondents whether they wanted to visit Tallinn by ferry and then by assessing whether the city was seen as an important reason to visit Helsinki. Eagerness to use ferries as the means of transportation would subsequently reveal if these were evaluated positively while the second question would indicate if Twin-Capital could provide added value. Hence, correlation between these two would indicate whether former affects the latter.

The primary aim of the analysis was to see if ferries can be considered an attribute capable of reinforcing Twin-Capital's brand image. This was achieved by assessing the aggregate responses to the latter question depending on level of willingness to travel by ferry. The results were obtained from closeness coefficients for each rating with values closer to "1" indicating the aggregate truth values being relatively closer to the uppermost limit of the highest truth value accross all rating levels. The closeness coefficient values from full agreement with willingness to visit Tallinn by ferry to the lowest were 0,639; 0,568; 0,448; 0,350 and 0,181 respectively and can be found in attachment 8 as well.

This indicates strong correlation between the two factors assessed based on differences in responses. The results prove ferries being capable of affecting Twin-Capital's brand image and confirm the first hypothesis. The results are in line with findings from previous studies meaning that phenomena applies in Twin-Capital context as well. It is possible, however, that the

low closeness coefficient values for the last two ratings may be linked to the extreme aggregate truth values being overrepresented as only five respondents either disagreed or fully disagreed with the assessment criteria. Yet, the sufficient amounts of respondents for the first three rating items validate the remainder of the declining trend.

4.3 TDM variables' influence over the assessment

It is necessary to consider differences in evaluation of destination characteristics between different visitor segments as well, as image perception depends not only on its constituents but on the profile of the assessors as well. Six TDM variables were selected for closer inspection based on noticeable differences in the responses among the respondents: more specifically, previously held image, personality, experience with waterborne travel, nationality, income level and household type. The variables were chosen whenever discrepancies could be seen from assessment of attractiveness of visiting Tallinn by ferry between the representatives of the specific variables. A sensitivity analysis was then conducted in order to determine which quality and/or service elements impact the evaluation of the attribute most.

In this analysis, responses were divided based on visitor profiles rather than ratings as in previous step. This produced closeness coefficient values which were not used for identification of correlations, however. Instead, these were applied in order to evaluate the impacts of each individual element. The technique used was to artificially increase the aggregate fuzzy value for each of the criteria one by one while giving lowest values for the remaining twenty. By adopting this approach, the resulting closeness coefficient values were are able to identify which elements are the most crusial in order to achieve best possible performance. The details are presented below.

The respondents visiting Helsinki for the first time gave clearly the highest ratings to their willingness to travel by ferry as can be seen from figure 2 on the following page. Those who were coming for the 1-3rd, 4-9th or 10th time and beyond, on the other hand, gave average ratings of 4,55; 4,4 and 3,3 respectively emphasizing the role primary versus secondary image has on image perception as indicated in attachment 4. This supports the theory that the more familiar visitors become with destination – the more realistically they perceive it.
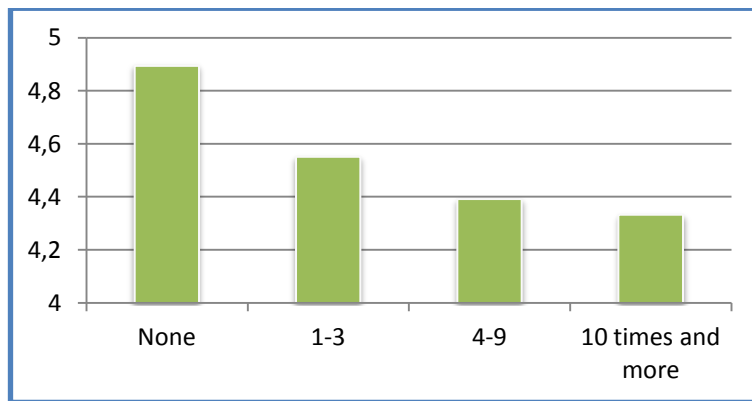
Figure 2. Experience: willingness to travel by ferry based on the amount of previous visits to Helsinki and/or Tallinn.

Based on closeness coefficient analyses it seems that facilities aboard the vessels constitute the most important element for people visiting Helsinki or Tallinn for the first time as well as regular travelers between the cities. Suitability for children emerged as valued criteria for the former group as well. Shopping and atmosphere tend to be the most influential elements for more or less frequent visitors. The reason behind the differences in ratings given is likely to be related to the fact that regular travelers tend to be also those who come from Finland, Estonia or nearby countries. Therefore, they are less dependent on covert and/or overt induced images thus holding a more realistic perceptions towards travelling by ferries overall.

Level of independency is another variable worth notice with those travellers who are more reliant on services of a tourist agent giving higher evaluation of the attractiveness of travelling by ferry. The respondents who assessed their own level of dependency as medium or lower gave their willingness to use ferry to visit Tallinn an average rating of 4,6 – whereas those who assessed marked themselves as highly or very highly independent gave ratings of 4,4 and 4,3. The results can be seen from the figure 3 below.
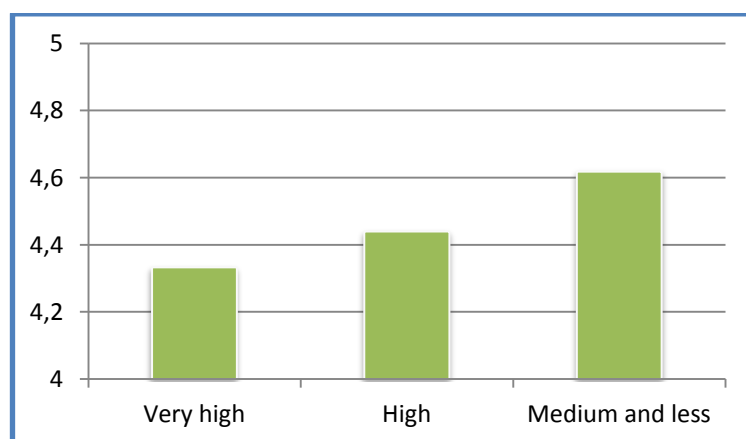
Figure 3. Willingness to travel by ferry based on independency level.

As mentioned earlier in this research, level of independency indicates representative tourist's allocenticity and is related to his/her personality affecting what motivations serve as drivers of tourism consumption as visualized in attachment 4. In addition, many of the products in tourism and hospitality industry favor those who are less independent as they are primarily targeted towards tour operators for the benefit of those who opt for packaged holidays. This can explain why less dependent travelers consider travelling by ferries more inviting. Frequency of service tends to be important factor for most independent and dependent travellers. In addition to these, former seem to value price, appearance of the vessels and suitability for children. These may be likely to result from higher price sensitivity and desire to travel at any time, among other things. Comfort plays an increasingly strong influence on overall evaluation for moderately independent tourists suggesting high regards towards the criteria while retaining freedom to make travel arrangements themselves.

Occasional ferry passengers tend to rate attractiveness of travelling by ferry slightly higher compared to more frequent users of the transport as seen in figure 4 below. Those who travel once per year or less gave an average rating of 4,4. The respondents who use ferries on a more regular basis gave ratings one tenth lower on average and were assessed as one group as their share of sample size individually was only minor.
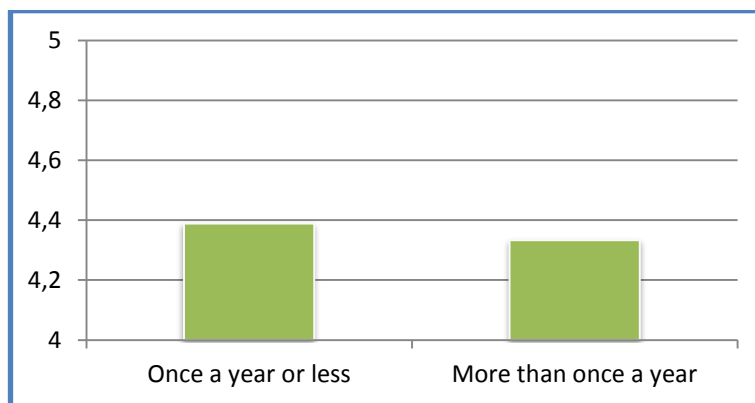
Figure 4. Willingness to travel by ferry based on frequency of use.

Frequency of travel can be deemed as conditional variable affecting evaluation of transport elements as suggested in chapter 2.2.4. It therefore influences perceived image from within, contrary to other variables discussed here. As this is directly related to how individual evaluates transportation and its elements, its role within the conceptual model is reflected as characteristic of destination's infrastructure affecting the choice depending on visitors' personal preferences.

Fun factor and comfort emerge as the most important determinants for the first group while speed of connection, punctuality and frequency of service being valuable for the second. In case of the latter, the determinants are most probably related to the fact that all of the respondents travelling for business purposes fall within this category. On the other hand, fun and comfort are natural criteria for those who use ferries as the means of transportation less often.

From all the respondents, Russians gave notably higher ratings to ferries overall, followed by Estonians and other foreign groups as visualized in figure 5 below. Finns gave lowest assessment while valuing price as the most important factor along with Russians who also appreciated spaciousness. The result goes in line with assessment of price criteria which received second lowest rating among the group despite wide distribution of income levels within. This suggests higher price sensitivity among Finns confirming the findings from 2010 Hotel Price Index report (Taloussanomat 2010). It also suggests that uncertainty avoidance level identified in conceptual model in attachment 4 is not the only link connecting culture and personality. Russians gave low rating for this element as well, yet here the price level seems to function as satisfier affecting overall evaluation only if closer to the ideal. Estonians valued the appearance of the vessel while comfort seemed to matter for the remainder of the respondents.
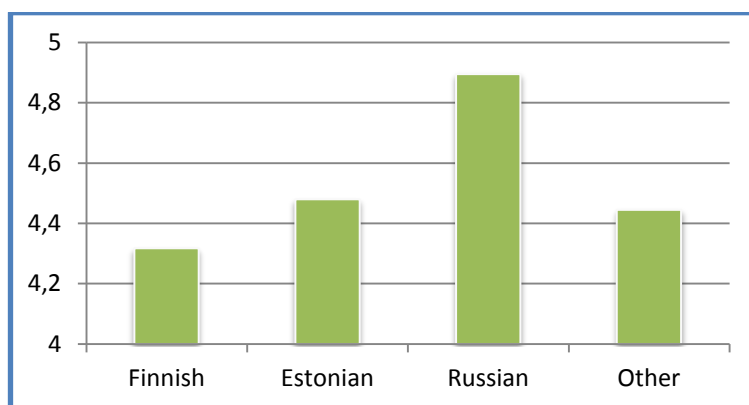
Figure 5. Willingness to travel by ferry by nationality.

Income plays an evident role in evaluation of ferries by increasing their perceived attractiveness towards higher levels as indicated in Figure 6 on the next page. The result follows the assessment of price level of ferry travel further emphasized by criteria's perceived importance. As this variable affects TDM through tourist's motivation to travel by indirectly influencing his/her lifestyle as shown in attachment 4, it influences the extent to which quality and service elements aboard are perceived enjoyable.
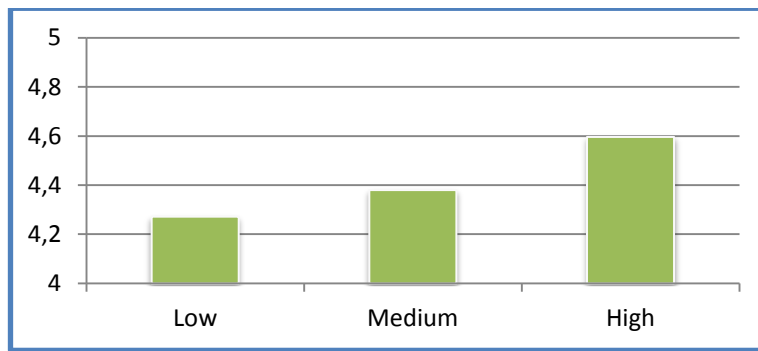
Figure 6. Willingness to travel by ferry by level of income.

Entertainment and good shopping oppourtunities are the most significant elements for those with lower levels of income along with the latter being significant factor also for tourists with salaries falling within the mid-range. In addition, this element tends to satisfy the respondents less the more financial freedom they have – possibly due to physical limitations of the vessels in terms of provision of the service. Same goes with the cabins with lower expectations to-wards their quality seemingly affecting the perceptions.

Type of household is another lifestyle variable affecting travellers' perceptions with those not being in a relationship rating ferries slightly fore attractive compared to couples and families with children as shown in figure 7 below. This could be the result of parents perceiving ferries less family friendly, although for them the criteria is not the most crucial. Instead, regularity of service seems to be the most significant factor for respondents with children while travel speed receiving highest weighting among couples and spaciousness among single travellers.
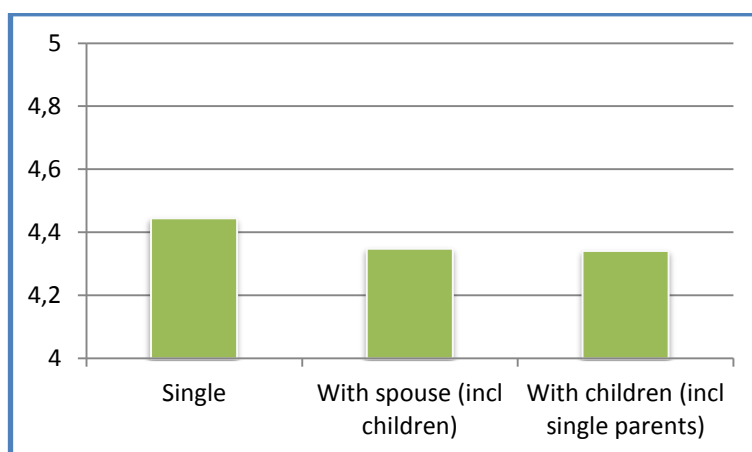
Figure 7. Willingness to travel by ferry determined by type of household

This suggests parents value freedom to schedule the journey to suit the needs of their children while those who travelled with partner and gave low ratings for the fun factor pointing out towards the joumey itself being an unnecessary element of the trip. For them, getting most

out of the experience means arriving at the destination in shortest time possible. Singles, on the other hand seem to appreciate their privacy, perhaps due to travelling alone and seemingly enjoy ferries superiority compared to other means of transport in terms of spaciousness. They also perceived this criteria in more positive light in general which might suggest that they are content with relatively less space.

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5 Discussion

Image of a destination is a complex entity consisting of multiple layers and is sensitive to characteristics of the tourists. No individual traveller is alike and perceived attractiveness of a destination is affected by numerous constraints and variables. In addition, people approach tourism decision making differently depending on their preferences towards planning itself. To complicate matters further, TDM is partially influenced by range of situational factors separate from both destinations' and tourists' characteristics making destination marketing a ramarkably challenging task as these are out of DMOs direct influence. Thus, success of a destination is far from being determined by one single component but rather by strong performance overall. However, strong correlation between willingness to travel by ferry and Twin-Capital's brand suggest that transportation needs to be regarded as one of the characteristics which, combined together, affect its value.

The interdependency between Tallinn as an attraction and evaluation of ferries, however, justifies the inclusion of tourists as an impostant stakeholder groups whose needs should be considered. Therefore, it is reasonable to suggest that both domestic as well as foreign visitors' opinions need to be taken into account if new means of transport connection between Twin-Capital cities are to be developed. The exact extent to which they would affect perception of brand image depends, however, on an individual traveller and several personal and environmental factors.

It is therefore clear that no unified solution will work if transportation is to be used as the means to increase the Twin-Capital's brand value. This will definitely require implementation of tailored marketing techniques in order to meet the expectations of different tourist groups. However, development of transportation between Helsinki and Tallinn is necessary in order to increase the perceived benefits of visiting either of the destinations. Practise shows that joint destination marketing strategies are capable of providing much more value for visitors compared to what can be achieved without doing so. With combined industry turnover in Helsinki and Tallinn exceeding 8 billion €, harnessing transportation as one of the solutions to branding collaboration should be exploited.

This calls most importantly for close co-operation between both local DMOs, regulatory bodies, transportation providers as well as other stakeholders involved in planning and development of tourism across the border. According to Fyall and Garrod, the most crucial inhibitors of successful tourism collaboration can be deeply rooted individualistic approach towards

destination marketing and mistrust, political and economic excuses as well as insufficient government support and funding. Reluctance towards adapting more partner-like approach may also originate from more successful destination considering co-operation as something that would mean giving up its achievements. (Fyall and Garrod 2005; 290, 302.)

The latter may prove to be particularly true at the initial stages of developing Twin-Capital's brand image. With Helsinki's tourism industry accounts being roughly seven times bigger in terms of value compared to that of Tallinn, it would be somewhat naïve to think that the proposal would be adopted without any friction. Judging by numbers alone, it might look that Helsinki is in a more mature stage of tourism development compared to Tallinn, yet the limits are far from being reached so far hence common brand could offer a channel for growth. This can prove to be particularly beneficial for both destinations as neither has shown success in retaining visitors so far. With only minor amounts of travellers returning for the 2nd, 3rd and 4th times, there is significant growth potential in targeting these tourists by offering them a multidestination product (Nordic Innovation Centre 2008, 28).

Obtaining sufficient funding for destination marketing and tourism development presents another challenge at the present as well. Fortunately, the current governing body of Helsinki acknowledges the importance of the tourism sector and has included it in various contexts in the budget proposal for the years 2013-2015. These include i.a. promotion of international scale events, giving support for the private sector and tourism research, improvement of sea based product offerings and acknowledgement of tourism as important and growing industry as well as its need for R&D. (Helsingin kaupunki 29.10.2012; 27, 31, 34, 73, 103, 144.) On the other hand, similar publication of Tallinn publicly available on the city's webpage does not explicitly cover this which is somewhat disappointing. With collaboration being not merely an additive in current marketplace but an indispensable means to survive – especially in such complementary product based industry as tourism – it is imperative that local DMO receives due funding as a prerequisite to further development. Any project related to transportation link development would be likely to require at least some financial participation on local tourist bureaus' side. However, such approach where funding of a governing body is unsecured or being effectively hidden in the rest of the agenda can likely hinder or utterly prevent participation and necessary commitment to joint destination marketing.

In this sense, the role of Tourism in Twin-Capital project in reshaping decision makers' attitudes can not be overemphasized. The initiative can facilitate co-operation in tourism education and R&D as well as bring these two cities closer as well as help the governing bodies to

realize the need for collaborative competition for the benefit of the industry in both destinations. The information produced by the project can assist in taking the needs of tourists visiting Helsinki and Tallinn better into account and improve the attractiveness of both cities. On the other hand, the role of tourist offices "as a strong 'unifying force' that is able to discourage the conception of splinter groups, which [...] can frustrate or otherwise oppose destination-wide strategies" would remain (Fyall and Garrod 2005, 291). However, Tourism in Twin-Capital should – in addition to current provision of market analyses – focus on promoting significance of Helsinki-Tallinn transport connection as facilitator of collaborative competition along with the elements related to it.

5.1   Transport Link in the Future

Waterborne transportation in Gulf of Finland is facing numerous challenges. Intensified competition between the operating shipping companies, increasing fuel and sulphur/CO_2 emission costs, decreasing profit margins from tax-free sales as well as lack of novelty all suggest that transportation needs to be developed (Hilmola 2012; 21, 23-25; Similä 22.5.2006, 14). On the other hand, changes in consumer demands and preferences, increasing passenger numbers and new target markets will, in turn, force ferry operators to modify their business models and offer new tariffs. With passengers becoming ever more experienced and educated wanting to travel with the family and stay in the destination longer will bring the pressure to offer new alternatives capable of transporting more people in shorter amount of time in a tailored manner. (Uudenmaan liitto 3.7.2007, 48-49.)

It is likely that the ferry industry will become even more concentrated in the near future with 2-3 operators remaining on the route (Johansson 2007, 57). Faster connection currently provided by Linda Lines may very well disappear following SuperSeaCat and Nordic Jet Line which suspended their services in 2008 due to intensified rivalry between ferry companies and recession (Helsingin Sanomat 2008; Iltalehti 2009). On the other hand, arrival of new ferries on the route in 2007/2008 as well as Eckerö Line's new vessel later this year should meet the price and quality demands – at least for a few years to come (Eckerö Line 2012a; Johansson 2007, 61; Viking Line 2012b).

In this sense, the arrival of M/s Finlandia is likely to bode well for the attractiveness of the ferry route – at least on a short term and especially for regular and independent visitors. Moreover, the effect may become further emphasized by Eckerö Line's low price level which would provide additional value sought by the latter group. However, the general price level for

travelling between Helsinki and Tallinn can also increase should number of shipping companies operating the route be reduced. According to Porter, less intense rivalry between competitors suggests less pressure to keep the costs and, subsequently, fares low as well as determination to differentiate (Porter 2000, 20). Should this occur, it would reflect negatively in more price sensitive groups such as independent travelers and domestic visitors. In addition, this would reduce need for innovation and offer less novelty meaning that individual preferences would not be taken into account effectively enough. Fewer operators on the route could potentially mean also less regular connections as well as cause vessels to become more crowded being an unwelcome change for business travellers, Russian visitors, families with children and single tourists as well as independent travelers. This will inevitably put pressure on Helsinki and Tallinn's tourism bureaus to ensure that the needs of these target groups would be taken into account also in the future.

Whether or not the ferry route will become passenger or cargo oriented has been subject to some debate recently with general opinion inclining more towards the latter (Johansson 2007, 61). This is only emphasized by the fact that due to Helsinki and Tallinn's remote location, development of the link solely from travellers' perspective can not be fully justified. With the current trend showing a continuing increase in transportation of freight vehicles, it is likely that this will gain ever more influence on the route in the future. In this light – and due to intensifying environmental regulations – railway tunnel between Helsinki and Tallinn could once become a viable option. (Hilmola 2012, 26-27; Terk et al. 2012, 27.) Despite plans to lobby the project on the EU and local government level, the scenario is being currently approached mainly from cargo point of view, however. Even if the tunnel would not be built, increasing amounts of freight would eventually force cargo and passenger vessels to operate independently of each other (Terk et al. 2012, 16). In either case, current ferry operators would be given more room to develop their business models based on passengers' needs. Providing passenger access through the tunnel, on the other hand, would create a strong incentive for the shipping companies to renew their marketing strategies as it would become a viable substitute.

A tunnel connecting Twin-Capital cities would offer a prominent alternative compared to e.g. ferry route with shorter travel times and more reliable service providing significant benefits for the tourism industry. Improved connection can better facilitate visiting both destinations and, in turn, help to drive integration of the region further. Participation of both cities' DMOs in planning and lobbying stage of the initiative is therefore crucial as it also needs to serve as an attraction for the visitors to travel to both destinations. This would be especially important in

Estonia where general interest towards the project tends to be lower compared to Finland (The Estonian Institute for Futures Studies, ASI Consult OÜ 2008, 23).

5.2 Limitations and suggestions for further research

The research along with fuzzy TOPSIS analysis has proven the assumption that transportation can serve as Twin-Capital's attraction and that it needs to be focused on whether joint branding is to take place. The strength of this approach lies in its ability to provide accurate preliminary results especially suited for initial purposes and for pure research "designed to contribute new thinking or knowledge to an existing field of enquiry" (Brotherton 2008, 14). Especially so where an influence of one destination attribute needs to be assessed. However, further studies would be recommended as they could provide deeper understanding of various elements of Twin-Capital's brand image as well as their relative importance.

5.2.1 Limitations regarding the analysis method chosen

The most important challenge when adopting fuzzy TOPSIS as preferred tool for analyzing empirical data lies in its utility itself. While it has been proven to be a reliable method in tourism research by several authors, its accuracy compared to more orthodox methods is inevitably lower. As it permits use of small sample sizes, deriving conclusions which would address such issues as e.g. transportation's role among other elements of destination image would be questionable.

One of the methods preferred for such analysis would be multivariate Logit model applied by e.g. Seddighi and Theocharous (2002) as it allows taking multiple TDM variables and image attributes into account simultaneously albeit assessing them in conjunction. In addition, qualitative research in terms of interviews as well as better segmentation of the respondents could shed more light on what exactly do passengers seek from their journey between Helsinki and Tallinn.

Nonetheless, in this research the decision to use fuzzy TOPSIS was purposefully made in order to overcome limited resources available. It was deliberately planned from early on to focus on making a thorough preliminary assessment instead of broad but superficial analysis. In this sence, it can be argued that the thesis has succeeded in producing solid set of conclusions for further use. Therefore, provided there are sufficient temporal and human resources available for follow-up research, the data obtained would prove to be highly valuable.

5.2.2 Expansion of the scope

Likewise, contacting prospective visitors who have not yet visited neither Helsinki nor Tallinn would be of great benefit offering additional insight on how reliance on secondary and/or induced information affects destination perception. As it was mentioned early on in this thesis, experience plays key role in formation of reliable expectations. Therefore, expanding research to cover tourism generating markets would most probably reveal differences between regular visitors and differences related to proximity of the domicile. This would be an ambitious yet very valuable project which, unfortunately, was not feasible to carry out this time due to lack of temporal and human resources.

Decrop also suggests that differences may exist among those who prefer to travel either on or off-season in order to avoid or maximize social encounters. This may, depending on study method chosen, distinguish between extrovert and introvert travelers. What could potentially corrupt the data collected, however, is that if asked directly, respondents may exaggerate how actively they seek social encounters while travelling. On the other hand, collecting empirical data during off season does not necessarily take into account situational constraints. Therefore, implementing both methods together would be suggested.

5.2.3 Expansion of the context

Finally, despite comprising only small share of total passenger numbers, extending the survey to cover airborne passengers as well could expand and provide more precise understanding of strengths and weaknesses of the transport connection. It would be also interesting to learn which tourist groups are most likely to be influenced by the attribute, either positively or negatively, and which take neutral attitude towards it by e.g. using an importance grid analysis. However, some caution needs to be taken, as suggested by Pritchard and Havitz, since results may vary between different assessment methods used (Pritchard and Havitz 2006, 27). In this research, different segments were compared based on differences in perception of ferry route rather than conducting an analysis of correlation between the latter and willingness to combine trip to Tallinn/Helsinki.

5.2.4   Afterwords

In conclusion, the thesis would hopefully generate further studies related to transportation link and its role in relation to Twin-Capital's brand image. The methods used here in this research can be easily developed further and, in ideal, have paved the way for more professional research. In other words, the thesis will have fulfilled its purpose should it inspire closer involvement of the DMOs in transportation planning and development. That said, we can remain optimistic towards the prospects of more competitive joint destination in the future.

Bibliography

Austrian National Tourist Office 2012. Arrivals in all paid forms of accommodation establishments in city area only. URL:http://www.tourmis.info/cgi-bin/tmintro.pl. Quoted : 5.11.2012.

Awasthi, A., Chauhan, S., Omrani, H., Panahi, A. 2011. A hybrid approach based on SERVQUAL and fuzzy TOPSIS for evaluating transportation service quality. Computers & Industrial Engineering, 61, 3, pp. 637-646.

Beerli, A., Martín, J. 2004. Factors influencing destination image. Annals of Tourism Research, 31, 3, pp. 657-681.

Bigné, J., Sánchez, M., Sánchez, J. 2001. Tourism Image, Evaluation Variables and After Purchase Behaviour: Inter-Relationship. Tourism Managerment, 22, 6, pp. 607-616.

Blain, C., Levy, S., Brent Ritchie, J. 2005. Destination Branding: Insights and Practices from Destination Management Organizations. Journal of Travel Research, 43, 328, pp. 328-338.

Bonn, M., Joseph, S., Dai, M. 2005. International versus Domestic Visitors: An Examination of Destination Image Perceptions. Journal of Travel Research, 43, 3, pp. 294-301.

Brotherton, B. 2008. Researching Hospitality and Tourism. SAGE Publications Ltd. London.

Chen, C-F., Tsai, D. 2007. How destination image and evaluative factors affect behavioral intentions? Tourism Management, 28, 4, pp. 1115-1122.

Chi, G., Gursoy, D., Qu, H. 2009. Demographic Variables and Loyalty Formation: A Systematic Examination. Hospitality & Tourism Management. Amherst.

Chi, G., Qu, H. 2008. Examining the Structural Relationships of Destination Image, Tourist Satisfaction and Destination Loyalty: an Integrated Approach. Tourism Management, 29, 4, pp. 624-636.

Colorado State University 2012. Validity. URL:http://writing.colostate.edu/guides/page.cfm?pageid=1388. Quoted: 9.12.2012.

Copterline 2012a. News. URL:http://www.copterline.com/news. Quoted: 6.11.2012.

Copterline 2012b. Schedules. URL:http://www.copterline.com/schedules. Quoted: 6.11.2012.

Decrop, A. 2006. Vacation Decision Making. CABI Publishing. Wallingford.

Dourmas, G., Doumi, M., Stavrinoudis, T. 2009. E-Tourism Development in Greek Coastal Passenger Shipping: the Case of NEL Lines. Middle East FORUM, Iss: 9, pp. 53-70.

Eckerö Line 2012a. M/s Nordlandia.
URL:https://www.eckeroline.fi/webapp/wcs/stores/servlet/Content_10151_10001_-1?page=index.php%3Foption%3Dcom_content%26view%3Darticle%26id%3D113%26lang%3Den-GB&smi=193&menuid=193. Quoted: 6.11.2012.

Eckerö Line 2012b. M/s Finlandia.
URL:https://varaamatka.eckeroline.fi/webapp/wcs/stores/servlet/Content_10151_10001_-1?. Quoted: 4.11.2012.

Fyall, A., Garrod, B. 2005. Tourism Marketing: A Collaborative Approach. Aspects of Tourism. Channel View Publications. Clevedon.

Gallarza, M., Gil, I., Calderón, H. 2002. Destination Image: Towards a Conceptual Framework. Annals of Tourism Research, 29, 1, pp. 56-78.

Gronau, W., Kagermeier, A. 2007. Key factors for successful leisure and tourism public transport provision. Journal of Transport Geography, 15, 2, pp. 127-135.

Helsingin kaupungin kongressi- ja matkailutoimisto [Helsinki City Tourist & Convention Bureau]. 12/2011. Helsingin matkailun tunnuslukuja [Tourism Indicators of City of Helsinki]. URL:http://www.visithelsinki.fi/sites/visithelsinki.fi/files/files/Tilastot/FI/helsinki1211.pdf. Quoted: 5.11.2012.

Helsingin kaupungin matkailu- ja kongressitoimisto [Helsinki City Tourist & Convention Bureau]. 3/2011. Helsingin matkailun tavoitteet 2009-2012 [Helsinki Tourism Objectives 2009-2012].
URL:http://www.visithelsinki.fi/sites/visithelsinki.fi/files/files/Tutkimukset/helsingin_matkailun_tavoitteet_2009-2012.pdf. Quoted: 5.11.2012.

Helsingin kaupunki [City of Helsinki]. 29.10.2012. Talousarvio 2013 ja taloussuunnitelma 2013–2015 [Budget Estimate for the Year 2013 and Plan for 2013-2015]. http://www.hel.fi/static/taske/julkaisut/2012/HKI_TAE_2013_web.pdf. Quoted: 4.11.2012.

Helsingin Sanomat 7.9.1999. Vesitasot veivät taivaalle Katajanokan lentosatamasta [Once Seaplanes Flew from Katajanokka Sea Terminal]. URL:https://www.hs.fi/yritykset/sanoma-arkisto/artikkeli.do?id=HS990307SI1KA02onl&hakusanat=Vesitasot+veiv%C3%A4t+taivaalle+Katajanokan+lentosatamasta&pvm=&alkaen=&loppuen=&lehti=kaikki&sivu=1&tulokset=1&lyhenne=HS&artikkeli=1&haku=HITE. Quoted: 6.11.2012.

Helsingin Sanomat 26.10.2001. Aero aloittaa lennot Tallinnaan ensi vuoden alkupuolella [Aero Launches Flights to Tallinn in the Beginning of Next Year] URL:https://www.hs.fi/yritykset/sanoma-arkisto/artikkeli.do?id=HS20011026SI1TA028r0&hakusanat=Aero+aloittaa+lennot+Tallinnaan+ensi+vuoden+alkupuolella&pvm=&alkaen=&loppuen=&lehti=kaikki&sivu=1&tulokset=1&lyhenne=HS&artikkeli=1&haku=HITE. Quoted: 6.11.2012.

Helsingin Sanomat 19.12.2001. Laivaliikennettä keisarin vallan ajoilta asti [Ship Traffic from the Ages of Tzar]. URL:https://www.hs.fi/yritykset/sanoma-arkisto/artikkeli.do?id=HS20011219SI1ME02jv4&hakusanat=Laivaliikennett%C3%A4+keisarin+vallan+ajoilta+asti&pvm=&alkaen=&loppuen=&lehti=kaikki&sivu=1&tulokset=1&lyhenne=HS&artikkeli=1&haku=HITE. Quoted: 6.11.2012.

Helsingin Sanomat 1.4.2008. Oikotie Helsingistä Keski-Eurooppaan [A Shortcut from Helsinki to Central Europe]. URL:https://www.hs.fi/yritykset/sanoma-arkisto/artikkeli.do?id=HS20011219SI1ME02jv4&hakusanat=Oikotie+Helsingist%C3%A4+Keski-Eurooppaan&pvm=&alkaen=&loppuen=&lehti=kaikki&sivu=1&tulokset=1&lyhenne=HS&artikkeli=1&haku=HITE. Quoted: 6.11.2012.

Helsingin Sanomat 2008. SuperSeaCat suspends service between Helsinki and Tallinn. URL:http://www.hs.fi/english/article/SuperSeaCat+suspends+service+between+Helsinki+and+Tallinn/1135240263496. Quoted: 4.11.2012.

Helsingin Sanomat 6.2.2012. Tunneli-idealla on ankarat vastustajansa [Tunnel Initiative has Strong Opposition]. URL:https://www.hs.fi/yritykset/sanoma-arkisto/artikkeli.do?id=HS20011219SI1ME02jv4&hakusanat=Tunneli-idealla+on+ankarat+vastustajansa&pvm=&alkaen=&loppuen=&lehti=kaikki&sivu=1&tulokset=1&lyhenne=HS&artikkeli=1&haku=HITE. Quoted: 6.11.2012.

Helsinki Airport 10/2012. Helsinki Airport Timetable. URL:http://www.helsinki-vantaa.fi/files/helsinki-airport/efhk_aikataulu/HELOCT12complete.pdf. Quoted:6.11.2012.

Hilmola, O-P. 2012. Competing Transportation Chains in Helsinki-Tallinn Route: Multi-Dimensional Evaluation. Lappeenranta University of Technology. Lappeenranta.

Histrodamus 2012. Tallinn-Helsinki ferry line is opened. URL:http://www.histrodamus.ee/index.php?event=Show_event&event_id=3410&layer=209&lang=eng#3410. Quoted: 6.11.2012.

Holloway, J. 2009. The Business of Tourism. 8th edition. Financial Times Prentice Hall. Harlow.

Holloway, J., Robinson, C. 1995. Marketing for Tourism. 3rd edition. Longman Group Limited. Harlow.

H-TTransPlan 2012. HTTransPlan – Helsinki-Tallinn Transport and Planning Scenarios. URL:http://www.euregio-heltal.org/httransplan. Quoted: 6.11.2012.

Iltalehti 2009. Nordic Jet Line lopetti liikennöinnin [Nordic Jet Line discontinues]. URL: http://www.iltalehti.fi/helsinki/200903319329203_hi.shtml. Quoted: 4.11.2012.

Ilta-Sanomat 21.12.2011. Kopterilla taas Tallinnaan [With Chopper to Tallinn Again]. URL:https://www.hs.fi/yritykset/sanoma-arkisto/artikkeli.do?id=IS20111221SLA1MAT04607&hakusanat=kopterilla+taas+tallinnaan&pvm=&alkaen=&loppuen=&lehti=kaikki&sivu=1&tulokset=4&lyhenne=IS&artikkeli=1&haku=HITE. Quoted: 6.11.2012.

Jantzen, J. 1998. Tutorial on Fuzzy Logic. http://www.imamu.edu.sa/Scientific_selections/abstracts/Math/Tutorial%20On%20Fuzzy%20Logic.pdf. Quoted: 30.9.2012.

Johansson, L. 28.3.2007. Competition in the ferry industry - a casestudy of the Helsinki-Tallinn route. URL:http://www.du.se/PageFiles/5053/JohanssonLotta.pdf. Quoted: 4.11.2012.

Kozak, M. 2002. Comparative Analysis of Tourist Motivations by Nationality and Destinations. Tourism Management, 23, 3, pp. 221-232.

Lazim, A., Wahab, N. 2010. A Fuzzy Decision Making Approach in Evaluating Ferry Service Quality. Management Research and Practise, 2, 1, pp. 94-107.

Linda Line 2012. Timetables / Prices. URL:http://www.lindaline.fi/en/?p=256. Quoted: 6.11.2012.

Lois, P., Wang, J. 2005. Choosing a Cruise Destination, and the Level of Passengers' Satisfaction, their Needs and Expectations: the Cyprus Case. Tourism Today, Iss: 5, pp. 142-152.

Moutinho, L. 2000. Tourism Marketing Research. Moutinho, L. Strategic Management in Tourism. Pp. 79-120. Wallingford.

Narayan, B., Rajendran, C., Sai, L. 2008. Scales to Measure and Benchmark Service Quality in Tourism Industry: A Second-Order Factor Approach. Benchmarking: an International Journal, 15, 4, pp. 469-493.

Nordic Innovation Centre. 6/2008. Experience Design in City Tourism. URL:http://nordicinnovation.org/Global/_Publications/Reports/2008/Experience%20Design%20in%20City%20Tourism.pdf. Quoted: 5.11.2012.

Pantouvakis, A. 2006. Port-service Quality Dimensions and Passenger Profiles: An Exploratory Examination and Analysis. Maritime Economics & Logistics, Iss: 8, pp. 402-418.

Papatheodorou, A. 2001. Why people travel to different places. Annals of Tourism Research, 28, 1, pp. 164-179.

Pernia, E. 1999. Tourism and Development in the East ASEAN Growth Area. Pookong, K., King, B. Asia-Pacific Tourism. Pp. 47-54. Hospitality Press. Elsternwick.

Porter, M. 2000. Location, Competition, and Economic Development: Local Clusters in a Global Economy. Economic Development Quarterly, 14, 1, pp. 15-34.

Salmensaari, T. 2010. Safety in Long Subsea Rail Tunnels. URL:http://www.euregio-heltal.org/wp-content/uploads/2011/03/TimoSalmensaari_thesis_Aalto2010.pdf. Quoted: 6.11.2012.

San Martín, H., Rodríguez del Bosque, I. 2008. Exploring the Cognitive-Affective Nature of Destination Image and the Role of Psychological Factors in Its Formation. Tourism Management, 29, 2, pp. 263-277.

Seddighi, H., Theocharous, A. 2002. A model of tourism destination choice: a theoretical and empirical analysis. Tourism Management, 23, 5, pp. 475-487.

Similä, J. 22.5.2006. Uuden sukupolven autolautta [A Next Generation Ferry].
URL:http://www.jamssi.com/gradu/gradu.pdf. Quoted: 4.11.2012.

Sirakaya, E and Woodside, A. 2005. Building and testing theories of decision making by travellers. Tourism Management, 26,6, pp. 815-832.

Smith, R., Deppa, B. 2009. Two Dimensions of Attribute Importance. Journal of Consumer Marketing, 26, 1, pp. 28-38.

Tallink Silja 2012. Timetables. URL:http://www.tallinksilja.com/en/schedules/helTal.
Quoted: 6.11.2012.

Tallinn City Tourist Office & Convention Bureau. 15.03.2011. Tourism in Tallinn 2011.
URL:http://www.tourism.tallinn.ee/static/files/065/tallinna_turism_2011_eng_at_240512.pdf. Quoted: 5.11.2012.

Tallinn City Tourist Office & Convention Bureau 2012. Services for Travel Trade.
URL:http://www.tourism.tallinn.ee/eng/bmenu/professional/services. Quoted: 5.11.2012.

Taloussanomat 11.8.2011. Copterline palaa liikenteeseen [Copterline Re-enters the Service].
URL:https://www.hs.fi/yritykset/sanoma-arkisto/artikkeli.do?id=TSV201111216&hakusanat=Copterline+palaa+liikenteeseen&pvm=&alkaen=&loppuen=&lehti=kaikki&sivu=1&tulokset=3&lyhenne=TS&artikkeli=1&haku=HITE. Quoted: 6.11.2012.

Taloussanomat 2010. Suomalaiset ovat Euroopan piheimpiä matkailijoita [Finns Among the Most Stingy European Travellers].
URL:http://www.taloussanomat.fi/palvelut/2010/10/19/suomalaiset-ovat-euroopan-piheimpia-matkailijoita/201014527/12. Quoted: 23.10.2012.

Tasci, A., Gartner, W. 2007. Destination Image and Its Functional Relationships. Journal of Travel Research, 45, 4, pp. 413-425.

Terk, E., Sakkeus, J., Keskpaik, A. 2012. Integration Scenarios. Terk, E. Twin-City in Making: Integration Scenarios for Tallinn and Helsinki Capital Regions. Pp. 13-28.

The Estonian Institute for Futures Studies, ASI Consult OÜ. 2008. Tallinn-Helsinki Permanent Rail Connection – Preliminary Analysis. URL: http://www.euregio-heltal.org/wp-content/uploads/2011/03/Hel-Tal-rail-connection-prefeasibility-study_ETI-ASIC_110708.doc-NeoOffice-Writer.pdf. Quoted: 5.11.2012.

Thompson, K., Schofield, P. 2007. An investigation of the relationship between public transport performance and destination satisfaction. Journal of Transport Geography, 15, 2, pp. 136-144.

Tourism in Twin-Capital 2012. Briefly About the Project.
URL:http://twincapital.weebly.com/contacts-and-project.html. Quoted: 6.11.2012.

Turan, O. 2006. A Rational Approach for Reduction of Motion Sickness & Improvement of Passenger Comfort and Safety in Sea Transportation.
URL:http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.121.4438&rep=rep1&type=pdf. Quoted: 31.7.2012.

Uudenmaan liitto [Uusimaa Regional Council]. 3.7.2007. Risteilymatkailun kilpailutekijät Itämeren alueella [Competitive Factors in Cruise Tourism in the Baltic Region].
URL:http://www.uudenmaanliitto.fi/modules/publishbank/julkaisupankki_files/328_. Quoted: 4.11.2012.

Viking Line 2012a. Timetables.
URL:http://www.vikingline.fi/timetables/timetables/timetables/hel_tal_ros.asp. Quoted: 6.11.2012.

Viking Line 2012b. Nearly 16,000 names suggested for Viking XPRS.
URL:http://www.vikingline.fi/about/press_releases/viking_xprs_name.asp?print=true. Quoted: 4.11.2012.

Weaver, P., Weber, K., McCleary, K. Destination Evaluation: The Role of Previous Travel Experience and Trip Characteristics. Journal of Travel Research, 45, 3, pp. 333-344.

Yamakawa, R. 1999. The Role of ESCAP in Tourism Development in the Asian and Pacific Region. Pookong, K., King, B. Asia-Pacific Tourism. Pp. 25-45. Hospitality Press. Elsternwick.

Yoon, Y., Uysal, M. 2005. An Examination of the Effects of Motivation and Satisfaction on Destination Loyalty: a Structural Model. Tourism Management, 26, 1, pp. 45-56.

Yle 2012. Tallinnan-laivat ylsivät jälleen ennätykseen [Another Record for Ships to Tallinn].
URL:http://yle.fi/uutiset/tallinnan-laivat_ylsivat_jalleen_ennatykseen/6249780. Quoted:6.11.2012.

Zani, S., Milioli, M., Morlini, I. 2012. Fuzzy Methods and Satisfaction Indices. Kenett, R., Salini, S. Modern Analysis of Customer Surveys: With Applications Using R. Pp. 439-456. Chichester.

Attachment 1. Key characteristics of tourist typologies as presented by Decrop

	Habitual	Rational	Hedonic	Opportunistic	Constrained	Adaptable
Level of involvement	Low	Low	High	Low	Low	High
Length of TDM process	Low	High		Low		Low
Dependency on habits	High	High		Low	Low	Low
Consistency of decisions	High	High	Low	Low	High	Low
Risk aversion	High	High		Low		
Extent of planning		High		Low		Low
Independency				High		High
Information search	Low	High	High	Low	Low	
Dependency on information		High	Low	Low		
Dependency on subjective variables				High		
Conformity				High	High	High
Importance given to consumption and evaluation		High				
Price sensitivity		High				
Choise optimization	High	Low			Low	

Attachment 2. Rugg's model as applied in tourism by Papatheodorou
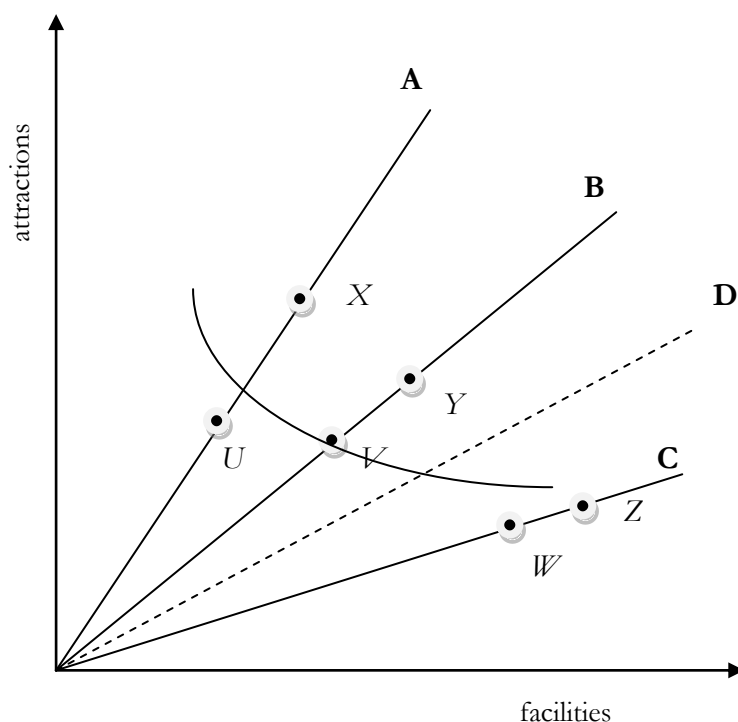
The diagram above offers a generalized biaxial (attractions vs. facilities) representation of destination characteristics. Rays A, B and C represent utility derived in three destinations using the equation $z_{tour} = Gx_{tour}$ where z_{tour} is the vector of tourist characteristics in each destination and Gx_{tour} is vector of financial and temporal constraints. Given that the curve represents the criteria for sought combination of characteristics and points U, V, W and X, Y, Z represent financial and temporal constraints respectively, following examples can be given:

    a) A major price increase in destination B would reduce its dominance over destinations A and C by shifting financial constraint Y towards the origin and past temporal constraint V

    b) Changes in consumer preferences may alter the curve and make any of the destinations dominant

    c) A successful marketing campaign or major developments executed by destination C may tilt the ray upwards and/or move constraints W, Z further to the right thus making it dominant

    d) A new destination D can enter the market offering superior combination of characteristics at given temporal or financial level of constraints and become superior

Attachment 3. Destination characteristics

Natural Resources	Natural Environment	Social Environment
•Weather •Beaches •Countryside •Flora and fauna	•Scenery •Cities and towns •Cleanliness •Overcrowding •Air and noise pollution •Traffic congestion	•Hospitality and friendliness of local residents •Underprivilege and poverty •Quality of life •Language barriers
General Infrastructure	**Tourist Infrastructure**	**Tourist Leisure and Recreation**
•Roads, airports and ports •Transport facilities •Health services •Telecommunications •Commercial infrastructure •Building development	•Accommodation •Restaurants •Bars, discos and clubs •Accessibility •Excursions •Tourist centers •Network of tourist information	•Theme parks •Entertainment and sports activities
Culture, History and Art	**Atmosphere of the Place**	**Political and Economic Factors**
•Museums, historical buildings, monuments, etc. •Handicraft •Gastronomy •Folklore •Religion •Customs and lifestyle	•Luxurious •Fashionable •Place with a good reputation •Family-oriented •Exotic •Mystic •Relaxing •Stressful •Fun, enjoyable •Pleasant •Boring •Attractive or interesting	•Political stability •Political tendencies •Economic development •Safety •Prices

Attachment 4. Conceptual model of the theoretical framework
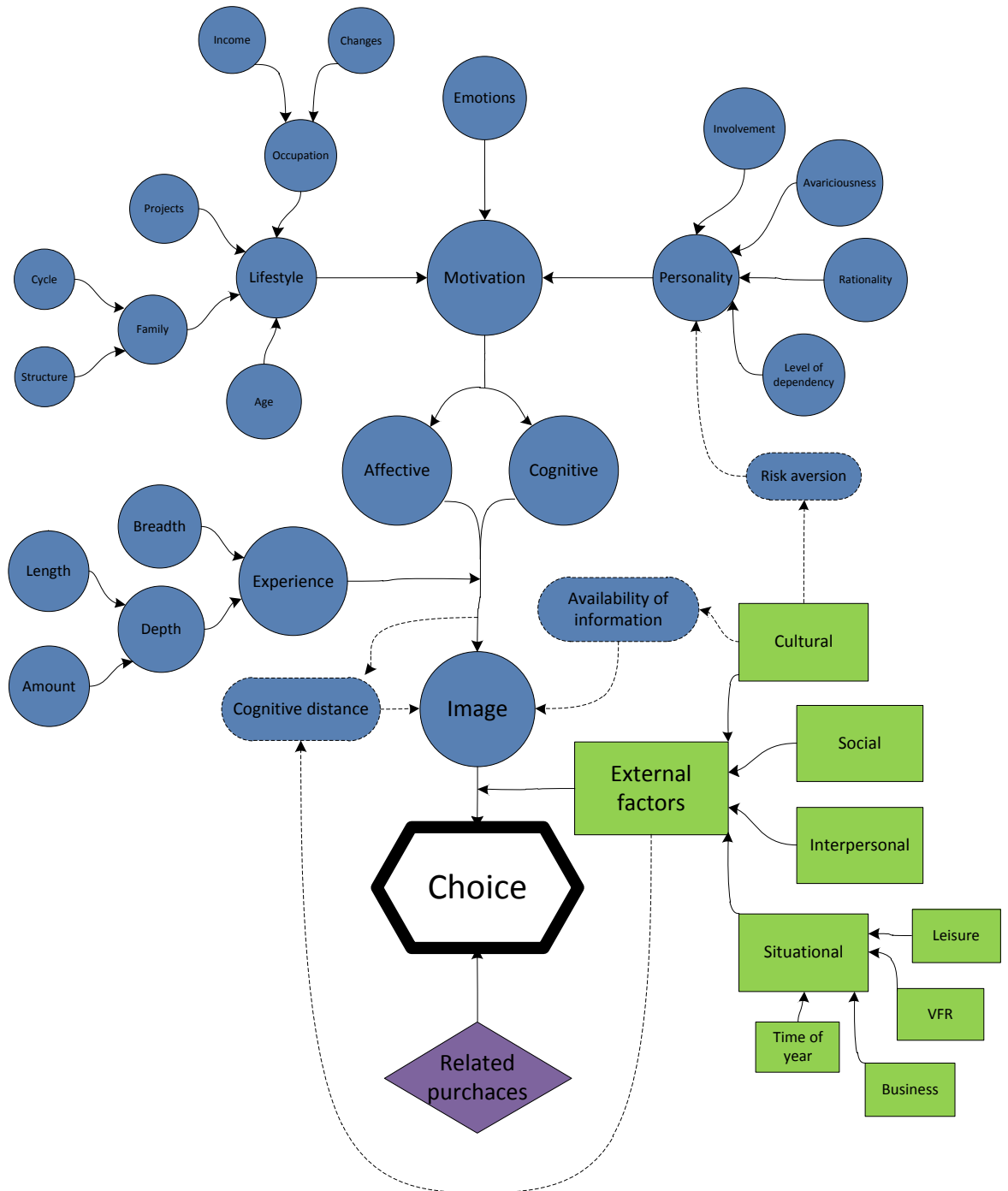
Attachment 5. Results of preliminary survey

#	Item				#	Item			
1	Ferry does not fly				13	Need to queue			
	Safety					Smoothness of service			
	Other passengers make it hard to sleep					Compliance with schedule			
2	Quick check in				14	Low level of initiative shown by waiters			
	Online booking					Dance music did not suit personal needs			
	Cleanliness				15	Degraded appearance of the vessel			
	Spaciousness					Good level of service in cafeteria			
	Food and beverages on board					Drunk passengers			
3	Comfort				16	Travel speed			
	Entertainment (movies shown)				17	Travel speed			
4	Expensiveness					Comfortable seating			
5	No need to drive / possibility to sleep					Appearance of the terrace on board			
	Congestion					Atmosphere created by other passengers			
6	Price				18	Dangerous disembarkment for families			
	Seating space				19	Congestion			
	Temperature on board				20	Atmosphere			
	Restaurants					Appearance of cabins			
7	Family friendly cabins					Entertainment			
	Location of the cabins					Availability of seats			
	Food					Suitability for personal needs			
	Extra beds				21	Price of restaurant services			
8	Poor quality of fast food					Security of storing the luggage			
9	Price level				22	Entertainment			
10	Appearance of the ship					Quality of service			
	Embarkment / disembarkment of the vehicles					Price level			
	Splashes of water					Travel speed			
	Space for relaxation and entertainment				23	Quality of service			
	Food					Security			
	Level of service				24	Price level			
	Staff's knowledge of foreign language					Travel speed			
11	Good conduct of service				25	Quality of service			
	Friendly staff				26	Elements of journey unimportant			
	Seating space				27	Price / quality ratio			
	Extent of service								
	Cleanliness								
12	Entertainment								
	Spaciousness								
	Comfort								
	Space for luggage								
	Luggage room hard to find								
	Expensive cafeteria								

Attachment 6. Questionnaire

Dear Sir/Madam,
Your perceptions and opinions with regards to the importance of transportation between Helsinki and Tallinn are very important to this study.
Your response will help to better understand and estimate how transportation services are affecting attractiveness of a tourism destination now
and in the future. Your participation in this study is entirely voluntary. The information you provide will not be separated in any way and will be
used only as empirical data for a bachelor thesis. Thank you for your participation.

Part I: Please mark where appropriate according to how strongly you agree / disagree with the following statements. **Whether you have or have not travelled on a ferry between Helsinki and Tallinn is not important.**

Travelling between Helsinki and Tallinn by ferry is:

Agree   Disagree

- Fast
- Fun
- Convenient
- Easy
- Comfortable
- Cheap
- Safe
- Suits my personal needs

Ferries running between Helsinki and Tallinn are:

Agree   Disagree

- In good condition
- Well equipped
- Entertaining
- Have good atmosphere
- Have enough space
- Run on time
- Run throughout the day
- Have professional staff
- Have good restaurants
- Have good shopping opportunities
- Have comfortable cabins
- Have adequate facilities for luggage
- Are suitable for children

While in Helsinki:

Agree   Disagree

I would like to visit Tallinn by ferry
Tallinn is an important reason to visit Helsinki

Please answer also questions at the back of this paper

Part II: Please provide additional information about the trip and yourself

Purpose of your visit:
☐ Leisure ☐ Business ☐ Friends or relatives

How often do you travel per year?
☐ 0-1 ☐ 2-3 ☐ 4-9 ☐ 10 times or more

Have you visited Nordic / Scandinavian country before?
☐ Yes ☐ No

Have you visited Helsinki and/or Tallinn before?
☐ No ☐ 1-3 ☐ 4-9 ☐ 10 times or more

Before and during a trip:

	Agree				Disagree
I prefer to plan the trip entirely myself					
I spend a lot of time choosing a destination					
I have strong interest in travelling					
I spend a lot of money while travelling					

How often do you travel by ferry?
☐ Once a year or less
☐ Several times a year
☐ Monthly
☐ Several times a month

Personal details:
- Nationality [_____]
- Age ☐ Under 18 ☐ 18-29 ☐ 30-44 ☐ 45-64 ☐ Over 64
- Education ☐ Higher education ☐ No higher education
- Income ☐ Low ☐ Medium ☐ High
- Household ☐ Spouse ☐ Children

Thank you for your participation!

Attachment 7. Statistical distribution of respondents

Purpose of visit: Business=10%   Leisure=80%   VFR=10%

Travel frequency: ≥1/year=22% 2-3/year=34% 4-9/year=27% 0≤/year=17%

Experience with Nordic: Yes=78%   No=22%

Amt of visits to Hel/Tal: Never=9%   1-3 times=22% 4-9 times=19% 10≤ times=50%

Independence: V high=50% High=16% Medium=13% Low=6% V low=3%

Rationality: V high=29% High=34% Medium=20% Low=8% V low=9%

Involvement: V high=51% High=24% Medium=20% Low=2% V low=2%

Prodigality: V high=20% High=28% Medium=42% Low=7% V low=3%

Regularity of using ferry: ≥1/year=47%   1/year<=53%

Nationality: FI=55%   EE=14%   RU=15%   Others=16%

Age: <18-29=30%   30-44=27%   45-64=38%   64<=5%

Education: Higher=48%   No higher=52%

Income: Low=21%   Medium=69%   High=10%

Household: Single=26% Has partner=36% Single parent=8% Family=30%

Attachment 8. Fuzzy TOPSIS analysis

	Aggragate fuzzy weights		
	L	M	U
S1	6,02	8,02	8,81
S2	4,71	6,67	8,12
S3	5,47	7,47	8,67
S4	5,88	7,88	8,70
S5	5,05	7,02	8,33
S6	4,23	6,07	7,56
S7	5,70	7,70	8,70
S8	5,28	7,26	8,37
S9	5,40	7,37	8,53
S10	5,02	7,00	8,37
S11	4,70	6,67	8,12
S12	4,72	6,72	8,14
S13	5,05	7,02	8,19
S14	6,09	8,07	8,77
S15	5,81	7,77	8,65
S16	5,47	7,47	8,60
S17	4,77	6,72	8,02
S18	4,51	6,42	7,93
S19	4,70	6,67	8,19
S20	4,60	6,58	8,02
S21	4,95	6,93	8,23
S22	5,74	7,70	8,51
S23	4,30	6,02	7,28

Fuzzy values according to willingness to travel by ferry

	Fully agree			Agree			Neutral			Disagree			Fully disagree		
	L	M	U	L	M	U	L	M	U	L	M	U	L	M	U
S1	6,10	8,10	8,80	5,57	7,57	8,71	6,33	8,33	9,00	6,33	8,33	9,00	7,00	9,00	9,00
S2	5,12	7,08	8,29	3,67	5,67	7,57	5,22	7,22	8,56	4,33	6,33	8,33	2,00	4,00	6,00
S3	6,02	8,02	8,88	4,43	6,43	8,24	5,00	7,00	8,33	5,67	7,67	9,00	5,00	7,00	9,00
S4	6,41	8,41	8,88	5,19	7,19	8,71	5,44	7,44	8,33	5,67	7,67	8,33	4,00	6,00	8,00
S5	5,47	7,43	8,45	4,05	6,05	7,95	5,22	7,22	8,56	5,67	7,67	9,00	3,00	5,00	7,00
S6	4,33	6,14	7,51	4,24	6,24	7,86	4,33	6,11	7,44	3,00	4,33	6,33	5,00	7,00	8,00
S7	5,86	7,86	8,69	5,48	7,48	8,71	5,67	7,67	8,78	5,67	7,67	9,00	4,00	6,00	8,00
S8	5,94	7,90	8,73	4,14	6,14	7,67	4,78	6,78	8,11	5,00	7,00	8,33	3,00	5,00	7,00
S9	5,67	7,63	8,53	4,52	6,52	8,43	5,44	7,44	8,56	6,33	8,33	9,00	6,00	8,00	9,00
S10	5,47	7,43	8,57	4,14	6,14	7,95	4,56	6,56	8,33	5,67	7,67	9,00	5,00	7,00	8,00
S11	5,04	7,00	8,22	4,05	6,05	7,95	4,56	6,56	8,11	3,67	5,67	7,67	5,00	7,00	8,00
S12	5,16	7,16	8,33	3,95	5,95	7,86	4,33	6,33	7,89	3,00	5,00	7,00	5,00	7,00	8,00
S13	5,59	7,59	8,45	4,43	6,43	8,14	4,33	6,11	7,67	3,67	5,67	7,00	3,00	5,00	7,00
S14	6,41	8,41	8,84	5,57	7,57	8,81	5,22	7,00	8,11	6,33	8,33	9,00	7,00	9,00	9,00
S15	5,75	7,67	8,53	5,95	7,95	9,00	6,56	8,56	9,00	4,33	6,33	7,67	5,00	7,00	8,00
S16	5,98	7,98	8,84	4,81	6,81	8,52	5,00	7,00	8,33	5,00	7,00	8,33	3,00	4,00	6,00
S17	5,35	7,27	8,29	4,05	6,05	7,19	3,67	5,67	7,44	4,33	6,33	7,67	3,00	5,00	7,00
S18	4,80	6,65	7,98	4,24	6,24	8,05	4,11	6,11	7,67	4,33	6,33	7,67	4,00	6,00	8,00
S19	5,00	6,96	8,29	4,43	6,43	8,24	3,67	5,67	7,44	3,67	5,67	7,44	6,00	8,00	9,00
S20	5,08	7,04	8,25	3,95	5,95	7,86	3,89	5,89	7,44	2,33	4,33	6,33	6,00	8,00	9,00
S21	5,59	7,59	8,57	4,14	6,14	8,05	4,33	6,33	7,67	5,00	7,00	8,33	1,00	2,00	4,00
S22	7,00	9,00	9,00	5,00	7,00	9,00	3,00	5,00	7,00	1,00	3,00	5,00	1,00	1,00	3,00
S23	5,08	6,84	7,71	3,90	5,86	7,57	2,56	4,11	6,11	1,67	3,00	5,00	1,00	1,00	3,00

Converted fuzzy values

	Fully agree			Agree			Neutral			Disagree			Fully disagree		
	L	M	U	L	M	U	L	M	U	L	M	U	L	M	U
S1	0,69	0,92	1,00	0,62	0,85	0,98	0,72	0,95	1,02	0,72	0,95	1,02	0,79	1,02	1,02
S2	0,63	0,87	1,02	0,45	0,69	0,93	0,64	0,89	1,05	0,53	0,78	1,03	0,25	0,49	0,74
S3	0,69	0,92	1,02	0,51	0,74	0,95	0,58	0,81	0,96	0,65	0,88	1,04	0,58	0,81	1,04
S4	0,74	0,97	1,02	0,60	0,83	1,00	0,63	0,86	0,96	0,65	0,88	0,96	0,23	0,46	0,69
S5	0,66	0,89	1,02	0,48	0,72	0,95	0,63	0,87	1,03	0,68	0,92	1,08	0,36	0,60	0,84
S6	0,57	0,81	0,99	0,54	0,81	1,02	0,57	0,81	0,98	0,40	0,57	0,84	0,40	0,66	0,93
S7	0,67	0,90	1,00	0,62	0,85	0,99	0,65	0,88	1,01	0,65	0,88	1,03	0,46	0,69	0,92
S8	0,71	0,94	1,04	0,49	0,73	0,91	0,57	0,81	0,97	0,60	0,84	1,00	0,36	0,60	0,84
S9	0,66	0,89	1,00	0,53	0,77	0,99	0,64	0,87	1,00	0,74	0,98	1,05	0,70	0,94	1,05
S10	0,65	0,89	1,02	0,50	0,74	0,96	0,54	0,78	1,00	0,68	0,92	1,08	0,60	0,84	0,96
S11	0,62	0,86	1,01	0,49	0,74	0,97	0,56	0,81	1,00	0,45	0,70	0,94	0,62	0,86	0,99
S12	0,63	0,88	1,02	0,49	0,74	0,97	0,53	0,78	0,97	0,37	0,61	0,86	0,61	0,86	0,98
S13	0,68	0,93	1,03	0,56	0,80	1,00	0,53	0,75	0,94	0,45	0,69	0,86	0,37	0,61	0,86
S14	0,73	0,96	1,01	0,62	0,85	1,00	0,60	0,80	0,93	0,72	0,95	1,03	0,80	1,03	1,03
S15	0,66	0,89	0,99	0,69	0,92	1,04	0,76	0,99	1,04	0,50	0,73	0,89	0,58	0,81	0,92
S16	0,70	0,93	1,03	0,56	0,79	0,99	0,58	0,81	8,33	0,58	0,81	0,97	0,35	0,46	0,70
S17	0,67	0,91	1,03	0,49	0,74	0,88	0,46	0,71	0,93	0,54	0,79	0,96	0,37	0,62	0,87
S18	0,61	0,84	1,01	0,52	0,76	0,99	0,52	0,77	0,97	0,55	0,80	0,97	0,50	0,76	1,01
S19	0,61	0,85	1,01	0,52	0,77	0,99	0,45	0,69	0,91	0,45	0,69	0,94	0,73	0,98	1,10
S20	0,63	0,88	1,03	0,48	0,73	0,96	0,48	0,73	0,93	0,29	0,54	0,79	0,75	1,00	1,12
S21	0,68	0,92	1,04	0,50	0,74	0,97	0,53	0,77	0,93	0,61	0,85	1,01	0,12	0,24	0,49
S22	0,82	1,06	1,06	0,59	0,82	1,06	0,35	0,59	0,82	0,12	0,35	0,59	0,12	0,12	0,35
S23	0,70	0,94	1,06	0,52	0,79	1,02	0,35	0,56	0,84	0,23	0,41	0,69	0,14	0,14	0,41

	Fuzzy values with factor loadings														
	Fully agree			Agree			Neutral			Disagree			Fully disagree		
	L	M	U	L	M	U	L	M	U	L	M	U	L	M	U
S1	4,17	7,37	8,80	3,73	6,79	8,64	4,33	7,59	9,00	4,33	7,59	9,00	4,78	8,19	9,00
S2	2,97	5,82	8,29	2,11	4,64	7,55	2,51	5,94	8,56	2,51	5,21	8,33	1,16	3,29	6,00
S3	3,79	6,90	8,88	2,81	5,55	8,27	3,03	6,02	8,33	3,57	6,60	9,00	3,15	6,02	9,00
S4	4,34	7,62	8,88	3,51	6,51	8,73	3,15	6,75	8,33	3,83	6,95	8,33	1,35	3,63	6,00
S5	3,32	6,27	8,45	2,42	5,06	7,91	3,17	6,09	8,56	3,43	6,47	9,00	1,82	4,22	7,00
S6	2,43	4,93	7,51	2,29	4,89	7,73	2,43	4,91	7,44	1,68	3,48	6,33	1,68	4,02	7,00
S7	3,84	6,96	8,69	3,51	6,52	8,64	3,71	6,79	8,78	3,71	6,79	9,00	2,62	5,31	8,00
S8	3,75	6,85	8,73	2,58	5,28	7,64	3,01	5,87	8,11	3,15	6,07	8,33	1,89	4,33	7,00
S9	3,58	6,59	8,53	2,87	5,65	8,45	3,44	6,43	8,56	4,00	7,20	9,00	3,79	6,91	9,00
S10	3,28	6,21	8,57	2,51	5,17	8,00	2,73	5,48	8,33	3,40	6,41	9,00	3,00	5,85	8,00
S11	2,92	5,76	8,22	2,32	4,93	7,91	2,64	5,39	8,11	2,12	4,66	7,67	2,89	5,76	8,00
S12	2,99	5,91	8,33	2,32	4,95	7,91	2,51	5,23	7,89	1,74	4,13	7,00	2,90	5,78	8,00
S13	3,45	6,51	8,45	2,80	5,62	8,18	2,67	5,24	7,67	2,26	4,86	7,00	1,85	4,29	7,00
S14	4,46	7,74	8,84	3,79	6,86	8,73	3,63	6,44	8,11	4,40	7,67	9,00	4,86	8,28	9,00
S15	3,86	6,88	8,53	4,03	7,18	9,00	4,41	7,68	9,00	2,91	5,69	7,67	3,36	6,28	8,00
S16	3,80	6,92	8,84	3,06	5,92	8,55	3,18	6,07	8,33	3,18	6,07	8,33	1,91	3,47	6,00
S17	3,18	6,09	8,29	2,32	4,95	7,09	2,18	4,75	7,44	2,57	5,31	7,67	1,78	4,19	7,00
S18	2,73	5,38	7,98	2,33	4,86	7,82	2,34	4,95	7,67	2,47	5,13	7,67	2,28	4,86	8,00
S19	2,87	5,68	8,29	2,45	5,11	8,09	2,10	4,62	7,44	2,10	4,62	7,67	3,44	6,52	9,00
S20	2,91	5,77	8,25	2,19	4,77	7,73	2,23	4,83	7,44	1,34	3,55	6,33	3,44	6,56	9,00
S21	3,36	6,39	8,57	2,46	5,13	8,00	2,61	5,33	7,67	3,01	5,89	8,33	0,60	1,68	4,00
S22	4,72	8,14	9,00	3,37	6,33	9,00	2,02	4,52	7,00	0,67	2,71	5,00	0,67	0,90	3,00
S23	3,00	5,66	7,71	2,23	4,74	7,45	1,51	3,40	6,11	0,99	2,48	5,00	0,59	0,83	3,00

Closeness coefficient

	Fully agree	Agree	Neutral	Disagree	Fully disagree
DL	5,23	4,73	3,62	2,78	1,40
DU	2,96	3,60	4,45	5,16	6,33
CC	0,639	0,568	0,448	0,350	0,181

Effects of different aggregate fuzzy weight loadings on various travel components

	Fully agree	Agree	Neutral	Disagree	Fully disagree
Experiment #1	0,460	0,431	0,440	0,435	0,409
Experiment #2	0,471	0,436	0,452	0,441	0,405
Experiment #3	0,439	0,429	0,436	0,436	0,383
Experiment #4	0,478	0,446	0,450	0,447	0,389
Experiment #5	0,453	0,433	0,445	0,444	0,392
Experiment #6	0,462	0,438	0,441	0,422	0,397
Experiment #7	0,465	0,438	0,443	0,438	0,396
Experiment #8	0,471	0,433	0,442	0,439	0,393
Experiment #9	0,461	0,430	0,438	0,440	0,408
Experiment #10	0,461	0,428	0,434	0,438	0,402
Experiment #11	0,463	0,432	0,439	0,428	0,407
Experiment #12	0,467	0,435	0,440	0,424	0,410
Experiment #13	0,470	0,439	0,438	0,428	0,394
Experiment #14	0,463	0,427	0,426	0,436	0,410
Experiment #15	0,462	0,441	0,459	0,426	0,400
Experiment #16	0,471	0,439	0,443	0,438	0,386
Experiment #17	0,468	0,432	0,435	0,435	0,395
Experiment #18	0,460	0,432	0,434	0,431	0,400
Experiment #19	0,460	0,432	0,429	0,425	0,414
Experiment #20	0,468	0,434	0,437	0,419	0,421
Experiment #21	0,479	0,445	0,448	0,450	0,378

Attachment 9. Sensitivity analyses

Amounts of previous visits to Helsinki and/or Tallinn				
	None	**1-3**	**4-9**	**10 or more**
Experiment #1	0,444	0,433	0,424	0,428
Experiment #2	0,449	0,439	0,421	0,422
Experiment #3	0,439	0,429	0,416	0,419
Experiment #4	0,449	0,435	0,423	0,425
Experiment #5	0,444	0,441	0,424	0,424
Experiment #6	0,445	0,431	0,421	0,428
Experiment #7	0,446	0,434	0,423	0,428
Experiment #8	0,439	0,436	0,420	0,417
Experiment #9	0,447	0,441	0,420	0,430
Experiment #10	0,450	0,440	0,417	0,432
Experiment #11	0,449	0,440	0,418	0,430
Experiment #12	0,449	0,443	0,419	0,425
Experiment #13	0,446	0,441	0,423	0,424
Experiment #14	0,446	0,433	0,416	0,426
Experiment #15	0,445	0,433	0,437	0,430
Experiment #16	0,447	0,438	0,424	0,424
Experiment #17	0,445	0,437	0,424	0,425
Experiment #18	0,443	0,435	0,425	0,425
Experiment #19	0,448	0,430	0,420	0,427
Experiment #20	0,449	0,438	0,420	0,424
Experiment #21	0,450	0,441	0,423	0,422

Independency level			
	Very high	**High**	**Medium or less**
Experiment #1	0,449	0,428	0,432
Experiment #2	0,444	0,431	0,430
Experiment #3	0,448	0,427	0,432
Experiment #4	0,448	0,429	0,431
Experiment #5	0,444	0,441	0,424
Experiment #6	0,450	0,431	0,424
Experiment #7	0,444	0,429	0,427
Experiment #8	0,447	0,429	0,431
Experiment #9	0,450	0,425	0,435
Experiment #10	0,448	0,425	0,431
Experiment #11	0,445	0,433	0,429
Experiment #12	0,446	0,429	0,431
Experiment #13	0,444	0,431	0,431
Experiment #14	0,445	0,429	0,438
Experiment #15	0,450	0,425	0,459
Experiment #16	0,444	0,428	0,432
Experiment #17	0,446	0,427	0,430
Experiment #18	0,447	0,428	0,430
Experiment #19	0,446	0,426	0,432
Experiment #20	0,451	0,433	0,428
Experiment #21	0,450	0,422	0,436

Frequency of ferry travel		
	Once a year	> Once a year
Experiment #1	0,440	0,433
Experiment #2	0,444	0,428
Experiment #3	0,441	0,430
Experiment #4	0,442	0,431
Experiment #5	0,444	0,429
Experiment #6	0,442	0,429
Experiment #7	0,440	0,431
Experiment #8	0,443	0,430
Experiment #9	0,441	0,431
Experiment #10	0,439	0,432
Experiment #11	0,441	0,430
Experiment #12	0,443	0,430
Experiment #13	0,443	0,430
Experiment #14	0,440	0,433
Experiment #15	0,440	0,433
Experiment #16	0,439	0,432
Experiment #17	0,440	0,431
Experiment #18	0,440	0,431
Experiment #19	0,439	0,431
Experiment #20	0,442	0,430
Experiment #21	0,442	0,430

Nationality			
	Finnish	Estonian	Russian	Other
Experiment #1	0,422	0,424	0,454	0,434
Experiment #2	0,416	0,422	0,456	0,439
Experiment #3	0,418	0,431	0,457	0,436
Experiment #4	0,413	0,426	0,457	0,441
Experiment #5	0,416	0,428	0,454	0,442
Experiment #6	0,424	0,417	0,463	0,424
Experiment #7	0,418	0,425	0,456	0,436
Experiment #8	0,416	0,430	0,456	0,440
Experiment #9	0,417	0,433	0,454	0,441
Experiment #10	0,416	0,430	0,455	0,438
Experiment #11	0,416	0,421	0,460	0,431
Experiment #12	0,415	0,426	0,462	0,436
Experiment #13	0,415	0,425	0,463	0,441
Experiment #14	0,421	0,421	0,444	0,439
Experiment #15	0,423	0,431	0,456	0,432
Experiment #16	0,417	0,429	0,457	0,436
Experiment #17	0,417	0,428	0,459	0,436
Experiment #18	0,421	0,430	0,448	0,432
Experiment #19	0,418	0,431	0,455	0,433
Experiment #20	0,416	0,425	0,461	0,431
Experiment #21	0,415	0,427	0,460	0,434

	Income level		
	Low	**Medium**	**High**
Experiment #1	0,435	0,432	0,440
Experiment #2	0,435	0,431	0,433
Experiment #3	0,438	0,427	0,437
Experiment #4	0,438	0,428	0,435
Experiment #5	0,442	0,429	0,432
Experiment #6	0,427	0,431	0,446
Experiment #7	0,434	0,431	0,432
Experiment #8	0,440	0,428	0,436
Experiment #9	0,441	0,427	0,435
Experiment #10	0,440	0,426	0,434
Experiment #11	0,441	0,432	0,432
Experiment #12	0,442	0,430	0,432
Experiment #13	0,442	0,426	0,440
Experiment #14	0,437	0,428	0,441
Experiment #15	0,436	0,430	0,449
Experiment #16	0,435	0,427	0,437
Experiment #17	0,441	0,427	0,433
Experiment #18	0,443	0,432	0,429
Experiment #19	0,442	0,431	0,432
Experiment #20	0,437	0,425	0,439
Experiment #21	0,441	0,426	0,439

	Type of household		
	Single	**With spouse***	**With children****
Experiment #1	0,437	0,435	0,441
Experiment #2	0,438	0,431	0,438
Experiment #3	0,438	0,432	0,438
Experiment #4	0,441	0,432	0,446
Experiment #5	0,440	0,432	0,432
Experiment #6	0,437	0,431	0,435
Experiment #7	0,442	0,431	0,431
Experiment #8	0,438	0,432	0,436
Experiment #9	0,442	0,431	0,438
Experiment #10	0,440	0,431	0,437
Experiment #11	0,437	0,433	0,439
Experiment #12	0,437	0,433	0,437
Experiment #13	0,444	0,431	0,434
Experiment #14	0,441	0,432	0,442
Experiment #15	0,438	0,433	0,447
Experiment #16	0,439	0,432	0,437
Experiment #17	0,439	0,431	0,436
Experiment #18	0,436	0,433	0,440
Experiment #19	0,437	0,432	0,437
Experiment #20	0,437	0,432	0,437
Experiment #21	0,439	0,432	0,435

*Including families with children

**Including single parent households