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Mobile applications as solutions to enhance sustainable travel behaviour among Generation Y

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Abstract

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The aim of this thesis was to investigate the possibility and the best ways of using mobile applications to enhance sustainable travel behavior among Generation Y. The development of Information and Communication Technology (ICT) brings the new opportunities in tourism and travel industry. At the same time, widely accepted as currently most significant segment both in travel industry and global sustainable development, Generation Y is know for their high expertise and passion for using technological innovations. This report attempted to study the use of mobile applications – an innovative ICT development as a tool of Travel Demand Management, aimed to educate and involve Generation Y in a world of sustainable traveling.

The theoretical framework of the study embraces three main topics: sustainable tourism and sustainable purchasing in tourism; the role of mobile applications in tourism, sustainable tourism and technology acceptance model; the portrait of Generation Y, their consumer and travel behavior, and attitudes towards sustainable tourism and mobile applications.

The empirical study used qualitative approach and was done in a form of online-survey. Respondents were required to fit the age criteria of Generation Y, being 18-34 years old. The links to the questionnaire were distributed in social media and via e-mail. As a result, 100 valid responses were analyzed using descriptive statistics and interpreted by themes.

Generation Y members are active travelers and users of mobile applications, however their awareness of sustainable tourism is very low, which results in indifference and nonacceptance of personal responsibility in it. To succeed mobile applications need to be supported be educating activities and be beneficent for a customer. Conclusions were complemented by a set of recommendations for tourism stakeholders and applications developers.

Keywords
Sustainable tourism, Generation Y, Mobile applications, Sustainable purchaising and consumption, Information and Communication Technology (ICT), eTourism

Glossary of acronyms

ATTA - Adventure Travel Trade Association

CO2 – Carbon Dioxide

DMO - Destination Management Organization

DMS - Destination Management Systems

EMIS - Environmental Management Information Systems

GDP – Gross Domestic Product

Gen Y – Generation Y

GHG - Greenhouse Gas

GIS - Geographical Information Systems

GPS - Global Positioning Systems

ICT - Information Communication Technology

IT - Information technology

PDA - Personal Digital Assistant

TAM - Technology Acceptance Model

TDM - Travel Demand Management

TIS - Tourism Information System

TRA - Theory of Reasoned Action

UNEP – United Nations Environment Programme

UNESCO - United Nations Educational, Scientific and Cultural Organization

UNWTO - World Tourism Organization

UTAUT - Unified Theory of Acceptance and Use of Technology

WMO - World Meteorological Organization

WTTC - World Travel & Tourism Council

WWF - World Wildlife Fund

WYSETC - World Youth Student & Education Travel Confederation

Table of contents

1   Introduction

Nowadays the world is facing a lot of challenges caused by the development at previously unknown speed. Emerging technologies and globalisation are increasing the welfare of societies around the world and stimulate the growth of population and its needs. However, millions of people are still living in poverty and the increased consumption is challenged by rapidly depleting natural resourses and climate change. Recent studies showed that humans are already exceeding the Earth's ability to support their lifestyles, and have been doing so for approximately twenty years (WWF 2006). Therefore, to avoid global catastrophy and preserve the world as it is for the upcoming generations there is an urgent need to adapt the course of global development in a sustainable way.

Being a huge industry interrelated to many others, tourism is seen to play a significant part in global sustainable development. The total economic contribution of Travel & Tourism industry, taking account of its direct, indirect and induced impacts has reached 9% of total Gross Domestic Product (GDP) in 2012, growing faster than manufacturing, retail, financial services and communications. Being a people-oriented industry, Travel & Tourism is also a great employer, supporting one in 11 of all jobs in the world. (WTTC 2012.)

Tourism is a major source of income for many countries, however, like other forms of development, tourism can also cause its share of problems, such as social dislocation, loss of cultural heritage, economic dependence and ecological degradation (UNESCO 2010). The importance of sustainable tourism development is reinforced by other factors as well. First is a *growing tourism demand*, both in business and leasure segments, as according to United Nations World Tourism Organization (UNWTO 2001) the number of tourist trips is expected to continue increasing for the next decade, so that the number of international tourist arrivals is expected to reach 1.6 billion by 2020 and is likely to attain 2.6 billion in 2050.

Second is the high *dependence of tourism on climate change and environmental degradation* as climate defines the lengh and quality of tourism seasons, affects tourism operators and influences environmental conditions that can both attract and deter visitors (UNWTO 2009).

Finally, third reason represents *emissions produced by tourism* itself. According to UNWTO, World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) (2008) the estimated global tourism related emissions of Carbon dioxide (CO_2) were about 5% of total global emissions in 2005. Most of these emissions are generated by transportation of tourists - 75 per cent in 2005, in particular, air travel - 40 per cent in 2005. A business as usual scenario prepared by UNWTO-WMO-UNEP (2008) estimated that tourism CO_2-emissions would increase by 130% from 2005 to 2035. Most of this growth is attributed to air travel because the number of international tourist trips is expected to continue to grow over the coming decades. Individual travellers participate in more frequent and more distant holidays, stay over shorter periods of time, and increasingly use high-energy-intensive type of tourism on a per trip basis. (Ritalahti 2012.)

Nevertheless, if efficiently planned and managed, tourism could become an ally and a supportive economic and political force for conservation, but achieving it is a big challenge as it requires involvement of various groups of stakeholders and a major behavioral change of the general public. Recent studies showed that although the environmental awareness among the general public has increased, tourists are not willing to change their travelling preferences. In fact, climate change is not considered at all by most tourists when planning a holiday trip (Hares et al. 2010). The value of freedom to travel is firmly established in the minds of many tourists and limiting travel is considered unacceptable (Becken 2007).

1.1   Problem setting

Because travellers do not have, for many reasons, interest or knowledge (information) to reduce or replace i.e. their Greenhouse Gas (GHG) emissions by carbon offsetting schemes offered by air lines or more independent environmentalist organisations

(Gössling et al. 2007), there is an arousing need for another approach. The possible solution could be an implementation of Travel Demand Management (TDM) - an application of strategies and policies to reduce travel demand, or to redistribute this demand in space or in time (Federal Highway Administration 2004 in CIVITAS 2012, 45). Taking into consideration high diversity of travellers' portraits, their purposes and preferences, TDM is seen to be more effective if adapted to certain travellers' segment.

TDM can be seen as a set of soft measures to enhance or promote sustainable travel options. Such measures in the context of current research mean *providing relevant travel advices and information* to help travellers choose options that reduce their negative ecological impacts when travelling. In practice, this could mean information on emissions by different modes of travelling, sustainable choices in consumer behaviour (diesel and hybrid technologies, local food and shopping, tips for saving energy, longer lasting clothes, recycling and assorting), travel distance and ways of travelling.

In the context of this thesis, the above mentioned information is suggested to be delivered to the tourists via mobile applications – "a type of application software designed to run on a mobile device, such as a smartphone or tablet computer." (Technopedia 2013.) This tool was chosen in response to current prevalence of smartphones and tablet computers with mobile Internet access that allows to plan and book vocations, and access the useful information at any moment, changing the traditional pre-trip planning (Scott & Frew, 2013; Wang & Fesenmaier 2013).

Choice of mobile applications was also driven by the desire to involve their users, who are believed to be mostly members of Generation Y – a biggest generational cohort since Baby Boomers, which is now reaching adulthood and getting the power of self-made decisions. Being young and skilful with the technology, Generation Y is better accepting and faster implementing the changes. In addition, being a trend-setter of modern society Generation Y is able to influence both their peers and other living generations. Furthermore, youth travel is a rapidly developing segment, in 2010 the number of international trips a year was estimated around 190 million and by 2020 it is predicted to reach 300 million a year (UNWTO & WYSETC 2010, 6).

1.2 Aim and research questions

The *aim* of this research is to find out how to enhance sustainable travel behaviour of Generation Y by using mobile applications as a channel of communication.

The target audience of the research - Generation Y is represented by the young people of today, aged between 18-34 that have been recognised by United Nations as a major force for development and social change (UNWTO & WYSETC 2010, 2). The context is leisure segment of tourism, as it is believed that due to young age Generation Y are not yet empowered to make own decisions when travelling on business. The instrument is mobile applications, chosen due their rapid development, easiness of use and assumed popularity among Generation Y.

This study is based on the assumption that targeted mobile applications, providing relevant information and guidelines about sustainable alternatives, may represent an appropriate way of communication with Generation Y in order to encourage sustainable travel behaviour.

In response to the assumption and the aim of the study, the following *research questions* have been formulated:

- What information and guidelines about sustainable tourism and travel are available to the public? Who are the main stakeholders responsible to promote it?
- What are the peculiarities of Generation Y as individuals, consumers and travellers? What is Generation Y's level of awareness and attitude towards sustainable tourism?
- What kinds of innovative tourism related mobile technologies are currently available? What is the level of acceptance of mobile applications by Generation Y and their attitude towards using mobile applications in travel related purposes?
- What could be the strategies to increase the influence of mobile applications on making sustainable travel choices by Generation Y?

The study is important, as it represents the first attempt to study how mobile applications – an innovative and rapidly developing communication tool, may enhance sustainable travel behaviour of Generation Y – currently the most promising tourist segment, known to be keen on technical innovations and mobile Internet.

It is interesting to find out if young travellers, grown up with the awareness of the importance of environmental issues and social responsibility, will consider travelling in a more sustainable way when they are aware of more sustainable options in tourism services, or will they just decide after price or other variables, even they have all the information needed in the decision making process.

1.3   Structure of the report

The report structure falls into five chapters. *Chapter 1* presents the introduction of the topic, describes the research background, problem setting and defines the aim and related research questions.

Chapter 2 is devoted to the theoretical framework of the research. It covers three main topics related to the study: sustainable tourism, Generation Y, mobile applications and their acceptance according to Technology Acceptance Model (TAM). All topics are closely intertwined throughout the chapter.

Chapter 3 describes selected research approach and methods and falls into following parts: definition and justification of chosen quantitative approach; description of data collection, including sampling methods and questionnaire as a research instrument; design of data analysis process, and finally, aspects of reliability and validity of the research.

Chapter 4 presents the key findings of the empirical study, united by certain themes.

Finally, *Chapter 5* provides conclusions and recommendations, as well as suggestions for future studies.

2 Sustainable tourism and Generation Y

This chapter will provide a theoretical framework of the research by means of in-depth study of existing theories and recent studies addressing sustainable tourism development, Generation Y and mobile applications as a possible connection between them.

2.1 Sustainable tourism

Global tourism is a huge and rapidly developing industry. About 980 million people travelled internationally in 2011 (a 4% increase over 2010) and this is expected to reach 1.5 billion by 2020 (Sustainable tourism 2013). Satisfying such a significant demand, requires a lot of resources and produces waste and GHG gasses, disturbing natural balance. According to statistics tourism and travel account approximately 5 per cent of global CO2 emissions. At first glance, this percentage seems not significant, but if we compare tourism with the emissions of countries, tourism would be the 5th biggest polluter worldwide. "By 2035, under a "business as usual" scenario, carbon dioxide emissions from global tourism are projected to increase by 130 per cent." (UNWTO 2009, 2.) Ironically, tourism is one of the most vulnerable industries in relation to climate change and pollution of the environment.

Regardless its imperfections, tourism has also a positive impact on the global society and economy as it makes a total contribution of 10,5 per cent of global GDP and holds approximately 10% of the world's employment (direct and indirect) (WTTC 2012, 1). International tourism and travel contributes a lot to the economy of many developing countries, reduces poverty, promotes the preservation of cultural and natural heritage and educates the society to be more open-minded and tolerant. The existing contradiction calls for strategies, which will mitigate the negative impacts of tourism, while stimulating the positive ones.

Sustainable tourism can be defined as "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities." (UNEP & UNWTO 2005, 11.)

Extending the definition, sustainable tourism has three main objectives:

> 1) Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
>
> 2) Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
>
> 3) Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation." (UNEP & UNWTO 2005, 11-12).

However, considering all these objectives when making decisions is very complicated, considering their overlapping interests. Therefore, as stated by McKercher (2003, 3), "Sustainable tourism is about achieving the best balance between economic benefits and social and environmental costs."

Sustainable tourism guidelines and management practices are to be applied to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments.

In relation to timeframe, sustainable tourism generally has mid-term to long-term orientation, due to the high complexity of its goals and a need for mass implementation. However, the need for design and implementation of sustainable tourism solution is very urgent.

2.1.1   Key actors of sustainable tourism

Tourism is a very complex industry involving numerous stakeholders which at times result in the conflict of interests. Nevertheless, the changes required to ensure sustainable tourism development are so significant in size and scope that can be achieved only in cooperation of stakeholders. Being aware of the major actors of tourism sustainable

development is essential, when trying to introduce new ideas and improvements to enhance it.

Swarbrooke (1999, 86) has defined six main actors in sustainable tourism development:

- The Public sector, represented by the government and local authorities
- The industry, formed by companies of different profiles and sizes, working in tourism, from global air-carriers up to small tourist agencies.
- The voluntary sector, which includes

  Public and industry pressure groups, like World Travel and Tourism Council (WTTC), UNWTO, UNEP and others;

  Professional associations, such as Association of Independent Tour Operators (AITO) and the Hotel, Catering and International Management Association (HCIMA) that discuss the possibilities of improving operations in respond to growing public pressure.

  And finally, *voluntary tourists*, who get together to achieve certain purposes, with no personal profit interest.
- The host community, which implies the local population of the destination
- The media, including both academic sources and mass media
- The tourist, as the most numerous and powerful group, capable to change the supply by changing the demand.

More to that, the recognition of the importance of the cooperation has recently led to the formation of international alliances, such as International Task Force on Sustainable Tourism development (ITF-STD) and the Global Partnership for Sustainable Tourism, which consolidate dozens of organizations around the world.

Apparently, for different sustainable tourism initiatives there would be different set of relevant stakeholders. Also, to avoid possible conflicts it is important to present the information to stakeholder groups considering their interests.

Identifying the main actors and their role in sustainable tourism is important in the context of this thesis, as at the end of this study, based on the research findings a set of recommendations to the stakeholders will be made.

In the following subchapter we will talk about practical implementation of sustainable tourism, known as sustainable consumption.

2.1.2 Sustainable purchasing in tourism: programs, trends, motivations and constraints

From the late 1980s the public debates around environmental, "green" and ethical issues in tourism have taken place in many countries. The concerns discussed included natural conservation programmes, animal and vegetation welfare, pollution and use of resources, recycling practices, organic products, ecological solutions for transport and construction and many more (Swarbrooke & Horner 2007, 181).

At the moment the greatest achievement in the field is a wide awareness of a need to mitigate man-made threats to the environment by adaptation to sustainable development of all industries, including tourism. According the statistics, 96% of Europeans say that protecting the environment is important for them personally, two-thirds of this group say that it is "very important" (World Business Council for Sustainable Development 2008, 15). In respond to growing awareness and concern the tourism industry is currently facing changes; however the progress is quite slow, due to some reasons that will be discussed further in this section.

Learning about the negative impacts of tourism and endangered environment of some destinations have led major tourism stakeholders to seek more responsible and nature connected holidays such as: *'nature-based tourism', 'ecotourism' and 'slow tourism'*. These alternative forms of tourism contribute to public acknowledgement of the importance of preserving natural beauties and spread the tourism demand more evenly in destinations, however there is an opinion that such tourism might be harmful for virgin natural sights (Swarbrooke & Horner 2007, 181; Chapman 2007, 3) and motivations for these ways of travelling might be far from pro-sustainable as well. According to Chap-

man (2007, 4) the demand for such tourism is growing not only because of the desire of travelling in a sustainable way, but also in response to increasing dissatisfaction with traditional tourism; easier access, due to the development of new transportation routes and infrastructure, a desire to show-off by means of pioneer travel and see the natural beauties before they disappear.

Another form of responsible tourism is volunteering, which is rapidly gaining popularity in the segments of youth tourism. Aimed to benefit both local society and ecology and educate more tolerant global society, it is also at times being criticised for poor organisation and a number of dishonest providers (MacKinnon 2009).

In general, the emergence and development of above mentioned alternative forms of tourism is a good sign, however it is important to acknowledge that it is still far from being considered a mass market and requires proper management and promotion.

As a result of pressure created by media, public sector and sustainability concerned organizations, a set of solutions encouraging sustainable practices have been created by tourism industry players. Among the most notable are voluntary carbon-offsetting schemes and green hotels. Unlike, alternative forms of tourism these programs are more directly applying to travellers eco-consciousness and therefore may provide a better evidence of the degree of public involvement in green or sustainable consumption in tourism.

Voluntary Carbon-offsetting schemes (VCOs) offer possibilities to mitigate the amount of produced GHGs by donating a proportional amount of money to non-profitable organisations and funds supporting environmental protection, or by doing some eco-friendly activities such as planting the trees, generating natural energy etc. VCOs were first performed by production giants and air-carriers that are considered to be the biggest global polluters, but due to the fact that tourism is seen by many as an unnecessary personal indulgence harming the environment, carbon off-setting is now offered also to individual tourists mainly by big players like air-carriers and international hotel chains. Even personal carbon off-setting was designed to be easy, and not expensive,

only 10% of travellers are practicing it, which is far too low to impact the global carbon emission level. The reasons of so low engagement are seen in a lack of transparency (Broderick 2008; Mair & Wong 2010), complexity and confusion of the customer (Broderick 2008), variability of schemes (Broderick 2008; Gössling et al. 2007) and conviction that the offsetting should be done by the polluter, meaning service-provider rather than the customer (Mair & Wong 2010).

Green hotels – are the properties that aim to mitigate the environmental effects of operations by saving energy and water, managing waste and educate associates and guests about environmental and sustainability issues (Lee et al. 2010, 902). Following the example, introduced by international hotel chains, nowadays more and more hotels are aiming to act or appear "green". In perspective this movement seems to have a great potential as it leads both to lessen of negative impacts on the environment and saving the operational costs due to reduction of needed resources. The green image is proven to add value to the hotel in the eyes of the customer, however, just like in case of VCO, tourists intention to pay more for eco-friendly accomodation is still low, as they believe paying extra would not provide an immediate benefit for them (Lee et al. 2010, 910). This fact, coupled with a need for a big investments to turn hotel to green operations and a variety of different non-comparable schemes of performed eco-friendlyness contribute to delay in green hotel development.

Use of *green fuels* and *alternative energy*, *hybrid-engine cars*, *green buildings*, *organic and fair trade products* are among the other sustainable solutions that can be applied to tourism, but the high cost of their development in conjunction with unwillingness of most of tourist to pay premium for such products evidence that their mass market production may take several decades.

In the last few years, a number of *sustainable travel guides* were created. These materials provide guidelines and tips for travellers on how they can make their travel more sustainable. For tourists sustainable travel is defined as respecting the environment and enhancing social and economic well-being of the local inhabitants during travelling (UNC 2009, 2). Respecting the environment usually mean reducing the use of re-

sources (save water, energy, reduce paper use and waste, purchase clothes and goods made from renewable and recyclable materials, etc.) and CO2 emissions, caused by travelling (use more ecological ways of transport, public transport instead of private car, hybrid-engine cars and car-sharing practices etc., choosing eco-friendly accommodation, etc.). Enhancing social and economic well-being of destination's inhabitants includes respecting the local culture and traditions, and supporting local businesses by purchasing locally made goods, crafts and other services. The guides are developed by world-famous travel-guides providers such as National Geographic, Lonely Planet and others, as well as by travel agencies and even universities. The advices given are quite easy to follow and in most cases help to save money by reducing resources, breaking the myth that sustainable and ecological travelling is more expensive.

The development of sustainable products in tourism is progressing, however the review of recent studies showed that the major behavioural change towards sustainable travelling failed to involve the majority of travellers.

In respect to diverse level of concern and willingness to adapt travel behaviour in a more "green" and sustainable way, Swarbrooke & Horner (2007, 182) have developed "shades of green tourist" - a scale depicting the examples of tourists behavior from "Not at all green", which is assumed to represent the large proportion of population to "Totally green", which is seen as a small niche market.

Miller (2003, 19) discussed the existing gap between stated consumer intentions regarding sustainable consumption and actual consumer behaviour and highlighted the difficulty of evaluating actual sustainable purchasing in tourism due haziness in identifying truly sustainable or ecological products, as a result of profusion of labels and standards. Top three reasons for the behavioural gap are lack of understanding or confusion, unwillingness to sacrifice own comfort for the sake of the environment and price (World Business Council for Sustainable Development 2008, 18).

Prillwitz and Barr (2009) made a broader investigation of researches investigating the *barriers to adopting sustainable behaviour* and summarized the main reasons: habitual charac-

ter of individual travel behaviour (Moller 2002), which reduces the perception of travel alternatives and forces a biased overestimation of costs of a change (Kenyon & Lyons 2003); subjective individual perceptions and interpretation of conditions; perception of not frequent tourist travel (compared to daily travel) as an extraordinary and highly private issue with inherent freedom of choice, which results in unwillingness to change behaviour (Becken & Hay 2007); high influence of socio-economic drivers, like income and house hold size (Böhler et al. 2006); lack of environmental awareness coupled with haziness in available information and low perception of individual responsibility.

Prillwitz and Barr (2009, 5) also highlight the importance of adopting messages concerning sustainability to different types of travellers and distinguishing daily and holiday travel, when designing sustainable solutions.

In pursuit of finding the explanation of failures to adapt sustainable behavior when travelling it is good to discuss the motivators and determinants. Swarbrooke and Horner (2007, 181-183) have summarized three *main motivators*, which include:

- An altruistic belief in the need to protect the environment
- A desire to feel good about their behavior as tourists
- A wish to improve their image among friends and relatives by being seen to be concerned with environmental issues.

Miller (2003, 18) and Lee et al. (2010, 901) add to the picture by highlighting a selfish nature of green consumerism, which is defined by Ottaman (1992, 3) as "individuals looking to protect themselves and their world through the power of purchasing decisions."

Along with motivators there are also *determinants* influencing the realisation of green tourist behaviour in practice, such as:

- Information, obtained from the media and pressure groups

- Amount of disposable income and other concerns such as poor housing or unemployment
- Personal previous experience of that of friends and relatives
- Interest in particular issues that may hinder the environment and animal welfare, like riding, climbing, etc.
- Preferences for particular types of holiday and destinations
- Membership of environmental organizations such as Greenpeace and others
- Advice and guidelines received from the industry, including tour operators, hotels, Destination Management Organisations (DMOs) and others. (Adopted from Swarbrooke & Horner 2007, 181-183).

Obviously, some of the determinants, such as an amount of disposable income and personal preferences, shaped by previous experiences, are hardly possible to influence. Therefore, the stress should be put on external determinates, such rising awareness through media and especially clear guidelines formulated by industry.

The unwillingness of the majority of tourists to change their travel patterns in a more sustainable way due to higher price and other reasons, evidence a need for another approach. An alternative solution is seen in Travel Demand Management (TDM). TDM is a concept that originates from the 1970s and 1980s from legitimate desires to provide alternatives to single occupancy commuter travel to save energy, improve air quality, and reduce peak period congestion. The traditional framework of TDM is management of regional or local transport that focuses on trips between home and work. Today TDM is defined as a broader concept that encompasses the need to optimize transportation system performance for commute and non-commute trips and for recurring as well as non-recurring events. (Federal Highway Administration 2004 in CIVITAS 2012, 45.) If TDM is traditionally used to encourage car users to set car-use reduction goals when experiencing impairments in travel options, it can also been used in encouraging travellers to choose more sustainable options in holiday and business trip planning.

TDM can be seen as a set of soft measures to enhance sustainable behaviour. One of it's the tools - delivering correct and relevant information about more sustainable travel alternatives by the means of new technology is in focus of current research.

Taking into consideration the development stage, haziness and unaccountability of many sustainable solutions aggravated with consequent unclear communication to consumers, who nevertheless are said to be aware and concerned regarding environmental challenges, there is a possibility that a proper guidelines on sustainable travel options, delivered via mobile application, can have a positive effect.

2.2 Generational theories

"Generational theory first introduced by Mannheim in 1928 (published in English language in 1952), seeks to understand and characterize cohorts of people according to their membership of a certain generation, which is objectively assigned to the year of birth." (Benckendorff, Moscardo & Pendergast 2010, 1.) According to generational theory, human foundamental values and beliefs, as well as behaviours and attitudes towards different aspects of life are mainly aquired during the formative years of childhood and adolescence under the effect of current economic, political, demographic and social curcumstances.

2.2.1 Major indicators and generation characteristics

Each generation embraces the period of about 20-25 years, - a certain era in human history that creates a framework of experiences for a group of people at the same lifestage and thereby determines a common social character among them. Mannheim (1952, 291) defined a concept of *generational location* meaning "a common location in the social and historical process, which limits members of the same generation to a specific range of potential experiences, predisposing them for a certain characteristic mode of thought and experience, and a characteristic type of the historically relevant action." "New generations begin when there's a significant change in the times they're going to experience in their youth or the values they develop." (Underwood in Abaffy & Rubin 2011.)

According to McCrindle (2009) there are three major indicators that distinguish the generations:

1. The age and life-stage, as at different age people tend to have different priorities and life-styles
2. Conditions, meaning current economic, social and political conditions.
3. Experiences or events that certain generations are facing during the personality formation period.

Each generation goes through four main phases of life during which their values and beliefs system are being transformed along with fulfillment of different social roles. This concept is detailed in the Table 1.

Table 1. Four phases in life.

Phase of life	Ages	Social Role
Childhood (formative years)	0-20	Growth:being nurtured, acquiring values and belief systems
Young Adulthood	21-41	Vitality: testing values
Mid-adulthood	42-62	Power:asserting values, managing institutions
Elderhood	63-83	Leadership: transferring values, leading institutions

(Benckendorff, Moscardo & Pendergast 2010, 3)

As Pendergast (2010, 4) explains: "generations move as a collective though society, passing through four phases of life, but always maintatining their unique generational characteristics."

Understanding and considering the peculiarities of different generations is of high importance, as generational traits find their reflection in many personal characteristics, like political behaviors, consumer patterns, work-related values, attitudes towards authority and family orientation (Gursoy et al. 2008 in Yeoman et al. 2011, 88).

The portrait of the generation is usually defined by various sources, - demographers and sociologists, mass media, commercial consultants, market researchers and members of the generation themselves (Howe 2006; Huntley 2006; Fields et al. 2008 in Benckendorff, Moscardo & Pendergast 2010, 3).

It is important to mention that generational theory is originally an American concept, which is widely accepted in Anglophone countries. Therefore, the available statistics usually do not cover the whole world. "Formative experiences that help to define a generation are not uniform across cultures and places." (Moscardo et al. in Yeoman et al. 2011, 92.) In recent study, conducted by Moore (2005 in Yeoman et al. 2011, 92) some differences between American members of Generation Y and the Chineese counterpart, known as Generation Ku have been observed, however same research has recognised that the strong influence of American culture in media is resulting in a global generation of members that are more alike than previous generations. All in all, it is important to recognise both the possible differences of Generation Y representatives across the globe and the influence of globalization, which promotes the development of generational theory and its terms and concepts in the rest of the world. However, at the moment the characterists widely applied to Generation Y are more applicable for residents of developed countries or big megaposis.

At the moment there are five main living generations on the planet, table below (Table 2.) summarizes basic information about them.

Table 2. A summary of living birth generations.

Birth years	Generation Name	Age in 2013	Social role	Values and beliefs
1925-1942	Silent or Veterans or Builders	88-71	Leadership: transferring values	Human rights, discipline, role models and rules
1943-1960	Baby Boomers	70-53	Leadership: transferring values, leading institutions	Work ethic, security, advancement
1961-1981	Generation X	52-32	Power:asserting values, managing institutions	Variety, freedom, individuality,scepticism
1982-2002	Generation Y	31-11	Vitality: testing values	Lifestyle, self-discovery, social, fun
2003 -	Generation Z	10 or younger	Growth: acquiring values and beliefs	In process

(Adopted from Benckendorff, Moscardo & Pendergast 2010, 2-5).

This research paper focuses on Generation Y - the most recent generation, which have completed its birth cycle and entered the phase of testing values. The next section will provide an in-depth overview of the portrait and background of Generation Y representatives and justify why this generation was selected for this study.

2.2.2 Characteristics and behaviour of Generation Y

Generation Y also referred as the Millenials, Generation Next, the Web or Net Generation, Digital Generation or Echo Boomers is now in the centre of attention of mass media and is an emerging topic in academic literature. This phenomenon can be explained by three main facts. First, that this generation is now entering adulthood, bringing their attitudes and demands, both as employees and consumers. Second, this generation is widely accepted in many ways to be uniquely different to all that have gone before. And, finally, it is the largest demographic cohort since Baby Boomers.

Following the logic of generational theory, in order to get an understanding of generation Y values, beliefs and other features, it is good to start from looking back into their formative years.

Also known as Echo Boomers, Generation Y are the children of Baby Boomers, born 1946-1964 and recognized as one of the largest generation during the latest history. Both the Baby Boomers and the Millennials are much larger than Gen X, born between 1965 and 1981 (Abaffy & Rubin 2011). Worldwide the population of Generation Y is estimated around 1,8 billion (United Nations, 2005).

There is no commonly agreed timeframe of Generation Y birth cycle - the start varies from 1978-1982 and the end is between 1995-2002. Different studies about Generation Y, which will be mentioned in theoretical part, are defining the age frames slightly differently. Although, the information is still believed to be reliable, in terms of this research, members of Generation Y are considered to be born between 1979-1995, currently aged 18-34, as younger audience is not yet able to make own travel decisions.

The formative years of Generation Y have been rich in political, social and technological changes; however, there are two profoundly influential factors that outweigh the rest: their adoring parents and the digital world (Yarrow & O'Donnell, 2009, 6).

Being breed up by Baby Boomers left a significant impact on the character of Generation Y and their set of values. Baby Boomers are known for being workaholics, which made them most affluent generation (Gillon 2004), but also resulted in a large number of divorces, single-parent families and smaller amount of kids, compared to previous generations. However, the Millenials, grown up in the era of sky-rocketing interest in and knowledge about child development and psychology (Yarrow & O'Donnell, 2009, 6), always used to be in the focus of their parents' attention, who tried to compensate the lack of time spent with children by assigning them to various activities and giving all possible care and financial well-being. Baby Boomers, like no other society in history, have had a focus on understanding their children and be friends with them, rather than applying an authoritative approach. Emerging technology also has contributed to

bringing the family closer together by providing a possibility of more frequent contacts with the help of mobile phones. (Yarrow & O'Donnell, 2009, 6.)

Such childhood on the one hand, has given Generation Y confidence, optimism, sense of being special and respect for the elders, but on the other hand, made them longer dependent on their parents support, postpone commitments to family and carrier and strive for the proper work-life balance, not to repeat the negative effects of hard-working lifestyle of their parents (Abaffy & Rubin 2011).

Second, but not less important influencer on Generation Y is technology. The formative years of Generation Y have coincided with an era of unprecedented technological changes that have changed the society. In the beginning of 80th, the world have gone through a transition from industrial to information-based culture and economy, from print-based to multi-mediated, digital approaches to communication effected by the development of ICT's (Information and Communications Technology) and globalisation (Benckendorff, Moscardo & Pendergast 2010, 6). The fact that Generation Y is the first generation born into The Information Age had led to creation of a larger than usual generation gap, dividing the society into digital natives – Generation Y and further generations and digital immigrants – previous generations (Prensky, 2006). Grown up along with the development of Internet and new means of fast communication such as mobile phones, e-mails, chats, blogs and social media, Generation Y possesses a natural skill of using the new technology for fulfilment of their needs, and connect with a digital world through play, enjoyment and desire, rather than a necessary requirement of work, which gives them a big competitive advantage over Baby Boomers and Generation X digital immigrants (Benckendorff, Moscardo & Pendergast 2010, 6).

Moreover, technological progress enriched school education and opened an easy access to a broad spectrum of immediately available knowledge via Internet making Generation Y the most educated generation ever. Being more skilful and educated than previous generations Generation Y are impatient when it comes for carrier planning and convinced that promotion decisions should be based on actual achievements, rather than seniority. Digital era also affected their way of learning and processing infor-

mation. Unlike, previous generations, they prefer learning in visual, kinaesthetic, multi-sensory styles in an interactive and unstructured way (Pendergast in Benckendorff, Moscardo & Pendergast 2010, 4). "Millennials work best if information is "cut into bits of what they need to know" and delivered on a schedule of when they need to know it." (Wiezel in Abaffy & Rubin 2011.)

While Generation Y had undoubtedly benefited from the main influencing events mentioned above, there also have been less positive developments that they have evidenced. Political and financial instability in the world, numerous terrorists' attacks, credit crisis, made Generation Y cautious spenders and highly preoccupied with security.

Last but not least important, is the popularisation of environmentalism and ethics in business and in consumption. Founded in the middle of 1970th, UNEP (United Nations Environmental Programme) and a number of related organizations have been rapidly developing in 1980th and 1990th and managed to attract attention of all sectors of the society. In the next sections we will explore how it had affected the actual behaviour of Generation Y, but the fact that they are familiar with the existing need of taking care of the environment and acting responsible is out of doubt.

A good display of all major events of Generation Y formative years and the traits they have caused is presented in table 3.

Table 3. Defining event and distinguishing features of Generation Y

Defining events	Distinguishing features
Internet and globalisation; Global popular culture; Easy world travel; Rise of digital media	Technology savvy, high ICT usage; Expect change and comfortable with it; Multitasks; Interested in creativity and innovations, entrepreneurial; Multicultural, tolerant of diversity and inclusive in style
Baby Boomer Parenting Structured/scheduled lives Active parenting	Individualistic, confident and strong-willed Optimistic and confident Close to parents and family

Fewer siblings More divorced parents More working mothers	Question rules but are respectful and trusting of authority Sheltered and indulged, seek constant feedback, rewards and recognition. Work-life balance is important
Higher level of education Staying at school longer Staying at home longer	Are learning/ education oriented Team oriented, value peers opinion and validation Group focused
Terrorism Increased violence Exposure to heroism	Civic minded, volunteers, altruistic Conscious of personal safety, distrust of strangers
Rise of Environmentalism	Concerned about the world and personal well-being, Volunteers, Not interested in traditional politics.

(Adopted from Yeoman et al. 2011, 90).

Among the interests of Generation Y could be mentioned: innovative technological devices, like smartphones, multimedia players, planchet computers, which enable digital natives to stay on-line and work, study or entertain themselves by surfing the internet, exloring social medias or playing computer games regardless where they are; keeping in touch with peers and family in person or via social networks; explorying and enjoying life and themselves, through travelling, following lastest trends, entertainment and fun; paying attention to personal health and wellness; social and entivormental sustainable development as a part of personal well-being and securing the planet for next generations. (Pendergast in Benckendorff, Moscardo & Pendergast 2010, 13; McCrindle 2009; Abaffy & Rubin 2011; Yarrow & O'Donnell 2009.)

2.2.3 Attitudes and behaviour of Generation Y as customers

The way Generations Y customers are seen by the media and industry players is contradictory. Respected global industry players like Deloitte, Oracle and EFMA as well as some authors (Kueh and Voon 2007; Deirdre et al. 2008) predict Generation Y to become the wealthiest generation ever: "In addition to the growing inter-family wealth transfer, their cumulative earnings are projected to increase by 85 per cent within the next 10 years, surpassing those of their Baby Boomer parents by as much as $500 billion. This segment is expected to have a higher disposable income than their predeces-

sors." (Oracle, 2011.) According to Huang and Petrick (2010 in Benkendorff et al. 2010, 29), "Generation Y has been acculturated in the environment that provides more opportunities and reasons to shop than ever before." Other researchers noted that Generation Y treats shopping as a form of leisure (Belleau at al. 2007 in Benkendorff et al. 2010, 29), enjoy purchasing and are likely to spend "freely and quickly" (Ma & Niehm 2006 in Benkendorff et al. 2010, 30). Meanwhile, car-producers and construction companies as a result of plummeted sales to young adults express their concerns in media, which after that named Generation Y as "The Cheapest Generation", because of their frugality and careful spending (Thompson & Weissmann 2012).

These contradictions might be explained by several circumstances that have influenced Generation Y customers.

1. Prosperous childhood and delayed financial independence

Generation Y, glutted with everything they acquired during formative years are demanding and very careful shoppers. On the one hand, they have a taste for expensive things and are well aware of brands and crave for ones that are creatively advertised. On the other hand, financial turbulence and continuous recession, downsizing and other current realities are believed to leave a long-term impact on Generation Y's consumer behaviour (Hein 2008; Palmer 2008; Yarrow & O'Donnell 2009; Pardee 2010; Thompson & Weissmann 2012).

More to that, their high ambitions and aspiration to find a desired job, rather than earning, doing something not interesting, lead to lack of money and longer dependence on family financial support (Palmer 2008; Pardee 2010). As Pardee (2010, 17) points out, "They are tightening their belts and re-evaluating what makes them happy and are spending money accordingly." Supportive features: *Demanding, sophisticated, picky to thriftiness*

2. Growing up in the age of widespread advertising

Growing up during the era of aggressive advertising, Generation Y is very discerning and can clearly recognise any marketing ploys. Abundance of questionable information used in advertising and in other spheres of life made Generational Y sceptical about

benefits of high consumption and pushes them to double check advertising assumptions by using technology and peers experiences and opinions (Palmer 2008).

Supportive features: *Discerning, incredulous, looking for a `real´ value*

3. Greater consumer expertise enabled by the use of technology

"Millenials are perhaps the most analytical and media-savvy generation ever". (Pardee 2010, 18.) Generation Y actively uses technology to find bargains and new ideas of consumption, which replace traditional shopping. One of the new trends in consumption picked up by Generation Y is "sharing economy" – services that use the Web to let companies and individuals share otherwise idle goods. Prevalence of smartphones with mobile Internet made it easy for Generation Y to get access to things, which earlier generation used to buy and hold. The existence of this trend is supported by facts - sales of cars to young adults have plummeted in United States, but at the same time car-sharing is a new rapidly developing service, one of the biggest providers Zipcar – car-sharing company, already accounts as many as 700 000 members. Similar services can be found in accommodation and used goods, which consequently leads to decay of purchasing (Thompson & Weissmann 2012, 50).

Use of ICT also helps Generation Y to find best price for a certain good or even a better or more affordable substitute. Being empowered with such information turns Generation Y into family shopping experts that can influence a wide range of purchases.

Supportive features: *Highly informed, independent in decision making, creative, pioneering, influential*

4. Peers opinion and experiences

Evolution of social media greatly affected Generation Y purchase-decision process and consumption. Millions of uses around the world share their purchases, experiences and activities in various social media platforms providing comments and pictures. Observing this trend, Joachimsthaler (2010, 2) has introduced a new term in marketing called "Social currency" - the extent to which people share the brand or information about the brand as part of their everyday social lives." Verbal or written, social currency is agreed to be one of the main drivers of Generation Y consumer behavior (Morton 2002).

Supportive features: *Egocentric, influenced by the society, curious*

5. Postponing commitments and drift to "simple", green lifestyle

Unhurried approach to carrier and family planning as well as being aware of price of possession on the example of their parents, results in Generation Y postpone big purchases, like cars and real estate, preferring rent or share; and limit their consumption, following the new trend of simple life, which teaches not to buy unnecessary things and learn to be happy living within one's means (Palmer 2008; Yarrow & O'Donnell 2009). According to McCrindle (2009), absence of financial commitments results in "over 70% of Gen Y's income spent arbitrarily, with majority going on entertainment, travel and food." As stated by Hein (2008), "Gen Y's enjoy affordable luxuries, but they will pay a premium for items that go in their bodies or in their home." In addition, pursuit for self-actualisation, promotes Generation Y to invest less money in physical things and more in themselves (Thompson & Weissmann 2012, 51). These trends support their concern regarding environmental and social sustainable development. However, several studies show their unwillingness to pay extra for "green" products and services, unless they offer mutual benefit (Collins & Gardner 2009; Voorhees et al. 2010).

Supportive features: *focused in short-term wants, hedonists, adaptive to new ideas*

Now, based on the summary of above mentioned features, it is good to list some recommendations how to communicate with Generation Y, so get their attention and involvement. Pardee (2010, 17) claims that successful advertising message for Millennials should radiate "Transparency, authenticity and relevance" and offers 5 tips for marketing to Millennials: "Be Fast, Clever, Transparent, Don't "technologize everything" and Give them a reason to talk about you", meaning using short and clear messages, which are relevant, fun, involving and generate discussions, increasing social currency. Schoonover (in Bruno 2009) supports that concept claiming that "something meaningful and contextually relevant" get a better response. McCrindle's (2009, 5) mix includes "Real" – honest and trustworthy, "Raw" – spontaneous and interactive, "Relevant", "Relational" – meaning openness, vulnerability and understanding of Yers. Taking into consideration, Millennials ability to quickly process the information in multi-sensory way, including visual, it is good to use images that talk for themselves, dispelling Generation Y's suspicions.

Preferred channels of communication, obviously include social media, which is considered to be a channel Millennials trust the most (Thompson & Weissmann 2012, 50), Internet, new technological channels like various mobile applications, personalised viral-video campaigns, targeted events and other channels, dependent on the context, as long as they are relevant and provide a platform for innovative and creative and fun advertisements (Morton 2002; Pardee 2010).

2.2.4 Generation Y as travellers

Generation Y travellers already represent a significant segment in international tourism and the dynamics of its growth puts it in the centre of attention of the travel industry. According to World Youth Student & Education Travel Confederation (WYSETC) (2013) "Young travellers represent one of the fastest growing segments of the travel industry accounting for 20% of all international arrivals, generating an estimated 160 million visitors and a global market worth US$173 billion a year."

It is an acknowledged fact that Generation Y loves travelling, as a proportion of total income, they spend on international travel is more than any other group (UNWTO & WYSETC 2008). However, according to Amadeus (2009) this generation is travelling for different reasons, seeking different experiences and, therefore have different travel habits than their parents.

It is good to start with looking at their attitude towards tourism. "Travel is our blood" agreed 73 per cent of 24,500 respondents participated in Lonely Planet's 2007 "Travellers' Pulse" survey (UNTWO & WYSETC 2008, 5). Indeed, Generation Y view travelling as inseparable part of life, related both to work and leisure and as a way of world and self-discovery. According to Travelmatch, travel is the most important indulgence of Generation Y, known for their love of luxury products and leisure (Francis in Petrak 2011). At the same time, WYSETC (2013) claims that 70% of youngsters travel with a purpose, seeking out a mix of meaningful travel ambitions such as studying, learning a language, working and volunteering abroad (which helps broaden their skill set) and increasing awareness of diverse cultures.

As stated by Francesco Frangialli, the Secretary-General of WTO (World Tourism Organisation) "Youth travel enables young people to enrich their lives with new experiences, to enjoy and be educated, to learn to respect foreign cultures, to establish friendships, and above all to contribute to international cooperation and peace throughout the world."

Speaking of their features as travellers, it is good to mention an extensive research conducted in 2007 by WYSETC which has involved more than 8500 Generation Y travellers and revealed a number of interesting assumptions, presented in table 4.

Table 4. Generation Y travellers main features with explanation

Features	Explanation of feature
Travelling more often	Average number of trips has increased in last 5 years
Exploring more destinations	Take more trips outside the local region and explore new areas of the world
Spending more on travel	As a proportion of their income, spend more than any other group on international travel
Booking more over the internet	Early adopters of new travel technology
Experience hungry	Want a range of different experiences often involving everyday life and culture of places visited, including contact with local people
Information hungry	Consult a greater number of information sources to plan trips
Intrepid travellers	Are not deterred by problems such as terrorism, natural disasters and epidemics – mitigate these risks through information
Getting a lot out of their travel	Travel makes them want to travel more, serving as a stimulus to learn and develop, including developing greater natural understanding

(WYSETC 2007 in Benckendorff, Moscardo & Pendergast 2010, 11)

The features presented above are closely linked to values, desires and aspirations inherent to Generation Y. Travelling fits perfectly in their individualistic nature, habit of postponing family and carrier commitments in favour of enjoying and exploring life and finding a meaningful contribution that they can make.

Available technology and social media also make a contribution towards Gen Y active travelling. Abundance of travel information and easiness to plan and book allow Millennials to make travel effortless and affordable, while the social media allows Generation Y to stay connected with family and friends away from home and get inspired by pictures, comments and location updates made by their digital "friends".

Just like the features, preferred ways of travelling also can be seen as the outcomes of their generational roots. Being educated, independent and sophisticated by childhood travel experiences, "Gen-Y travellers tend to seek authentic, individualised experiences that are an alternative to mass-tourism."(Moscardo et al. in Yeoman 2011, 102.) Taking into consideration the significant age difference of Generation Y representatives, it is difficult to identify most preferred way of travelling common for everyone. Nevertheless, current trends in tourism such as backpacking, gap years, volunteering, au pair, adventure tourism and short city-breaks are the ones most appreciated by the Millennials (WYSETC 2008, Huang & Petrik in Benckendorff et al. 2010; Petrak 2011).

Desire to get a deep understanding of local culture and lifestyle result in greater amount of long-term vocations (UNTWO & WYSETC 2008, 7), however a recent PhoCusWright study found out that 18- to 34-year-olds are the biggest spenders on short getaways as well, second only to retirees (Amadeus 2009).

Preferred destinations widely vary, yet Europe, developing economies like BRICs (Brazil, Russia, India and China) and warm destinations highlighted by Travelmatch, are more popular than others, due to the diverse cultural experiences they can offer (Petrak 2011). Another research carried out in 2005-2006, involving 318 American Generation Y members, compared their attitudes and preferences to Baby Boomers and Generation X, and revealed that Millennials, when choosing the destination, are

mostly attracted by the presence of big city nearby and entertainment possibilities like night clubs, dancing activities, amusement/theme parks and shopping opportunities, which seems quite justified given the youth and desire for fun and entertainment built-in Generation Y (Huang & Petrik in Benckendorff et al. 2010, 33).

Preferred destinations as well as booking channels greatly depend on the origin of Generation Y. As mentioned by N. Martin an ATTA (Adventure Travel Trade Association) associate and adventure travel consultant, Western Generation Y mostly perform "do-it-yourself attitude" when it comes to booking, due to familiarity with travel, confidence using the web to plan trips and of their budget constraints, they are also more interested in travelling in developing countries. Meanwhile, BRICM (Brazil, Russia, India, China and Mexico) nations, who do not have as much of a tradition of international travel as their Western counterparts, and are perhaps more likely to travel with a tour operator and visit traditional tourist sites, like Europe. (Petrak 2011.)

All in all, one of the most important facts about Generation Y touristic patters for current thesis project is that travelling gives an opportunity to reinforce positive values, as over 80% of young travellers have reported that their trips have changed their overall lifestyle in some way, and the majority noted that they were travelling in a more responsible manner and thinking more about issues such as social justice and poverty (UNTWO & WYSETC 2008, 37). In the next section a broader correlation between Generation Y tourists and Sustainable tourism development will be discussed.

2.2.5 Generation Y and Sustainable Tourism

It would be appropriate to begin this section with explanation why Generation Y was chosen in this thesis as the most significant target group for implementation and promotion of sustainable tourism concepts. Here is an overview:

1. Quantity of population and the significance for travel industry

As have been mentioned earlier, Generation Y it most numerous generation since Baby Boomers and the most promising and fastest growing segment in travel industry, both due to their population and active travelling related to leisure and business.

2. Soon will rule the game

At the moment Generation Y is replacing the older generations and soon will become the dominant generation in the workforce. Due to higher skills and demographics, they are also predicted to get the power at earlier age. As mentioned by Abaffy and Rubin (2011) the values of the dominant generation in the workplace become the values of the leaders guiding the nation. Therefore, the attitudes, beliefs, interests and styles of Millennials today are a strong predictor of the nation's direction. (Abaffy & Rubin 2011.)

3. Better accept the changes

Grown up during the era of great changes, Generation Y learned to accept them as an integral part of life. "While the older generation tends to react to change negatively, the younger generation is more open to changing the way the process is done and using new technology to increase the efficacy of the process", says Rodrigues. "Ultimately, these innovations will help us find new ways to deliver the final product faster, safer and under budget." (Rodrigues in Abaffy & Rubin 2011.)

4. Quickly learning and adopting new things

High level of consumer expertise and Millennials' willingness to follow new trends make them a highly important target group in the context of this thesis. As stated by Amadeus (2009), "Gen-Yers demand a travel experience that is reflective of their modern lifestyle, including current and eco-friendly hotels, airlines and transportation."

5. Have a great influence and lead by example

The characteristics of Generation Y and currents demographic and social settings, turn them into real trendsetters, as their influence is spreading in several dimensions: on their parents Baby Boomers, their peers (Generation WE, as highly depend on peers acceptance and validation) and their younger followers and children Generation Z (Yarrow & O'Donnell 2009; Deirdre van Hume et al. 2008).

6. Dual presence in tourism: both employees and customers

Apart from attracting millions of young travellers, tourism is also known as an industry employing a lot of young professionals. This cooperation is capable to make a change, like never before.

Realities

Meanwhile, young travellers are regarded be "tomorrow's globally oriented citizens, leaders in future travel trends, and pioneers in contributing to Millennium Development Goals" (UNWTO & WYSET 2008), let us have look on the current attitudes and performance of Generation Y towards sustainable consumption in general and sustainable tourism in particular.

In late 1970's and 1980's when Generation Y was born, the environmental movement finally has gained governmental support reflected in a number of Acts and active propaganda of the need to preserve the environment through "Reduce, reuse, recycle" practices. Therefore, "going green" is not a new thing for the Millennials, who are generally aware and concerned about man-made threats to the environment and importance of switching to sustainable development. However, there are some constraints putting them off sustainable tracks.

First is the haziness around the around the concept of sustainability, caused by variety of terms, proposed activities and lack of transparency in their actual outcomes (Mair, 2010). A broad research of Generation Y and sustainability carried out by Deloitte also revealed a lack of knowledge of innovative sustainable technologies (Voorhees et al. 2010, 2), which may represent a significant barrier for adoption.

Second, noted by Howe (interview in Pardee 2010, 17), who introduced the term "Millenial" in the 1990s and also have written several books about Generation Y, "Millennials trust in their institutions more than Baby Boomers and Gen Xers and therefore perform the attitude "Someone will fix it", when there is no clear instructions how they should deal with the problem."

Third is a contradiction between the awareness and desired support towards environmental protection and desire to pay extra to contribute in it, performed by Generation Y, which is an outcome of previous two points and inherent frugality, caused by limited finance. As stated by Voorhees et al. (2010, 3), "Gen Y does have concern for the environment when making purchases, but without an economic benefit in making eco-

friendly choices, they would likely not make these purchases." Therefore, to promote adoption of the sustainable technologies industry has to show both their environmental and economic value for a consumer.

Last, but not the least, is unwillingness to sacrifice own comfort in a favour of saving the planet, revealed by a number of researches (Mair 2010, Voorhees et al. 2010).

Still, existing awareness and concern about the environment as well as social benefits of "going green", revealed by Voorhees et al. (2010, 11) appear to be a good base and coupled with correct marketing highlights and further education of customers can bring good results.

Perspectives

It is important to mention that sustainable development and tourism is not only about ecological activities, but also about rationally managing the demand.

WYSETC have noted that Generation Y's way of travelling in itself contributes to sustainable development. Their desire to go off-beaten paths, contribute to spread tourism outside major gateways – over 46 per cent travelled to locations outside major gateway cities in 2007. In addition, a growing number of young adults want to help people and make a contribution to the places they visit (42% of respondents in 2007, compared with 27% in 2002) while their desire to get to know other cultures leads to developing more direct contacts with local communities and reduction of economic leakages. (UNWTO & WYSETC 2008).

The positive influence of Generation Y to sustainable tourism development it already here. However, taking into consideration their skills and influence, under the correct guidance it can achieve much greater level.

2.3 Mobile applications and sustainable tourism

Information and Communication Technology (ICT) and its components have revolutionized most areas of contemporary life and tourism and travel is not an exception. ICT's profound implications for tourism have created a new industry, called e-Tourism, which reflects the digitalization of all processes and value chains in the travel, hospitality and catering industries (Buhalis & O'Connor 2005, 11).

ICT effects are versatile, as they influence consumer behaviour, the way industry players business is run and travel distribution system. As any significant change ICT presents both challenges and great opportunities for tourism industry in general and sustainable tourism development in particular. (Buhalis & O'Connor 2005, 11)

This chapter will focus on mobile applications – a rapidly developing ICT component, which is believed to have a significant influence on decision-making process (Selinger & Seager 2012; Scott & Frew 2013; Wang & Fesenmaier 2013) and it actively used by Generation Y (CWT 2011; CISCO 2012; Greenberg 2012; Rogers 2012; EMarketer 2013).

2.3.1 Identification of new mobile tourism related applications

With more than 5 billion mobile phone users in 2010, the mobile web is expected to be bigger than desktop internet by 2015 (Manglis 2010.)

Mobile application also known as "app" is a term used to describe software that runs on smartphones, palmtop or personal digital assistant (PDA) and tablet computers. "Mobile applications are designed to educate, entertain, or assist consumers in their daily lives." (Hudson Horizons Internet Glossary.) Mobile applications are available from various application distribution platforms, designed by a certain mobile operating system such as Apple App Store, Blackberry App World, Google Play, Windows Phone Store, etc. for a corresponding smartphones such as IPhone, BlackBerry, Android or Windows phone, and other mobile devices such as IPads, Samsung Galaxy Tabs and others. Some applications are available for free, meanwhile some need to be

purchased, however the price is generally quite low, which makes them available for a majority of users.

Mobile applications are usually aimed at managing specific task and provide its user with context specific data just when the user needs it and limits choices to the tactical needs of the moment. Due to the ability to provide direct and immediate access to information and offer solutions based on user preferences and experiences, mobile apps are predicted to make a revolution in decision-making processes. (Thain 2012).

According to ABI (in Nurture Lakeland 2011) the amount of existing applications in 2011 exceeded one million, while the number of application downloads reached 29 billion. Applications are now being used in various fields: as a form of entertainment (games, quizzes, Photoshop), mobile social media platforms (Facebook, Foursquare, Instagram), work-related applications as a way of information distribution to all organizational levels (Thain 2012), intelligent 'personal assistants' and many more. Selinger and Seager (2012) have compared smartphone mobile applications as "extended minds", due to their ability to help people with making all kind of decisions and tasks.

Travel-related applications are listed as the seventh most popular category of apps being downloaded (Mickaiel 2011). In 2011 there have been already more than 17000 travel related applications (ABI Research in Nurture Lakeland 2011). According to TripAdvisor, 60 per cent of smart phone users have downloaded travel apps and 45 per cent of those individuals plan to use it for travel planning and research (Mickaiel 2011 in Kennedy-Eden & Getzel 2012). More to that, 55 per cent of travel apps are purchased within 3 days of travel or while travellers are at the destination (Mickaiel 2011)which illustrates how important mobile apps are in influencing en route decision-making (Kennedy-Eden & Getzel 2012).

Kennedy-Eden & Getzel (2012) made a broad investigation into existing travel related-applications and created a taxonomy categorized by the type of service they provide.

Table 5. Tourism mobile applications by service provided

Service type	Specifications
Navigation	GPS, Augmented reality, Way Finder
Social	Social networks, communication
Mobile Marketing	Contests/Awards, Alerts, Discounts
Security / Emergency	Medical, Emergency, Information (Weather forecast, etc.)
Transactional	Auctions, Financial / Banking, Tickets / Reservations, Shopping
Information	General travel information, city guides, event schedules, translators
Entertainment	Games, Video/TV, Music, E-reader, Photographs, Fantasy sports

(Kennedy-Eden & Getzel 2012)

It is important to mention that some of the most popular applications, used by travellers are not directly related to travel and tourism (Murdock 2011, Kennedy-Eden & Getzel 2012). This might be explained by CISCO's observation (2012) that out of all the applications being downloaded daily, a surprisingly low number are used on a regular basis, - 70 per cent of Generation Y are using fewer than 10 smartphone applications daily. Therefore, it is a complicated task to design a new application and attract users, who will regularly use it. Instead, trying to convey travel information through popular but indirectly connected apps appears to be a good alternative. For example social media applications, do not relate to tourism directly, but can be used for information search and trip planning, based on experiences and pictures posted by users. According to recent survey made by Intercontinental Hotels chain, one in four have used social networking to plan their travel (IHG 2013, 6). The influence of social media applications on travelling intentions and planning process have been supported by a number of recent studies (Cox et al. 2009; Xiang & Gretzel 2010; Scott & Frew 2013; IHG 2013, 6).

Mobile services have a huge potential in tourism and may have a high societal impact, as can be used for improve the "choice architecture" by providing necessary information and guidelines (Selinger & Seager 2012).

2.3.2 Significance of mobile applications in sustainable tourism development

Mobile internet and supporting applications have changed travel forever. Keeping the travellers in touch and in comfort, they influence travel-planning and decision making process (Wang & Fesenmaier 2013) and as a result re-engineer the whole process of developing, managing and marketing tourism products and destinations (Buhalis & O'Connor 2005).

ICT and especially mobile applications have a great potential in supporting sustainable travel development as they provide informational benefits both for Destination Management Organizations (DMOs) and travellers.

Now let us go through the reasons why mobile apps are believed to enhance sustainable travel development:

1. Give distant access to relevant information

In the current world of informational abundance, targeted for concrete tasks mobile apps are able filter the information and construct the choice architecture, encouraging for a concrete action. The relevance of information is ensured by positioning user current location, considering his preferences and previous experiences, thanks to applications ability to connect to other applications and get customised by user (Selinger & Seager 2012.)

Moreover, the use of mobile application at different stages of traveling can be also considered sustainable, as it saves both efforts and resources: there is no need to travel to tourist agency to book a tour, no need to distribute printed materials, like brushers, guides, maps, etc. Considering the sizes of travel and tourism industry, these changes can already bring significant improvements.

2. Are able to coach and motivate a behavioural change

Mobile applications' ability to influence and change users behaviour capitalizes on three inter-related movements – *nudging*, *the quantified self* and *gamification* (Selinger & Seager 2012.)

Nudging originates from a bestseller by Thaler and Sunstein (2009), who discussed the ways of improving decisions about health, wealth and happiness, empathising the importance of "choice architecture", meaning the circumstances of choice.

The quantified self is a social movement uniting people, who are interested in self-knowledge through self-tracking, such as taking records of one's work, sleep, exercise, diet, mood, or anything else, which is frequently done with the help of relevant mobile or tablet applications (Quantified Self 2013).

Gamification is an innovative tool to increase engagement and desired performance of mobile application users and especially Generation Y.

Gamification is a participation-and-reward system that focuses on users sharing information with their (social) networks (Swan 2012). The rewards for participation may vary from virtual points and badges to physical rewards, such as discounts, free complements, access to special events, etc. Along with earning rewards, a user can see the achievements and rewards of other members, which stimulates deeper involvement through adding competitiveness to the process. Taking into consideration Generation Y's desire to share their experiences with the society and experience a fun (game) element in their every activity, adding gamification to their everyday processes is believed to drive their engagement. As a result, gamifying of processes is projected to rise both as a tool of managing innovations and changes inside the companies and in engaging and retaining the customers. According to Gartner, by 2014 gamification will become as important as Facebook, Ebay or Amazon and more than 70 per cent of Global 2000 organizations will have at least one gamified application. (Swan 2012.)

In the context of this thesis projects the examples of these three motivators can be the following: Nudging: sustainable travel advisors, mentioning for example how many

trees could be saved if the user will choose more ecological way of transport, accommodation, etc. Quantified self: carbon calculators, showing the dynamics of produced emissions and giving tips how to offset them. Gamification: getting virtual rewards or even real discounts for making more sustainable choices and ability to share the achievements with friends.

3. Support the changing process of travelling caused by ICT

Prevalence of smartphone and other electronic gadgets with permanents internet access have undoubtedly changed the way people plan and purchase tourism services. More and more people every day appreciate the freedom given by mobile internet and do the bookings via smartphone regardless where they are (Wang & Fesenmaier 2013). Regarding these circumstances, mobile applications are just in the right place to be.

4. Increase tourists satisfaction

Being connected and having access to the needed information play very important part in tourists satisfaction (Buhalis & O'Connor 2005; Wang & Fesenmaier 2013), which was identified as a baseline for sustainable travel development by UNEP and UNWTO (2005, 12).

5. Provide information and tools to DMOs

To be able to better plan and manage tourism in a sustainable way, DMOs need to constantly monitor and analyse tourists' activities and environmental conditions and ICT-based applications appear to be good tools for that. Destination Management Systems (DMS), Environmental Management Information Systems (EMIS), Geographical Information Systems (GIS), Global Positioning System (GPS) and finally Tourism Information System (TIS) and already developed and ready to use. (Ali & Frew 2010, 2.)

Among the most effective DMOs tools for managing sustainable tools are Location Based Services (LBS), Destination management Systems (DMS) and Intelligent Transport Systems (ITS) and Visitor Management applications – technique to control visitor numbers, manage tourist flows, protect sensitive areas and manage visitor time in queues (Page & Connell 2009 in Cantoni & Xiang 2013, 43).

6. Help to establish effective partnerships and connect with local community

As mentioned by Buhalis and O'Connor (2005), ICT gives an opportunity for small businesses to manage global distribution of their services at affordable costs. Moreo-

ver, connections which can be made with the help of applications, for example digital travel guides or social networks might be used for spreading the tourist demand more evenly in destination.

7. Represent a growing and promising channel of communication for current and future generations

Mobile apps are considered one of the most effective communication tools nowadays (Manglis 2010). Their popularity among Generation Y, numerous, young and most promising current generation, makes them even more significant.

More to that, in respond to growing social trend of using mobile applications in daily decision-making and problem-solving, a variety of moral coaching applications have been developed to enhance responsible and ethical behaviour and consumption.

To name a few, - Siri 5.0 is an always available guide to moral behaviour; iRecycle helps to find out where to dispose used materials, Good Guide and ShopEthical! 2012 promote sustainable purchasing (Selinger and Seager 2012). Other forms include pages in social media, mobile versions of mass media, travel blogs, etc.

As discussed above mobile applications theoretically have the potential of enhancing sustainable tourism development and travellers behaviour. However, their successful practical implementation depends on a number of variables such and clear understanding of what sustainable travelling is and how it can be achieved by the individual, willingness and motivation to adapt travel behaviour in a sustainable way and finally a degree of user's technology acceptance. These questions will be further explored in the theoretical sections and then tested in the course of empirical research.

2.4   Technology Acceptance Model

Although, the computer self-efficacy and new technology adaptation of Generation Y in general is considered to be high, for the purpose of better understanding how the new technology, in this context, - mobile applications can influence their behaviour, it is good to test the degree of acceptance of this particular technology.

Technology Acceptance Model (TAM) is the first and most citied model, aiming to predict user acceptance and use of innovative Information Technologies (IT) (Davis, 1989). It was founded on the base of Theory of Reasoned Action (TRA), introduced by Fishbein and Azjen's (1975), which aimed to predict and explain human behaviour in general.
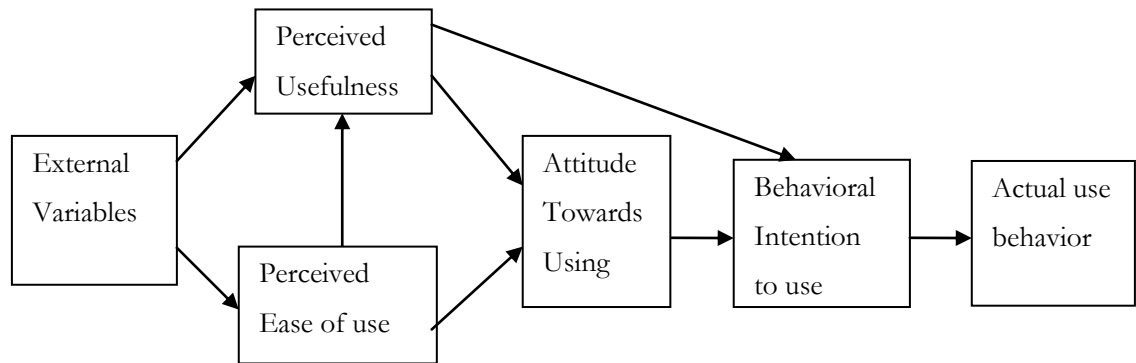

Figure 1. Technology Acceptance Model (TAM) (Davis, Bagozzi & Warshaw 1989, 985)

The two central determinants in TAM are *Perceived usefulness (PU)* - "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis 1989, 320); and *Perceived ease of use (PEU)*, - "the degree to which a person believes that using a particular system would be free of effort" (Davis 1989, 320). In addition, PEU is influencing PU based on hypothesis that improvements in ease of use of a technology contribute to increased usefulness due to saved effort (Davis et al. 1989).

According to Davis (1989), the combination of these variables is expected to build the *attitude* towards using the new technology, which influence *behavioural intention to use* it and finally affects its *actual use*.

The definition of *External variables* has been numerously revised since the creation of the model, first representing solely system design characteristics (Davis 1986) and then was enriched by user training and support, user participation in design, the nature of implementation process (Venkatesh & Davis 1996) and finally resulted in Unified Theory of Acceptance and Use of Technology (UTAUT), which expanded the concept of

TAM by recognising the influence of expanded variables (Venkatesh et al. 2003), such as:

> *Performance Expectancy* – Perceived Usefulness coupled with extrinsic motivation, job-fit criteria, relative advantage of using and outcome expectations.
>
> *Effort Expectancy* – Perceived ease of use (perceived complexity vs. ease of use)
>
> *Social Influence* – the degree to which an individual perceives the importance of others believe he/she should use the new system. It consists of personal image, social factors and subjective norms of behaviour.
>
> *Facilitation conditions* – the degree to which an individual believes that organizational and technical infrastructure support the use of new system.
>
> *Background variables* – user's gender, age, experience and voluntary intention to adopt the new technology.

The interaction of all defined variable is shown on the UTAUT model below.
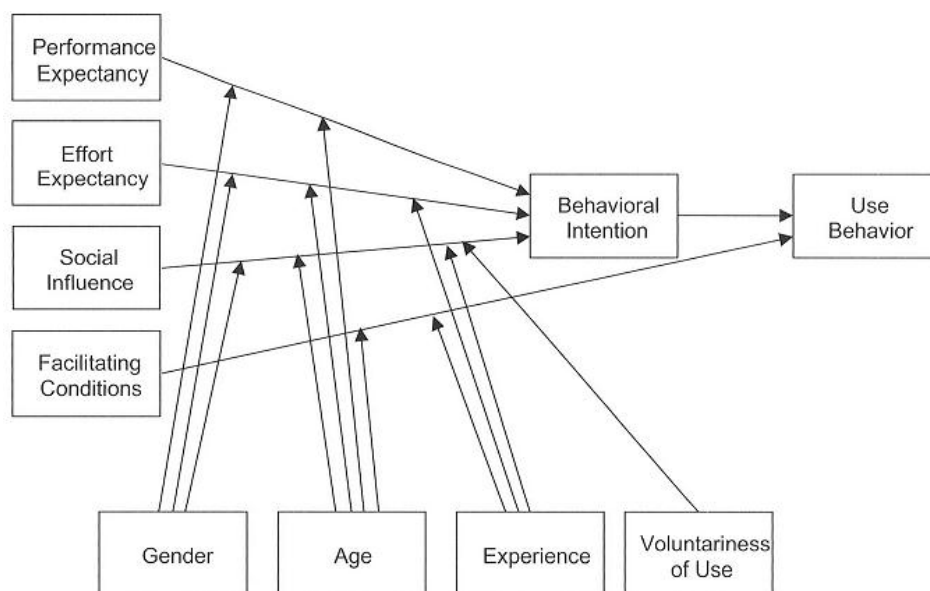
Figure 2. UTAUT - TAM with extended variables (Venkatesh et al. 2003, 447)

Although the variables introduced by Venkatesh are seen to be highly relevant in the context of current research, there is one more model, which is worth discussing.

In 2009 based on the UTAUT model (Venaktesh et al. 2003), a model evaluating travellers' extent to use mobile technologies was introduced (Oh, Lehto & Park, 2009, 773).

In that case background variables were narrowed down to previous usage of ITC (necessary skills) and former trip experiences, - domain knowledge, which is recognised to be one of the most important factors in decision-making process in tourism .
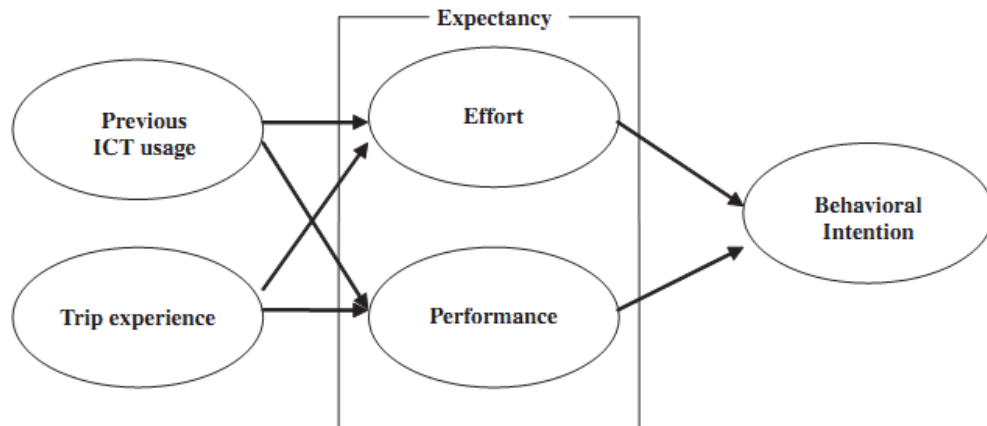
Figure 3. TAM of using mobile technologies by travellers (Oh, Lehto & Park, 2009)

In the context of this thesis the most appropriate model is seen as a combination of external variables of UTAUT by Venkatesh et al. (2003) and TAM of using mobile technologies in tourism by Oh, Lehto and Park (2009).
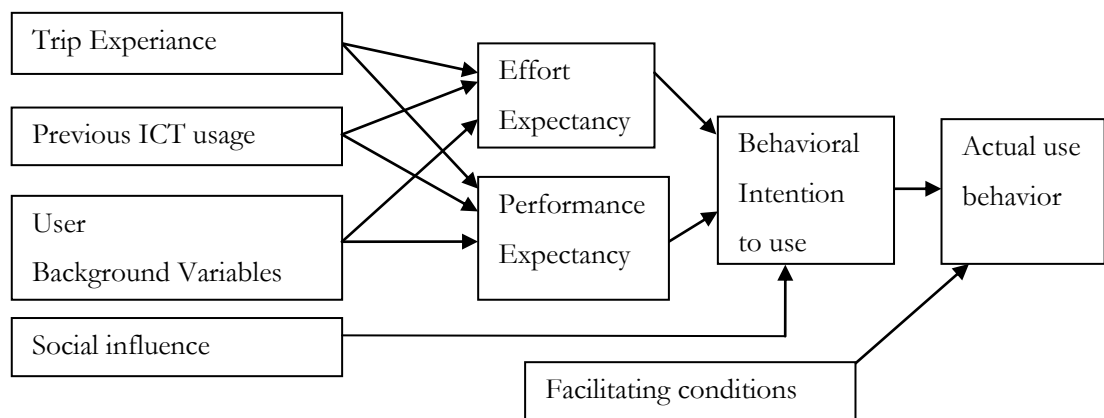
Figure 4. The proposed model for this study

Now, it is good to present a description and justification of the model and its elements. First two external variables: *Trip Experience* and *Previous ICT Usage* proved their significance in TAM in tourism context (Oh, Lehto and Park 2009) and therefore, are seen as relevant, because current research also explores the use of innovative mobile technology in tourism.

Regarding the unique characteristics of Generation Y, as the first generation with innate technological skills and great need for social interaction and acceptance, *background variables* and *social influence* from Venkatesh's model (2003) are expected to have significant impact and hence need to be included in the model as well.

Meanwhile, trip experience; previous ICT usage and background variables are influencing effort and performance expectancy of an individual, social influence has a direct connection to behavioural intention, as it does not depend on the user features and skills, but only on perceived importance of social influence.

Facilitating conditions, maintained by the technology developer or implementer include: accessibility of new technology, availability of guidelines and resources necessary for implementation, compatibility with user needs and lifestyle and encouraging of use via creating motivation or/and added value.

The proposed model will be used in the design of the empirical research, which includes examining the level of acceptance of new technology, represented by mobile applications by target audience - Generation Y.

2.5   Generation Y as users of mobile applications

After discussion of TAMs, aimed to predict the acceptance of mobile applications by Generation Y, it is time to make an overview of factors and circumstances, influencing the adaptation and practical implementation of mobile apps in the real life. The review of literature and recent studies has revealed a number of reasons evidencing current and future presence of mobile applications in the life of Generation Y.

1. *Available statistics of significant use of smartphones and other mobile devices by Generation Y*
As discussed earlier, the ability to use mobile applications requires possessing a smartphone or mobile computer, such as Personal Digital Assistant (PDA) or Tablet. Therefore, there is a link between a number of Generation Y individuals possessing the above mentioned mobile devices and potential mobile applications users.

A recent study by Forrester conducted in United States found that 97 per cent of Generation Y consumers aged 24-32 years, own a mobile phone, out of which 72 per cent have smartphones. This percentage is higher than in any other age group (Emarketer 2013).

The validity of Forrester's results in relation to Generation Y members in other countries of the world has been supported by the 2012 Cisco Connected World Technology Report (CCWTR), a survey that has examined 1800 young adults aged 18-30 from 18 developed and developing countries. "They live to connect and communicate" researchers say. According survey results, smartphones rated twice as popular as desktop PCs and three times as popular as tablet computers. 60 per cent of Generation Y compulsively checks their smartphones for social media updates, texts or email, 90 per cent checks they smartphone before they get out of bed and 42 per cent mentioned that they "feel anxious, like part of me is missing" if they cannot check their smartphone. (Kelliwon 2012.)

Resent research by Carlson Wagonlit Travel, revealed that 71 per cent of Generation Y are using smartphones when travelling (2011).

2. *The format of information presenting via mobile applications*

The design of mobile applications coincides with the way of acquiring and processing information by Digital natives. *Relevant, precise but short information*, presented by mobile apps, perfectly fit to earlier mentioned statement that "Millennials work best if information is "*cut into bits of what they need to know*" and delivered on a schedule of when they need to know it." (Wiezel in Abaffy & Rubin 2011.) Presence of pictures, ability to be personalised by the user and regular updates of mobile apps, also should be appreciated by Generation Y, who are said to learn best in *visual (graphics first, not text), kinaesthetic, multisensory styles in an interactive and unstructured way* (Pendergast in Benckendorff, Moscardo & Pendergast 2010, 4). *Gamification*, inherent to some mobile apps adds *play-oriented approach, (*Benckendorff, Moscardo & Pendergast 2010*) and fun (*Yarrow & O'Donnell 2009*) also highly valued by the Millennials.

3. *Gen Y's possession of technical skills and financial resources necessary to use mobile devices and applications*

According to EMarketer (2013) the Millennials are young enough to understand the benefits of using smartphone and applications, but old enough to afford them. For younger Generation Z members a smartphone or other mobile device might be too expensive, meanwhile older generations do not have the skills to make the most of it.

4. *The ability of mobile applications to support Generation Y's 'digital lifestyle'*

Mobile applications perfectly fit to Generation Y's need to stay connected (Benckendorff, Moscardo & Pendergast 2010, 6) and make their daily activities, such as browsing of Internet, checking e-mails and social medias, searching information, planning, purchasing, etc., easier. Nearly 70 per cent agreed to "smartphone apps are important to my daily life", with more than 50 per cent of applications being used for games and entertainment and 27 per cent mainly for work. (Kelliwon 2012.)

5. *The ability of mobile applications to influence and engage Generation Y*

Generation Y adults are also much more likely to be motivated by earning premium content, game credits and other elements of Gamification approach, than other generations (Greenberg 2012). Moreover, a research by mobile applications developer Tapjoy, which polled two thousands consumers, revealed that young adults aged 25-34 are also more likely to be influenced by advertisements in applications, particularly by featuring videos or fully sponsored / branded applications (Greenberg 2012).

All in all, there are a lot of prerequisites evidencing a big potential of mobile applications as information channels to reach and influence Generation Y's behaviour. However, it is important to understand that above described reasons may not have immediate effect on Generation Y acceptance and intention to use of mobile applications, especially for tourism planning and purchasing. The study by Flurry Analytics (2012 in Emarketer 2013) revealed that Generation Y, representing the age group between 24-35 years old, is the greatest user of mobile applications among all living generations. However, as revealed during CISCO research (2012) 70 per cent of Generation Y re-

spondents report using less than 10 smartphone applications regularly on the daily basis.

Therefore, to get an understanding how to influence Generation Y travel behaviour with the help of mobile applications, there is an obvious need for additional information, which is to be obtained with the help of empirical research.

2.6   Summary of theoretical discussion and reserch framework

While exploring existing theoretical knowledge and studies concerning the main subjects of current thesis – sustainable tourism and travel, Generation Y and mobile applications, we came across a lot of evidences, supporting the main assumption of current research, which states that targeted mobile applications, providing relevant information and guidelines about sustainable alternatives, may represent an appropriate way of communication with Generation Y and may encourage their sustainable behaviour in tourism.

Generation Y can be safely called the most promising segment in tourism in the nearest future, as they love to travel and travel a lot (UNWTO 2008), have the money to afford it (Oracle 2011), generously spend on travel (UNTWO & WYSETC 2008; Amadeus 2009) and represent a huge population.

Speaking of their attitude towards sustainable tourism, in general they are said to be aware about its principles and the growing trend of volunteer tourism evidences their concern and willingness to contribute to it (WYSETC 2008). However, there are also constraints, such variety of incomparable eco-labels, perceived higher price of sustainable products and services and lack of clear guidelines, etc. that prevent Generation Y from going "green".

How it can be improved? One of the options could be establishing direct communication to them through a popular channel – ICT's innovation tool, which is available at any place and any time – mobile applications. Due to the ability of presenting information in a convenient format, - short, relevant and customised, mobile applications

are said to have a significant impact on users behaviour and buying decision-making (Thain 2012). Also known as "Digital Natives", Generation Y members are technological savvies, addicted to being online and always in touch (Benckendorff, Moscardo & Pendergast 2010) not without the help of smartphones and mobile applications, being the leading users of both among all living generations (CCWTR 2012; Flurry Analytics 2012 in EMarketer 2013). In turn, mobile applications are facilitating in-trip travel planning and purchasing, an on-going trend caused by the development of ICT, and by that increase travellers satisfaction, which resulted in fast development of travel-related applications with more than 17000 already available (ABI Research in Nurture Lakeland 2011).

It looks like mobile applications are very likely to influence Generation Y travel behaviour making it more sustainable. However, the success depends on a number of variables such as: clear understanding of what sustainable travelling is and how it can be performed by a traveller; right content of guidelines and targeted mobile applications to communicate them; attitudes of generation Y towards these mobile applications and the level of adopting of mobile technologies in their travel behaviour; and finally facilitating factors. These variables will be in the focus of empirical study, undertaken in this thesis project.

3 Research approach and methods

There are two widely accepted approaches for a research: quantitative and qualitative. Doing quantitative research, the researches decides what to study, ask specific, narrow questions, collect numeric (numbered) data from participants, analyses these numbers using statistics, and conducts the inquiry in unbiased, objective manner. Meanwhile, qualitative research expects the researcher to rely on views of participants, asks broad, general questions, collects data consisting largely of words (or text) from participants, describes and analyses these words for themes and conducts the inquiry in a subjective, biased manner. (Creswell 2005, 39.)

The research approach largely depends on the type of problem to be solved. According to Creswell (2003, 21) if the problem is identifying factors that influence an outcome, understands the best predictors of outcomes or aims to test a theory and find explanation of the phenomenon, the quantitative approach is the best. On the contrary, qualitative approach is useful when the researcher does not know the important variables to examine, the topic is new or existing theories do not apply the particular group under study (Morse 1991 in Creswell 2003, 22).

These two approaches can also complement each other, generating a mixed methods approach.

The problem of this thesis better comply with *quantitative method*, as there is an interest to test how such factors, as technological familiarity and environmental awareness of Generation Y and the existence of innovative method of communication represented by mobile applications, can influence the outcome – more sustainable travel behaviour of Generation Y individuals. In the theoretical part, a broad overview of theories regarding both factors has been made and now it is the time to test them and find deeper relationship and explanations. In addition, some of the research questions, such as identifying most used mobile applications, require numeric data and larger sample to support its validity and increase reliability.

Finally, being the first in a bigger research project, this study aimed to create a path for future studies, by providing an overall description of trends said to exist, testing theories and providing data further studies can rely on, when making deeper exploration of the results, using qualitative or mixed methods.

3.1 Quantitative approach

According to Creswell (2003, 18), "quantitative approach is the one in which the investigator primary uses postpositivist claims for developing knowledge (i.e., cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurements and observation, and the rest of theories), employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data."

Although, quantitative research is explaining phenomena by collecting numerical data that are analysed by using mathematically based methods, it can be designed to collect many data that do not naturally appear in a quantitative way (Aliaga & Gunderson 2002 in Muijs 2004, 2).

In relation to the use of literature, quantitative approach requires substantial amount of literature and uses the literature deductively as a framework for research questions and hypotheses (Creswell 2003, 32) or assumptions. In accordance to this recommendation, this thesis contains a broad theoretical chapter. Generally, literature review is presented in the beginning of the study and then may appear in the end, when results of the empirical research are compared with existing theories.

Quantitative research typically involves testing or verifying theories or explanations, identifying variables to study and relating variables in questions or hypotheses, which are then supported or refuted. It is also said to be a less biased approach and its results are generally considered more valid and reliable due to larger sample than in other research methods and more specific usually closed-ended questions.

Quantitative research can be made in a form of experiment or survey. For this study a survey design has been chosen as more appropriate. According to Creswell (2003, 153), "a survey design provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population." The type of survey is chosen to be cross-sectional, which means that the data will be collected at one point in time (Creswell 2003, 155).

3.2 Data collection process

According to Creswell (2005, 10), "collecting data means identifying and selecting individuals for a study, obtaining their permission to study them, and gathering information by asking people questions or observing their behaviour."

The research instrument for data collection was chosen to be self-administrated questionnaires, due to the number of its advantages, such as low cost, consequent larger respondents' sample, wider coverage within a sample population, easy implementation and fast speed of data collection (Bourque & Fielder 2003, 14).

For the ease of distribution and further analysis the questionnaire was inserted in professional on-line research software, called Webropol. Using this software, an Internet link leading to questionnaire was created and then sent to the target sample – members of Generation Y, together with an information letter. The data collection lasted two weeks from 19th of April until 3rd of May 2013.

Taking into consideration peculiarities of Generation Y, such as active use of Internet and social media, the links and information about the survey were distributed via social media platforms, such as Facebook.com and Vk.com, - number one social network in Russia. Virtual friends were encouraged to fill in the questionnaire themselves and then to forward the link and information to their friends, who practice travelling and younger than 35 years, by personal messages or by sharing the information on their personal account page. The invitation was sent out on Friday evening and Saturday morning, as it was believed that during the weekend people are less stressed and have more time to complete the survey. A reminder, thanking everybody, who have already completed the

questionnaire and encouraging the rest to participate before the mentioned deadline was published in the beginning of next week on researcher's personal account page in social medias and caused the second wave of responses.

In addition, information and links were also distributed via e-mail around researcher's professional and personal network, to people who regularly deal with Generation Y, being their parents, employers or teachers.

Chosen way of distribution appeared to be quite effective for a number of reasons. The fact that I was personally acquainted with the respondents helped to target them at the very first step when sending out the invitations to the survey. In addition, personal acquaintance encouraged the response rate and re-distribution of the questionnaire.

3.2.1 Population, sample, and participants

As discussed earlier, this study is focused on Generation Y; therefore members of this generation represent the target population of the study. As we know, for many reasons it is impossible to involve the whole population, when doing a research, hence a sample should be made. "A sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population." (Creswell 2005, 146.)

Sampling can be done using two main methods: probability sampling and non-probability sampling. *Probability sampling* is the most rigorous form of sampling, as the researcher randomly selects individuals and the equal probabilities of being chosen, makes the sample representative of the target population. This approach is considered to be unbiased and highly reliable, but it is not always possible to perform, due to significant time and budget it requires. Instead, a *non-probability sampling* might be used – a method when a researcher selects individuals because they are available, convenient and represent some characteristics the investigator seeks to study. Non-probability sampling, in-turn, includes *convenience sampling,* when the researcher selects participants based on their availability and willingness to participate and *snowball sampling,* when the

researcher asks participants to identify others to become members of the sample. (Creswell 2005, 149.)

Due to limited time and resources, this study has implemented a non-probability sampling approach, using a mix of convenience sampling - by distributing questionnaire around friends and acquaintance in social networks and via email and snowball sampling – by encouraging respondents to redistribute it further.

As a result, the size of sample was about 320 respondents. The invitation to take part in the survey, including the brief description of the research and links to questionnaire in English and Russian languages, has been selectively sent to respondents, who seemed to fit to Generation Y description. However, to make sure all of the respondents are relevant, a filter question, obtaining the age group of the respondents has been added. As stated earlier, this research identifies Generation Y to be aged between 18 and 34 years, therefore if the respondent happened to be older, the questionnaire was ended automatically. Other variables such as travelling experience and previous use of mobile technologies, etc. were not used as filter questions not to over limit the sample. Moreover, doing quantitative survey, researcher need to keep a close connection with the theory, this in our case evidences that the majority of Generation Y loves travelling and technology and widely practice and implement it.

3.2.2 Description of the research instrument

As mentioned earlier, the research instrument for this study was chosen to be unsupervised self-administrated questionnaire available online. The questionnaire was developed especially for this study. Following the recommendations for unsupervised self-administrated questionnaires (Bourque & Fielder 2003, 20; Davies 2007, 116), it contained mainly closed-ended questions, which were obligatory to answer and one open-ended question, which was optional.

The questions have been united under several topics, which followed each other in a logical order. Questions were drawn up on the base of the research questions and the corresponding *assumptions* that are presented below.

- Assumption 1: Generation Y is an active user of mobile applications
- Assumption 2: Mobile applications play an important role in tourism planning and facilitation
- Assumption 3: Generation Y is aware of Sustainable Tourism
- Assumption 4: Sustainable travel guideline, delivered via mobile applications, may have a positive impact on Generation Y's travel choices
- Assumption 5: Popular directly and indirectly travel-related mobile applications may represent an appropriate communication tool for delivering sustainable travel guidelines to Generation Y

Assumptions have been developed based on assumptions made in theoretical part, research questions and the aim of the research. For each assumption a number of questions have been created.

Consequently, the *key variables* of this study are: 1) respondent's background information, coinciding with Generation Y 2) travel experience and behaviour; 3) level of adaptation of mobile applications; 4) use of mobile application when making travel purchases and in-trip, 5) attitude towards using mobile applications for the purpose of changing existing travel patterns to more sustainable.

The sequence of question block, as well as some questions, have been developed according to Technology Acceptance Model (TAM), created for this research and described earlier.

Traditionally, the questionnaire began with a short block of demographical questions (Background variables in TAM), out of which age was used as a filter question. It was followed by a set of questions, regarding previous travel experience and travel purchasing behaviour, continued by a set of questions regarding previous ICT usage experience, also prescribed by TAM. Next block of questions, aimed to measure awareness and attitude towards sustainable travel and tourism. Finally, last block of questions aimed to find out the attitude and intention of Generation Y to change their travel pat-

ters under the influence of mobile applications, providing advice on more sustainable travel options.

Taking into consideration the ethical nature of the research, straight or biased questions have been avoided. Instead, the questions have been rephrased in a form of more neutral assumptions respondent could agree or disagree with using continuous or Likert scale to measure their attitudes. Depending on the type of the question, questionnaire included plain and multi selection questions and open-ended question and implied nominal, ordinal and interval (Likert) scales. Overall, the questionnaire included 20 closed-ended questions, including selections and Likert-scale questions and one open-ended question.

To enlarge the target sample and ensure correct understanding of terms and questions, the questionnaire was available in two languages: English and Russian, - native language of the researcher. English questionnaire was revised by a native speaker as well.

To ensure the correct understanding of some questions, content validity and improve questions format and scales (Creswell 2005, 158), the questionnaire has been tested several times before implementation and some corrections have been made.

Moreover, taking into consideration the possible shortcomings of unsupervised survey, such as risk of misunderstood questions (Bourque & Fielder 2003, 20), the questions were designed with maximum simplicity and in one case a refinement was included as a note. To prevent missing of data, most of the questions in questionnaire were obligatory, meaning that the respondent could not complete the survey without answering them.

3.3   Data analysis process

Preparing and organizing data for the analysis was done also with the help of Webropol software, which was used for data collection. Only a few questionnaires have been manually inserted to Webropol, as the majority of respondents completed the questionnaire online so all the data was automatically accumulated in Webropol. As all

questions, except open-ended one, were set as obligatory, there have been no cases with missing data or other errors.

Data analysis was also done in Webropol, as it has a comprehensive analytical tool. Data analysis proceeded in a following way. Firstly, the results of linked identical questionnaires in Russian and English language have been merged, so that the researcher could observe the whole picture. Secondly, with the help of Webropol reporting tool, all collected data has been displayed using graphs and tables, demonstrating the responses for every question. Finally, the results have been reported using most appropriate figures and graphs and interpreted to provide answers to research questions and evaluate whether the data collected confirm or disconfirm assumptions, trends and predictions, made after literature review and draw conclusions.

3.4 Reliability and Validity

When doing a research it is important to consider the aspects of reliability and validity. *Reliability* means that the results are stable and consistent and can be repeated (Creswell 2005, 162). Meanwhile, *validity* in quantitative research is the extent to which the chosen measures are able to measure the constructs of interest of the research, be it the extent to which chosen sample represents the researched population (external validity), or if the research design allows to draw conclusions about the relationship between variables (Internal validity) and finally the extent to which the constructs are operationalized and represent the researched phenomenon (construct validity) (Balnaves & Caputi 2001, 89). Only reliable and precise measures can an accurately reflection of the reality and provide data, which can be used as a base for drawing the answers to the research questions.

Although, a researcher always aims to greater reliability and validity of the results, it is important to acknowledge the limitations of the study.

The reliability and validity of present study might be limited by several circumstances. First, the chosen non-probability sampling method represented by a mix of convenience and snow-ball sampling is known to be less reliable than probability or random

sampling. However, as stated by Davies (2007, 62), "even the confidence for the generalizability of the research conclusions is limited, it is still reasonable to expect that variables may be tested for their relationship with other variables, and enable a researcher to deliver findings that if supported by following studies in different locations, could be found to reflect the views or experiences of a wider population."

Second is the abundance of questions with attitudinal measures, which can be justified by ethical nature of the research questions; however the drawback of this type of measure is that they do not provide direct evidence of specific behaviour (Creswell 2005, 156).

Third is unsupervised administration, inherent to on-line surveys, which on the one hand is highly standardized and therefore less biased (Creswell 2005, 170), but on the other hand cannot be controlled by the researcher, for example the amount of female respondents might appear to be a much bigger proportion then male respondents.

Taking into considerations these limitations, one can make a conclusion that it is not possible to make a reliable generalization based on this study, however, as a researcher, I believe it can bring out some new thoughts about encouraging Generation Y in a sustainable tourism with a help of technological novelties and give ideas for future studies.

4   Key Results

In this chapter the results will be described under relevant topics.

Nearly as expected the rate of response was almost 40 per cent, with 122 responses received during data collection period, out of those 22 respondents did not fit to the age criteria and therefore the total of responses decreased to 100.

4.1   Profile of respondents

The quantity of the respondents 100 allows equalizing the percentage value with actual number of respondents, for example 50 per cent actually mean 50 respondents.

The majority of the respondents were female - 73 per cent, with 27 per cent of male respondents. The age group of the respondents is shown in figure 5 below. Most of respondents were aged between 23-27 years. 22 respondents were older than 34 years and therefore could not continue the survey.
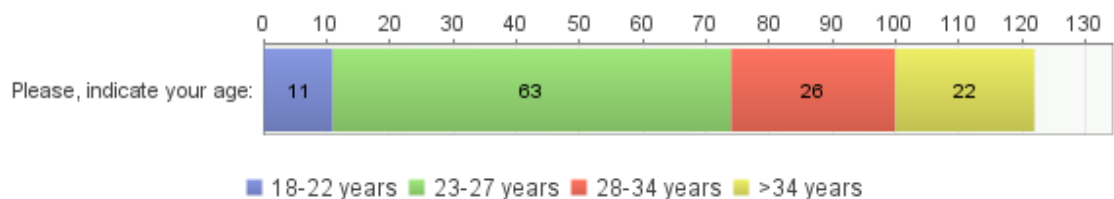
Figure 5. The age of the respondents (N=122)

One notable characteristic of the respondents was that approximately 88 per cent of the respondents were highly educated - university graduates or higher. 5 out of 7 respondents, who answered "Other" had a similar degree to Masters/Ph.D., however due to differences in educational systems of countries, their academic degree did not fully comply with given options.
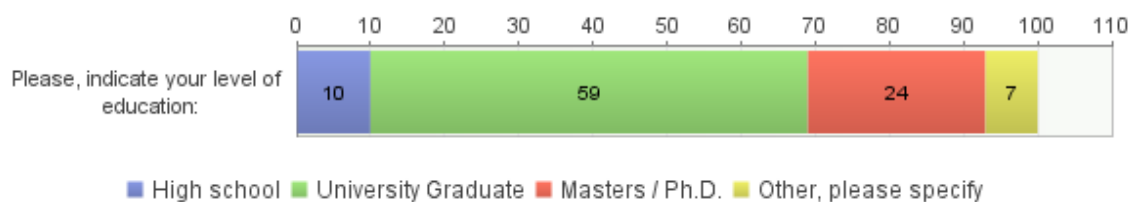
Figure 6. The level of education of the respondents (N=100)

In relation to current employment, 69 per cent were employed and only 8 per cent unemployed; 23 per cent were students, out of those 10 per cent were employed and 13 per cent unemployed.
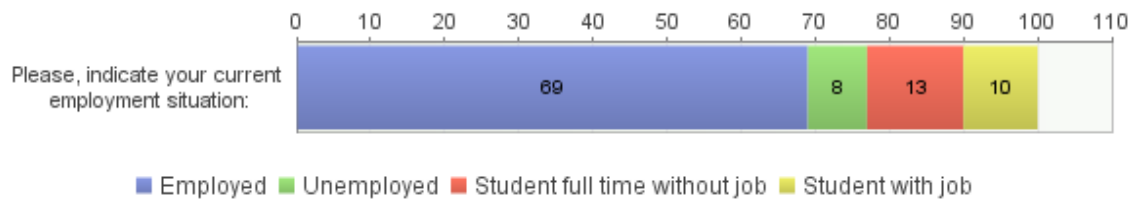
Figure 7. The employment situation of the respondents (N=100)

As we can see, most of the respondents were mature enough to travel, highly educated and currently employed, from which we can conclude that, this sample quite accurately represents potential young travellers able to make their own decisions when planning leisure travel activities.

4.2   Generation Y travel behavior in general

Evidently, investigating current travel patterns and experience of Generation Y is a starting point on the way to influencing their travel behaviour in future. In the theoretical part we got familiar with various studies stating that Generation Y members love travelling and do it often, thinking of it as of a way of personal development and an integral part of life. Moreover, according to TAM previous travel experience also have an impact on degree of acceptance of innovative travel related technology (Oh, Lehto & Park, 2009), in this context - mobile applications. Consequently, a block of questions regarding Generation Y travel patterns, started from finding out *how many overnight trips* respondents have been to during last 12 months.
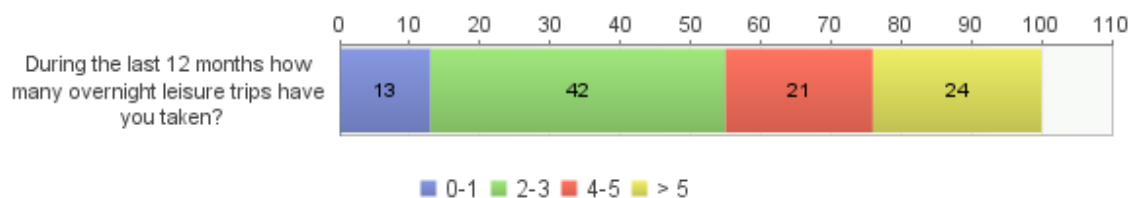
Figure 8. The amount of overnight leisure trips respondents have taken during past 12 months (N=100)

The results, shown in figure 8 confirm that Generation Y members indeed travel for leisure quite often, with 42 per cent travel 2-3 times a year and another 45 per cent more than 4 times a year.

Next, it is important to understand how Generation Y actually purchase travel services, - *on their own or via travel agency*, as with this information we can determine where to send the main effort of motivating for more sustainable behaviour.
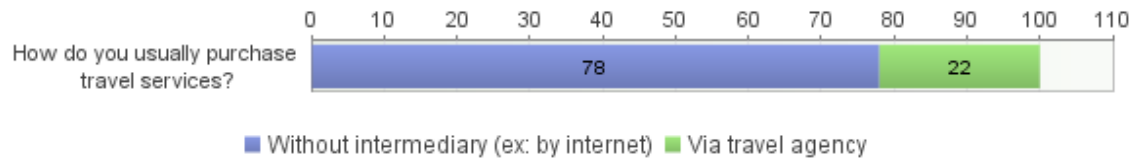
Figure 9. The way respondents usually book travel services (N=100)

As we can see in figure 9, 78 per cent of respondents are usually booking travel services by themselves. This result is of high importance in the context of this study, as it means that the majority of Generation Y are skilful travellers and tend to personally design every detail of the journey, rather than choosing ready-made packages offered by travel agencies, which are not always sustainable, as mainly aim to make profit. It also supports assumptions from theoretical part, stating that due to profound technological skills Generation Y consumers are highly independent and prefer to make own decisions, as well as double check the information, given in advertisements (Palmer 2008; Pardee 2010).

Once we came to know that Generation Y members prefer to book travel by themselves, logically we pass on to the next question: what *sources of information* they mostly use for making travel-related choices?
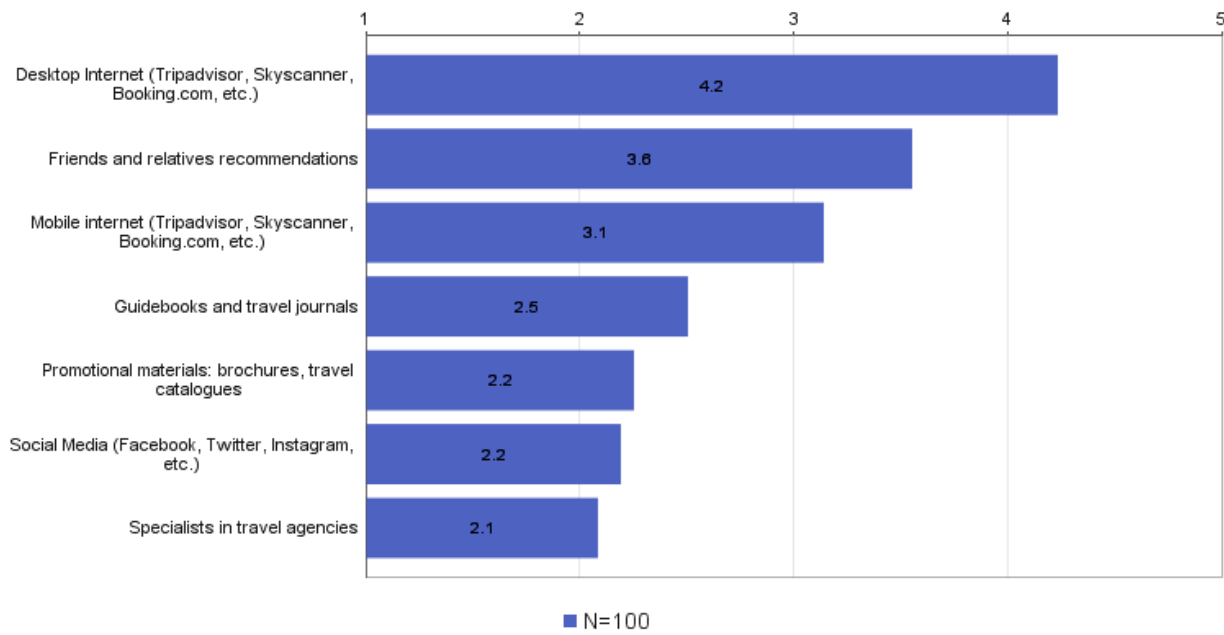
Figure 10. The most used information sources when making travel-related decisions (1= Never use, 5=Always use)

From the chart we can see, that the leading position holds *desktop internet*, with 64 per cent of the respondents stated that they "always use it" and its mean or average rating of responses 4,2. It is followed by *friends and relatives recommendations*, which again supports the findings of the previous studies, which reported high weight given to friends and family experiences and opinions inherent to Generation Y.

The use of *mobile internet* brought up quite contradictory results, as 32 per cent of respondents stated that they are not likely to use it (score 1 and 2), 22 per cent were neutral (score 3) and 46 per cent reported that they frequently - 24 per cent (score 4) or always - 22 per cent (score 5) use it. Such balance suggests that being a relatively new technology, travel services available through mobile devices need further improvement and promotion to reach better acceptance by the public. However, 46 per cent of users evidence its high potential.

Printed media such as *travel journals and guidebooks* as well as *promotional materials*, as expected, are almost never used by "digital natives". On the contrary, the low rating of *social media* was quite surprising, given its importance in Generation Y daily life. Perhaps, Generation Y individuals do not count the travel information and inspiration

they come across when browsing social media and checking their friends pictures from holidays. Finally, *specialists from travel agencies* received the lowest score, which a logical outcome of the previous finding that Generation Y almost does not use intermediaries when booking travel.

All in all, based on the responses to this question, we can conclude that Internet, both mobile and desktop and word-of-mouth or social currency, meaning provoking discussions and debates around sustainability-related topics are among the most effective ways of promote ideas of sustainable tourism to Generation Y.

Another important thing we need to know is the *time* when the information about more sustainable travel alternatives should be delivered to influence decision-making. For this purpose, let us look at the answers to the question when respondents usually purchase travel-related services.
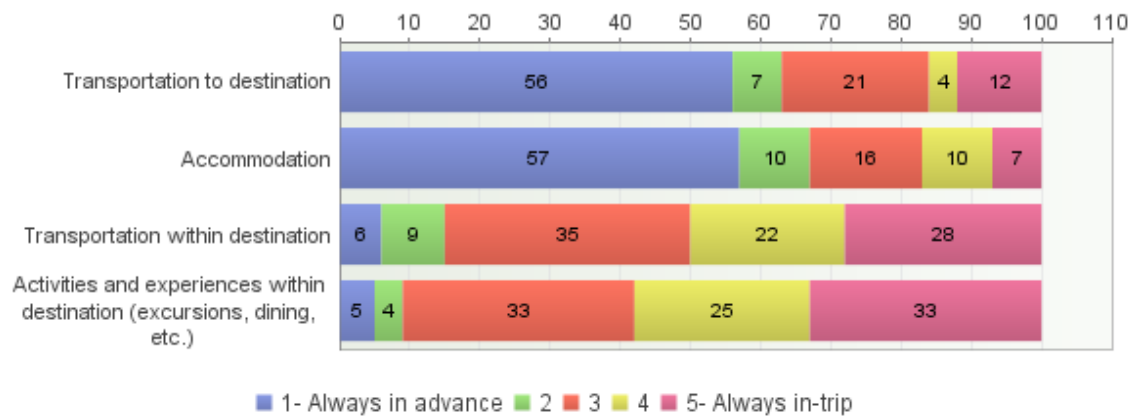
Figure 11. When respondents usually purchase travel services (N=100)

As appears on the chart, transportation to destination and accommodation are mostly booked in advance, meanwhile activities and transportation within destination are more likely to be purchased during the trip. Quite high neutral results in last two options are also of interest, as they illustrate the significant dependence of the booking arrangements on a concrete trip. As it has been stated in the theoretical part, Generation Y mostly travel with a purpose (WYSETC 2013) even for leisure, so they tend to plan their activities in destination before the trip and in some cases even pre-book it.

From the results we can conclude that recommendations on more sustainable accommodation and transportation to destination would have better influence if communicated by service providers or other tourism stakeholders at the very beginning of trip search process. For transportation and activities in destination, such advice might first appear on the web-site, so that travellers will come across it when searching the information before the trip and then it should be reinforced in-trip, which is highlighting the importance of destination management organizations.

4.3   Generation Y as users of mobile applications

Once we have looked at the travel patterns of Generation Y, it is now time to pass on to the next variable, described in TAM, - previous ICT usage experience or more precisely – attitudes and practical use of mobile applications in general and in travel-related purposes in particular.

The first question of this block aimed to measure respondents' experience of using devices with mobile Internet access.

Figure 12. Respondents' experience of using device with mobile Internet (N=100)

The results displayed in figure 12 support theoretical assumptions, describing Generation Y as technological savvies. Only 12 per cent of respondents reported using mobile devices with Internet access for less than a year, 25 per cent have 1-2 year experience, meanwhile 63 per cent are using such devices for more than 3 years. Looking ahead, it is worth mentioning that the majority of users with less than year experience already practice use of mobile applications when planning and in-trip, from what we can conclude that the acceptance period of this technology is quite short.

To find out for which devices it is better to design mobile application giving sustainable travel advices at first place, the respondents were asked to identify the type of device they are using. Respondents could select more than one answer option.
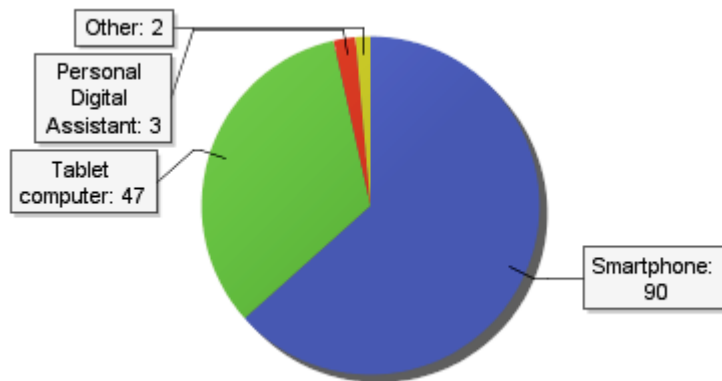

Figure 13. The type of device with mobile Internet access respondents use (N=100; multiple choice)

As we can see 90 respondents out of 100 possess a smartphone, and almost half of the respondents also have a tablet computer. Smartphones and tablets seem to replace once popular personal digital assistants. Among "Other" 2 devices Ipad and Ipod Touch were mentioned. Ipad refers to tablet computers, while Ipod Touch is an entertainment device, meant for taking pictures, browsing the internet, gaming, listening to music etc., where you can also install mobile applications, but it cannot be used as a phone. Results again confirm previous studies, described in the theoretical part (CCWTR 2012; Emarketer 2013) and clearly evidence the high potential of establishing communication with Generation Y via mobile Internet.

Now, when we came to know that the overhelming majority of Gen Y respondents possess a smartphone or tablet and have a sufficient experience of using it, it is time to find out whether this also means that they actively use mobile applications? For this purpose, respondents were asked to express their attitude towards several statements.
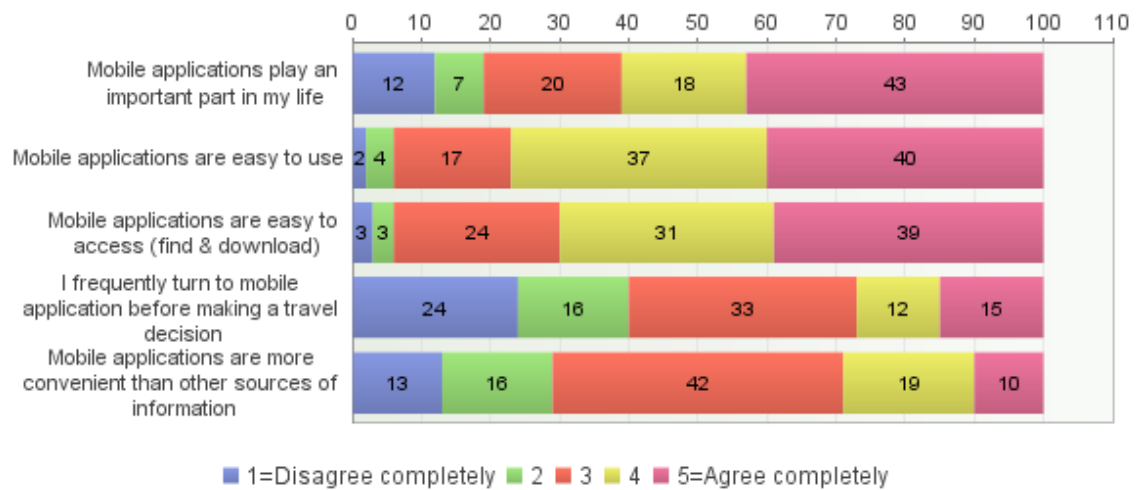
Figure 14. Respondents' level of agreement with statements concerning mobile apps (N=100)

In figure 14 we can see, that Gen Y respondents mostly agree with the first three statements claiming that mobile applications play important part in their lives (61 per cent), are easy to use (77 per cent) and easy to access (70 per cent). Based in these results, we can conclude that most of the respondents are active users of mobile applications. However, the next statements regarding the use of mobile applications as a more convenient source of information or a supporting tool in travel related decision making illustrate an existing uncertainty of respondents, leading us to the conclusion that these possibilities of mobile applications need more promotion.

From ascertaining the attitude towards using mobile applications, we turn to a more practical question – what types of applications Generation Y respondents are using the most when planning and during the trip? The taxonomy of travel-related applications by service provided was borrowed from a study by Kennedy-Eden and Getzel (2012). In Webropol software this question was divided to two questions – when planning and in-trip. Question type was set as a multiple choice, so that the respondents selected only the applications they actually use. The results are shown in figure 15.
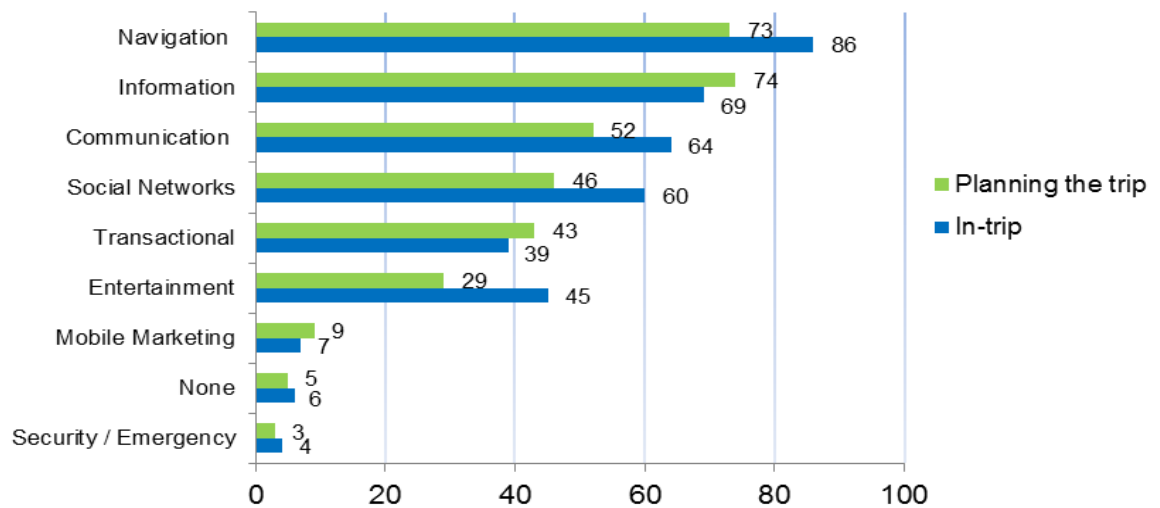
Figure 15. Mobile applications by service provided, used by the respondents during planning and in-trip (N=100; Multiple choice)

Applications are arranged on the chart in descending order, clearly illustrating the most and the least popular ones. Although the use of some applications differs quite significantly in response to the situation– before or during the trip, they still tend to comply with their overall position in the rating. As we can see, some applications, like informational and transactional are more frequently used during planning the trip, while others are mostly used in-trip. Such distribution of responses seems quite logical and supports the statement that Generation Y mostly book and plan the trips by themselves.

As we can see, the leading position among mobile applications belongs to *navigation*, which includes GPS-navigators, traffic assistants, maps, journey planners, etc. In the context of encouraging more sustainable travel behaviour, navigation applications play a very important role as travellers naturally follow its recommendations. So far, most navigators provide just basic guidelines on how to get to destination by private car, walking or public transport, meanwhile pro-sustainable ones may also advice such things as: amount of CO_2 emissions of different modes of transport and routes, the shortest possible way and preferred time of the day to avoid traffic jams and reduce the use of fuel, local car sharing companies and public transport routes as an alternative to private car usage, local bicycle rentals, special offers suggested by local attractions for visiting during low demand time-periods; sustainable accommodation and activities along the way or near destination, such as non-motorized boats centres, hiking and

walking paths, etc. Being widely perceived as an adviser application, navigation can include sustainable tips option in, so to say, natural way, not disturbing its primary purpose.

The second popular applications are the ones providing general travel *information*, like weather forecasts, city guides, location-based service advisors, etc. It is reported to be used by 74 respondents while planning the trip and 69 during the trip. These results support the finding of WYSETC (2007, in Benckendorff, Moscardo & Pendergast 2010, 11) which highlighted that Generation Y are information hungry and make a broad information overview before making a purchase decision or, in our case, go travelling. Again, this type of application could be successfully used in encouraging more sustainable travel choices by including in the content sustainable travel tips as well as routes and activities, which benefit local communities but produce the least of possible harm. This segment also includes applications developed by destination management organizations, which may warn tourists about very busy dates and encourage them to plan their visit in more calm periods, wisely spreading the demand and increasing tourists' satisfaction.

Information applications are followed by *communication*, such as Internet-supported free calls, text and picture sharing applications, emails, etc. Due to quite specific services offered, it is difficult to think of a sustainable travel tool, which could be build-in these applications without causing users confusion, therefore let us pass to the next application type.

Social networks hold the forth position in popularity among Generation Y respondents with 46 respondents using it when planning and 60 respondents during the trip. As discussed earlier, respondents generally do not consider social media as a source of travel related information. However, given the importance of social media in Generation Y lifestyle, its potential in influencing a change in travel patters should not be underestimated. An overview of existing sustainable tourism communities in a couple of social networks (Facebook, Instagram) revealed a variety of diverse groups and pages, some devoted to sustainable tourism in general, while others aimed at promoting sus-

tainable tourism in different places of the world. However, the main drawback is that these communities have very few followers or members, with the most popular page of Global Sustainable Tourism Council, founded by United Nation having only 2 682 followers or "Likes". The current situation demonstrates the need for active promotion of sustainable tourism communities in social media. This can be done for example by posting relevant sustainable travel information, eye-catching pictures, discussions or polls in other popular pages devoted to travelling, travel service providers or big events, like festivals, championships, etc., to get the attention of bigger audience.

Transactional applications continue the popularity rating with 43 respondents turning to them when planning and 39 - during the trip. It is important to mention that like the social media, the mobile applications of transactional services are the clones of their popular desktop versions, which increase their overall significance. Transactional applications include mobile banking, shopping, reservations and other services. One of the ways to encourage sustainable travel choices via transactional applications is to introduce the labelling of sustainable or ecological products and services. For example, when browsing a mobile application searching for accommodation or sightseeing tour a user should see an "eco" mark in front of a more sustainable option and ideally the amount of emissions produced, valid for comparison.

Entertainment applications, at first glance, seem not relevant to sustainability promotion, however, taking into consideration an on-going trend of learning gamification (Swan 2012), appreciated by Generation Y for its fun and play-oriented approach (Yarrow & O'Donnell 2009; Benckendorff, Moscardo & Pendergast 2010) if properly designed, it might have an influence as well. Eco-related games such as green or eco quiz or a personal emission calculator are already available to download in a format of mobile applications, but again need more promotion. However, this should be done not at first place, but more like a supportive tool.

Mobile marketing applications appeared to be not popular among the respondents; however, it is still good to encourage travel-related companies to include information re-

garding their own activities towards sustainable development and how their customers could use their services in a more sustainable way.

A very low percentage of respondents *not using applications* in travel related purposes at all, is seen as a very positive result, supporting the statements that Generation Y is an active user of mobile applications and that mobile applications is a useful tool both before and during the trip.

Security and emergency applications were almost never used by the respondents and therefore are not worth a discussion.

Based on the results we have discussed so far, we can conclude that Generation Y is an active user of mobile applications, accepting *Assumption 1* and claim that some mobile applications (Navigation, Information and Communication, which were reported to be used by more than 50 per cent of the respondents) play an important role in tourism planning and facilitation, partly accepting *Assumption 2*.

In addition, it is important to find out the obstacles in accepting mobile applications by Generation Y, so we pass on to the next question, when respondents were asked to evaluate possible reasons that could put them off using mobile applications.
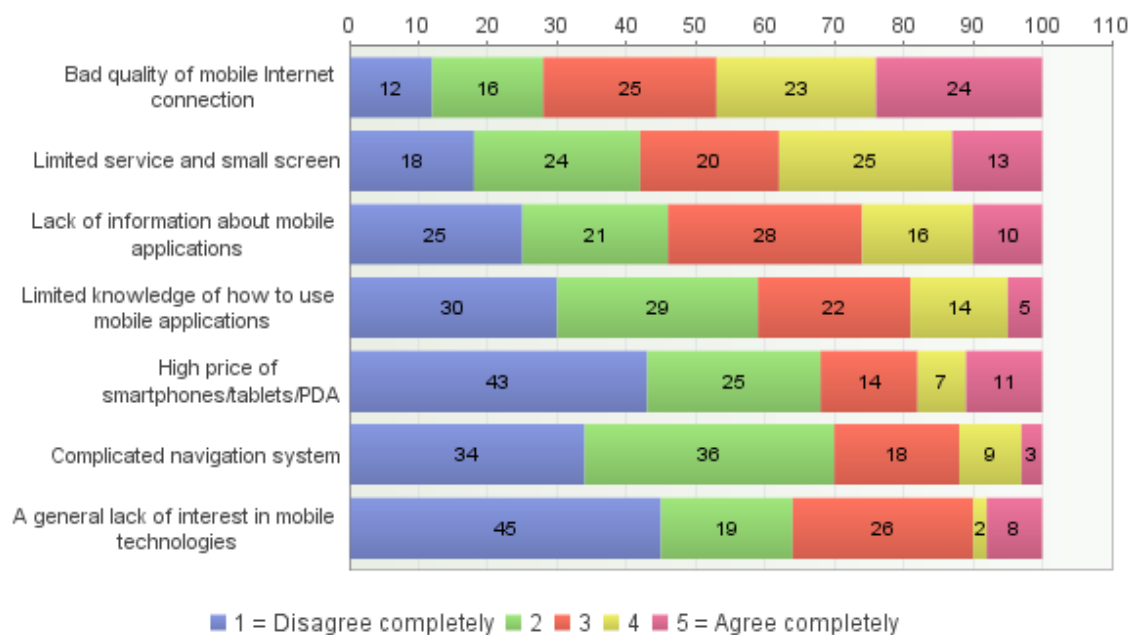
Figure 16. Evaluation of reasons for not using mobile applications (N=100)

As shown in figure 16, respondents either disagree or are neutral towards all the reasons against using mobile applications, except of "bad quality of mobile Internet connection". It seems quite logical as previous results showed that the majority of respondents actually use mobile applications, so there should be no significant drawbacks. However, with some reasons they agree more than with others, so let us go through each of them.

Almost half of the respondents (47 per cent) agreed that *bad quality of mobile Internet* might be a reason for them not to use mobile applications. The mean of the responses is 3.3. Moreover, we should not forget about the high cost of mobile Internet in roaming, mentioned by several respondents. Yet, there are several solutions for this problem – off-line mobile applications, which are already available and free-WiFi coverage.

The next reason - *limited service and small screen*, has collected almost equal amounts of agreements (38 per cent) and disagreements (42 per cent), with mean of responses 2,9. Indeed, one of the respondents added in open-ended question that it is more convenient to search travel related information on the big screen. Yet, mobile versions of desktops web-sites are constantly improving, while the speed of life is increasing, not always living the time for proper planning of trips.

Lack of information about mobile applications and *limited knowledge on how to use* them have mean of responses 2,6 and 2,4 respectably, so we can conclude that the majority of the respondents do not consider these as obstacles. However, the abundance of existing mobile applications might get users confused with too wide choice and lack of information about the best options, which again highlights the importance of promotion of applications.

High price of smartphones, tablets or PDA, complicated navigation system and a general lack of interest in mobile applications have received the greatest disagreement from 64 up to 70 per cent. Hence, the results again support theoretical claims, that Generation Y loves innovation technological devices and gladly spend money to buy them, being old enough to afford it and young enough to be able to use it with no efforts (EMarketer 2013).

All in all, based on the results of questions, concerning the level of experience of Generation Y in using mobile Internet and applications in daily life and travel and tourism, we can conclude that most of the respondents had a profound experience of using mobile Internet, almost all possess a smartphone and half also have a tablet computer. Generation Y respondents find mobile applications easy to use and access and agree with the statement that mobile apps are important in their lives. Successful positioning of mobile apps as a convenient source of information and a helpful tool in travel decision making needs more promotion, as at the moment about half of the respondents are either uncertain or simply do not see mobile applications in such a role. The top three most used mobile apps, both when planning and in-trip are the ones providing navigation, information and communication services. First two can be successfully used in increasing sustainable travel behaviour. To increase usage of mobile applications, service providers should improve the quality of mobile internet and application developers should endow it with same amount of services as desktop versions, make it easy to use on a small screen and actively promote it to users.

4.4 Generation Y awareness and attitude towards Sustainable Tourism

So far from the research results, we have seen that members of Generation Y travel quite frequently, plan and book on their own, mainly through desktop and mobile internet, and are active and experienced users of mobile applications, which they use both when planning and in-trip. These results set a good grounding for achieving the aim of this research – enhancing sustainable tourism behaviour of Generation Y through mobile applications. However, the knowledge and attitude of the Millennials towards sustainable tourism is another important variable, which needs to be researched.

To start with, the respondents were asked to evaluate their level of awareness about the main components of sustainable tourism (ST). The results are shown in figure 17.
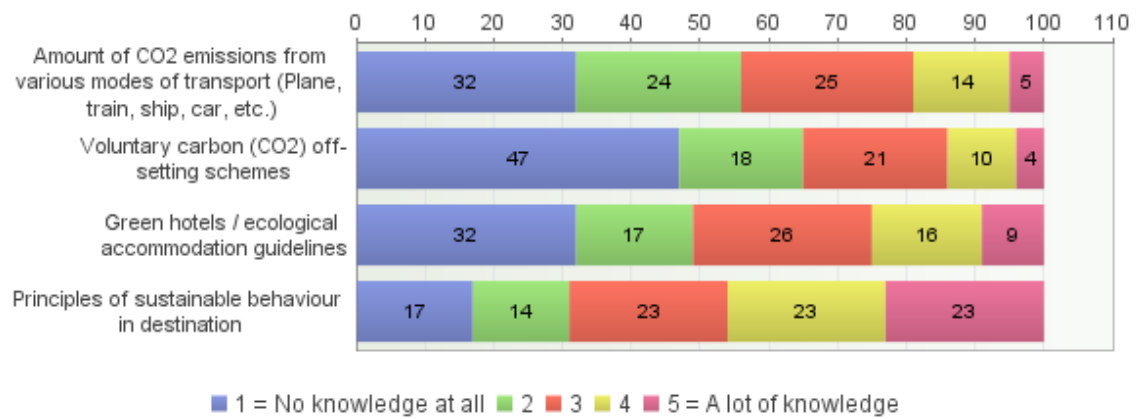
Figure 17. Respondents self-evaluation of the awareness about ST indicators (N=100)

As we can see from the graph, the least known indicator of sustainable tourism is *voluntary carbon off-setting schemes (VCOs)*. Almost half of the respondents indicated that they do not have any idea about it, 18 per cent have reported insufficient knowledge, 21 per cent some knowledge and only 4 per cent had profound knowledge. The mean of the responses is as low as 2.1 on a scale from 1 to 5.

The *amount of CO2 emissions produced by various modes of transport* is the next according to the awareness level, with a mean of responses equal 2,4. Nearly one third of the respondents have no knowledge at all about this subject, 24 per cent - insufficient knowledge and 25 per cent - some knowledge. As in the case of VCOs, only 10 per cent are properly aware and 5 per cent boast a lot of knowledge.

In relation to *green hotels and principles of ecological accommodation* the situation is almost the same – the mean of the responses is 2,5. The awareness might be a bit higher due to the widespread standard reminders about use of towels and electricity, which are now used in almost every hotel.

Principles of sustainable behaviour in destination received the highest awareness score, however, the mean equal 3,2 is still quite low. Perhaps, this indicator got higher rating due to the fact that it does not require any specific knowledge, like amount of emissions, etc., but rather is subject to the commonly accepted morality rules.

Such low level of sustainable tourism awareness was quite surprising, taking into consideration active travel behaviour performed by the respondents during the last year and on-going public discussions about interdependence of tourism and climate change and consequent need for sustainable development. Possible reasons for so low awareness might include a general lack of interest in sustainable tourism or wrong communication strategy, which failed to attract Generation Y's attention.

Once indicated the awareness, logically comes the need to find out the attitude of the respondents towards sustainable tourism. For this purpose, respondents were asked to evaluate the extent of their agreement with several related statements according the Likert scale. The results are presented in figure 18 in descending order.
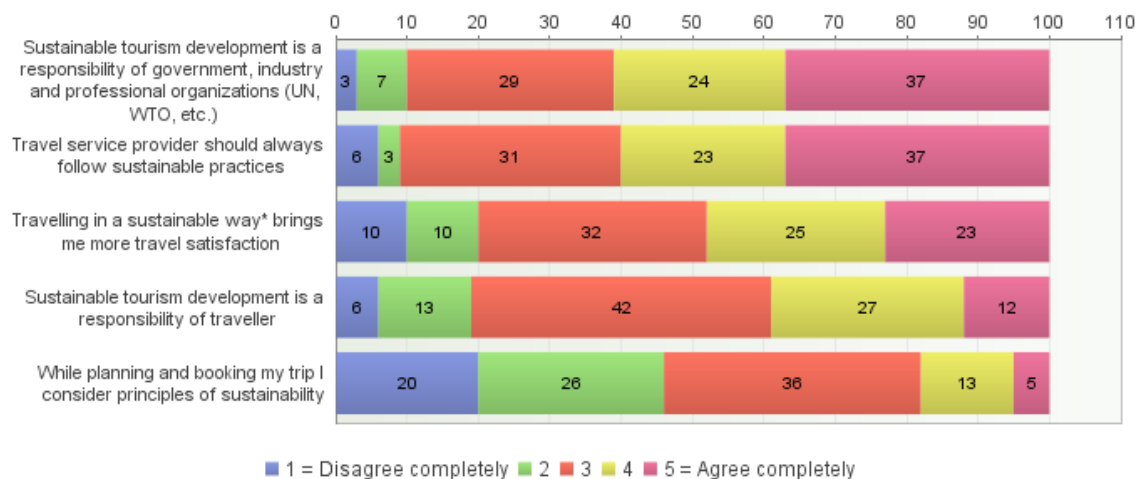
Figure 18. Evaluation of statements about sustainable tourism (N=100)

After analysing the results, we can say that *"Sustainable tourism development is a responsibility of government, industry and professional organizations"* and "*Travel service providers should always follow sustainable practices*" have received the highest level of agreement, with mean of responses 3.8 in both cases. Such results support the observation noted by Howe (interview in Pardee 2010, 17), saying that Generation Y trust in their institutions and perform "someone will fix it" attitude towards the problems they are not educated or not interested to deal with.

Next statement - "*Traveling in a more sustainable way brings me more satisfaction*" got the agreement of almost half of the respondents (48 per cent), 32 per cent preferred to stay

neutral and 20 – disagreed. The mean of the responses is 3,4 out of 5. It is interesting to find out that even the awareness of the sustainable tourism indicators is quite low, more than half of the respondents consider sustainable tourism a right thing to do and feel better when complying with it.

The statement "*Sustainable tourism development is a responsibility of the traveller*" was included in the questionnaire both to measure the perceived self-responsibility of the respondents in the common goal of sustainable development and to see who is concidered to be in charge of it – the government and industry or the tourists themselves. The results revealed the uncertainty in this matter, as the biggest group of respondents (42 per cent) tend to neither agree or disagree with this statement. However, there is a postitive trend, as 39 per cent of respondents expresses their agreement, compared to 19 per cent of the ones of opposite opinion. The mean of responses is 3.3. The reason for such a significant amount of neutral answers might be an outcome of the opinion that tourism sustainable development requires cooperation of stakeholders, big investments, etc. and, therefore, not all the issues might be tacked by travellers only.

The last statement "*When planning and booking my trip I consider the principles of sustainability*" was absolutely supported by only 5 per cent of respondents. 13 per cent partly agreed, 36 per cent were neutral and 46 - disagreed. The mean of the responses is 2,6 from which we can conclude that most of the respondents do not think of sustainability when planning and booking leisure trips. To find out the reasons behind it, we pass on to the results of the next question, which are shown in descending order in figure 19.
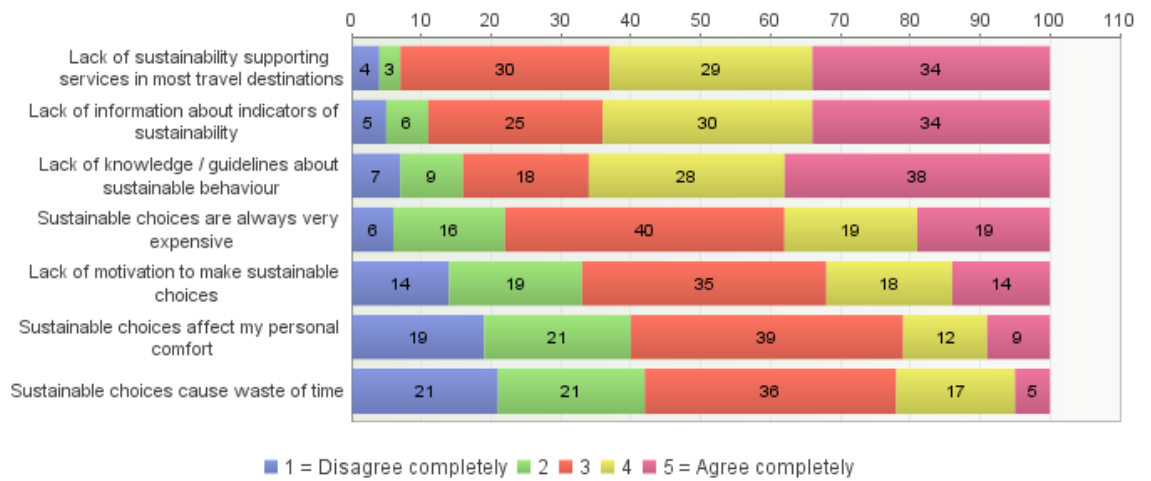
Figure 19. Evaluation of reasons for not travelling in a sustainable way (N=100)

From the graph we can clearly see that the majority of respondents agree with that the first three reasons may prevent them from travelling in a sustainable way. "*Lack of sustainability supporting service in most destinations*" received the highest agreement score with the mean of 3,9. Indeed, sustainability supporting services such as recycling equipment, green buildings, sustainable service providers and other tourism infrastructure, aimed to reduce the negative impact of receiving travellers, requires big investments and successful cooperation of all stakeholders in the destination, which is practically hard to achieve.

"*Lack of information about indicators of sustainability*" and "*lack of knowledge or guidelines about sustainable travel behaviour*" have received almost the same degree of agreement with mean of the responses 3,8. Based on such responses we can conclude that the majority of Generation Y has no sufficient knowledge both about sustainable tourism concept and its tools and on how they can support it by their own actions.

At this point we have enough data to reject assumption 3, stating that Generation Y is aware of sustainable tourism, which has been created based on the information discussed in the theoretical part. Even Generation Y are said to be grown up at the time of peak development of organizations promoting ecology and ethics, and travel quite frequently, in such focused subject as sustainable tourism they still need further enlightening.

As discussed in theoretical chapter, another possible reason that puts Generation Y off *sustainable travel choices* is the conviction that those *are always more expensive*. However, the reality tends to be slightly different. Indeed, 38 per cent agreed with this statement, but at the same time 40 per cent preferred to stay neutral, perhaps implying that it depends on the type of service. The mean of responses is 3.3, which shows that respondents more agree, then disagree with it, never the less, there is no distinctness.

The evaluation of "*lack of motivation to make sustainable choices*" revealed even bigger spread of responses, as the quantity of negative, positive and neutral responses is equal. Such fragmentation suggests that there is an obvious lack of motivation, however, it is not the main constrain in complying with principles of sustainability.

Last two reasons – "*sustainable choices affect my personal comfort*" and "*cause waste of time*" again received a lot of neutral responses, which might be an outcome of low awareness of respondents of what sustainable tourism really is or an evidence of the opinion that it greatly depends on the case. Never the less, the mean of the responses is 2,7 and 2.6 respectively, so we can conclude that most respondents disagree with these statements.

Summing up the main outcomes of this subchapter, we can say that Generation Y appeared to be much less aware about sustainable tourism than expected. The respondents reported unawareness of three out of four main indicators of sustainable tourism. Consequently, the lack of information about sustainability indicators and guidelines about sustainable travel behaviour are in top three reasons behind unwillingness to travel sustainably. Lack of knowledge and education might also be a cause of the existing attitude towards sustainable tourism. Feeling incompetent, generation Y respondents support the idea that sustainable tourism development is more a responsibility of government, industry, professional organisations and travel service providers, rather than travellers. As a result, most of the respondents do not consider sustainability when planning or booking the trip. Yet, there is a ray of hope, as most of the respondents agreed that travelling in a sustainable way increases their travel satisfaction and does not necessarily affect their personal comfort. On the whole, the results illustrate

that Generation Y agree with the importance of sustainable tourism development, but lacks education and motivation to support it personally.

4.5 The use of mobile applications to promote sustainable travel behaviour of Generation Y

The final part of the questionnaire was to connect all previous findings and focus on the aim of this study – investigate if it is possible to make travel behaviour of Generation Y more sustainable with the help of mobile applications and if yes, what could be the best way of doing it?

Finding out respondents' attitude towards the perspective of using mobile applications as sustainable travel advisers, was considered to be a good starting point. The results are presented in descending order in figure 20.
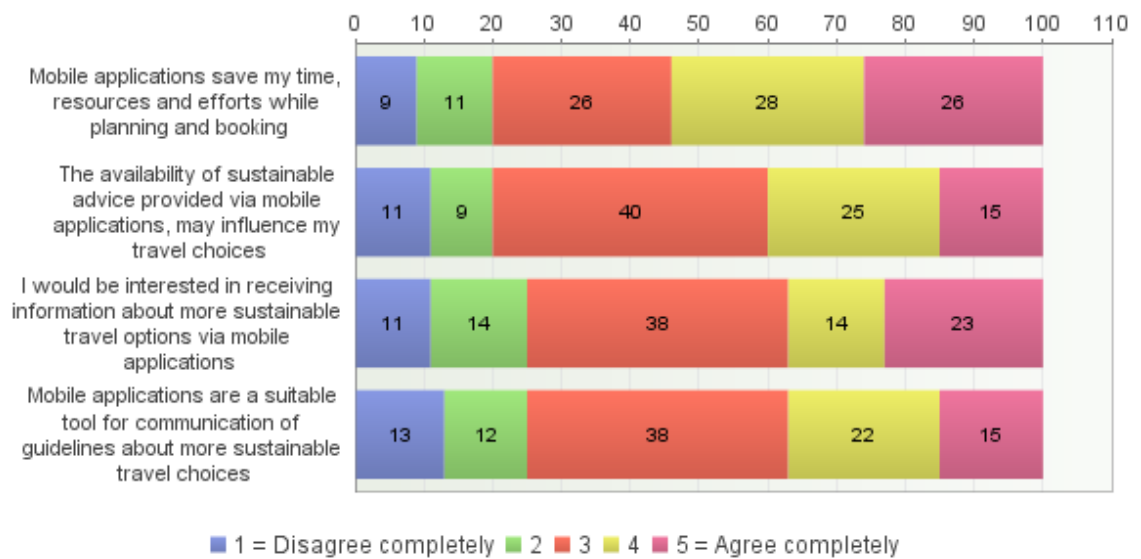
Figure 20. Evaluation of the statements regarding the use of mobile applications to promote sustainable travelling (N=100)

As we can see, the percentage of neutral evaluations of the statements is dominating. This might be explained by the low awareness of sustainable tourism inherent to the majority of respondents, as lack of information often leads to detachment and indifference to the subject.

The statement "*Mobile applications save my time, resources and efforts while planning and booking travel services*" appears to be the most accepted among all the statements, - 54 per cent of respondents agree with it, 26 per cent neither agree nor disagree and 20 – disagree. This statement was meant to measure the attitude towards using mobile applications in travel-related purposes and to see if respondents realise that it is possible to increase sustainability of travelling simply by using mobile applications, as it permit to reduce commuting and resources needed for maintenance of the travel agencies, ticket offices, etc. Even the mean of the respondents is 3,5, which is far from absolute agreement, taking into consideration the novelty of the discussed technology the results look quite optimistic.

The next statement according to the acceptance rating is "*the availability of sustainable advice provided via mobile applications, may influence my travel choices*". About 40 respondents agree with this statement, another 40 are not sure about it, and 20 - disagree. The mean of the responses is 3.2, which is the same also for the following statements. Such results look promising, as we can see that most of the respondents have a positive attitude towards the described idea, even they do not know yet what it might take them to follow the recommendations on more sustainable travelling. Taking into consideration that only 20 per cent disagreed with this statement, we can support *Assumption 4,* which states that sustainable travel guidelines, delivered via mobile applications, may have a positive impact on Generation Y's travel choices.

About 37 per cent of the respondents confirmed that they "*will be interested in receiving information about more sustainable travel options via mobile applications*", which means that there is already an audience who would like to learn more about sustainable tourism. Same amount of the respondents are unsure and 25 per cent would refuse this kind of information. Almost in the same way respondents have evaluated "*Mobile applications are a suitable tool for communication of guidelines about more sustainable travel choices.*"

Like in case of any other innovation launch, the success of attracting those 63 per cent of unsure and unwilling respondents depends on the design of application, relevance

and applicability of guidelines provided and proper promotion and motivation, which we will discuss in the course of the analysis of the last few questions.

From measuring the overall attitude and willingness to use, we pass on to the investigation of what is considered to be the most appropriate format of such kind of application. To do so, several options were designed and the respondents were asked to evaluate each one of them. The results are shown in descending order in figure 21.
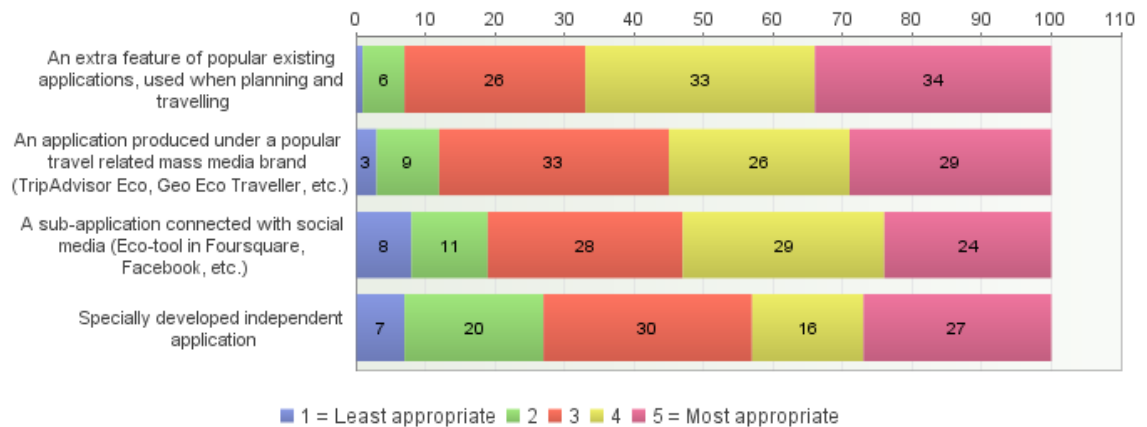

Figure 21. Evaluation of the appropriateness of the format of mobile applications promoting sustainable travelling (N=100)

From the graph we can see that the most appropriate format according to the respondents' opinion is "*an extra feature of popular existing applications, used when planning and travelling*". The mean of the responses is 3,9 out of 5, which evidences quite high level of acceptance. Earlier we have already found out the most popular categories of travel related applications that also cater for the promotion of sustainable tourism. Among those are – navigational, informational and social media applications. At the next step, from every category should be chosen several applications leading in the rating of downloads, to ensure maximum coverage. These applications can then be used as ready platforms for establishing sustainable travel advisers, capable to give fastest returns with minimum efforts and resources needed for promotion or advertising.

Based on the results, we can accept the *Assumption 5*, stating that popular directly and indirectly travel-related mobile applications may represent an appropriate communication tool for delivering sustainable travel guidelines to Generation Y.

"*An application produced under a popular travel related mass media brand*" follows the same logic, although has received a bit smaller score of agreement – 3,7 out of 5.

"*A sub-application connected with popular social media*" like Facebook, Foursquare, Instagram, etc. comes third in the rating, with the mean of the responses equal 3,5. This option was added in respect to Generation Y's high activity in social media, which makes it a good communication tool. However, as mentioned earlier, it seems that the respondents do not directly associate social media with the source of information about tourism in general and sustainable tourism in particular. Nevertheless, the overall attitude is positive, which again means that if done properly this way has also chances to success.

"*Specially developed independent application*" is considered to be the least appropriate according to the results, perhaps due to the need to start its development and promotion from the scratch. As we discussed in the theoretical part, Generation Y tends to use only a few applications on a regular basis (CISCO 2012), which makes it very different to promote the new application, so that it will stand out from the millions of similar ones and take its place in daily TOP 10 of every user. That is why independent application runs the risk of repeating the fate of many unpopular pages devoted to sustainable tourism, which could be found in social media.

Now when we know the best suitable formats of sustainable tourism application, we are coming to the last but, perhaps, one of the most important finding – the most influential factors in making more sustainable travel choices.
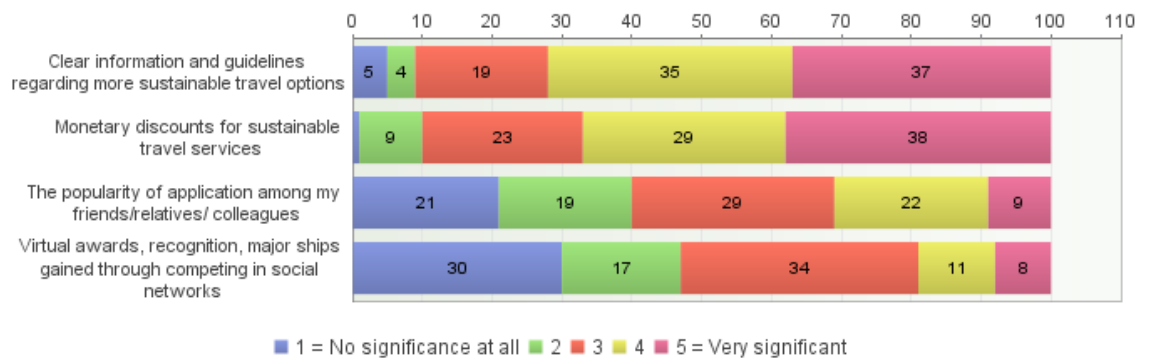
Figure 22. Evaluation of the most influential factors in making sustainable travel choices (N=100)

As we can see from the results presented in descending order, two out of four offered factors were accepted and another two – rejected by the respondents.

Among the accepted ones are "*clear information and guidelines regarding more sustainable travel options*" (72 per cent of agreement) and "*monetary discounts for more sustainable travel services*" (67 per cent of agreement). Clear information and guidelines again highlight the lack of information about sustainable tourism and the willingness of the respondents to improve this situation. Meanwhile, monetary discounts for more sustainable travel services confirm the observation by Voorhees et al. (2010, 3), stating that Generation Y does have concern for the environment, but needs a supporting economic benefit to make eco-friendly choices and purchases.

"The popularity of the application among friends, relatives and/or colleagues" received only 31 per cent of agreement, 29 per cent were uncertain and the majority of the respondents disagree. Rejection of this factor disconfirms the theoretical assumption that Generation Y greatly depends on the opinions and choices of their communities members. However, this question might cause bias as people generally want to look more independent in their choices than they really are.

The statement assuming the influence on sustainable travel choices of *"Virtual awards, recognition and majorships gained through competing in social media"* aimed to measure the extent to which the respondents subject to passion, caused by gamification and competi-

tiveness. The mean of the responses equal 2,5 illustrates that these factors are not so important when it comes to making decisions, which are contrary to the usual travel patterns. We may predict that once the users get involved in a gamified application, they might get affected deliberately; nevertheless this should not be in focus of the attention when thinking of most effective motivations.

As the question of motivation is of high importance in relation to the aim of this research it was decided to support it with an extra open-ended question where respondents could share their thoughts and ideas about other ways how mobile applications may encourage them to choose more sustainable travel options. This question was optional and gained 13 responses, which have collected some valuable ideas:

- Introduction of unified eco-labelling of sustainable travel services (transportation, accommodation, goods, activities, etc.)
- Developing of a special sustainable infrastructure able to satisfy the needs for comfortable travelling and, at the same time, comply with principles of sustainable tourism. For example affordable bicycle and non-motorised boat rentals, transition to eco-friendly fuels, etc.
- Empathising the importance of sustainable travelling in guarding one's health as well as the health of the loved ones and the planet
- Establishing communities of adherents of sustainable tourism
- Active distribution of information about sustainable tourism in mass media, social media and blogs
- Engagement of celebrities and opinion leaders of Generation Y in sustainable travel advertising and promotion
- Show clear comparison of normal and sustainable travel options in price, time, etc.
- Making partner agreements with most popular travel service providers to offer discounts for choosing more sustainable travel options
- Reinforce public education on basics of sustainable travel and tourism.

5   Conclusions and recommendations

Being a huge industry providing a lot of jobs worldwide and a source of income for many developing countries, tourism is seen to play a significant role in global sustainable development. However, as any transition involving diversed groups of stakeholders and big investments, sustainable tourism development is proceeding at low speed and requires constant academic investigation to find out the gaps in existing practices and new ways of improvement. Serving the needs of millions of people every day, in order to develop sustainably, tourism requires not only regulations, designed by the authorities for the industry players, but also the support of the general public. Here comes the challenge, as being so diversed, travellers tend not to respond to generalized appeals, made by various professional organizations. Consequenly, there is a need for more targetted and creative approach, capable to deliver the needed information to the recipient and stand out from the million of other appeals and advertisiments that surround us every day. How this can be achieved?

One of the options is to chose a segment of travellers, study their pequliarities and attempt to appeal to them via communication channel they are likely to use the most. Another options is to transform general knowledge into relevant advices, which are easy to apply in real life. This thesis research attempted to combine both of these options, by exploring the ways to enhance sustainable travel behavior of Generation Y, as a target segment, by the means of advices, communicated through an innovative technological tool – mobile applications.

Generation Y is widely accepted to be the most promising and fastest growing segment in travel industry, primary due to their population, which is the most numerous since Baby Boomers and love for travelling, on which they spend the biggest proportion of income, compared to other generations (UNTWO; WYSETC 2008). Moreover, their expertise in using new technologies makes them highly educated and very influencial in the society, which will increase even more, once they become the dominant generation in the workforce. Finally, being young and travel addicted, Generation Y is likely to have dual presence in travel industry, both as customers and employees. All these

circumstances evidence an urgent need of engagement of Generation Y in sustainable tourism. But what would be the best way of doing it?

While there might be many, this thesis was focused on the investigation of possibilities to fulfil this task with the help of mobile applications, - a rapidly developing ICT component, said to have a significant influence on decision-making process and be actively used by Generation Y. Therefore, research aimed to reveal the level of acceptance of mobile applications by Generation Y in general and in travel related purposed in particular; the attitude towards the perspective of using mobile applications in enhancing sustainable tourism; most used applications when planning and booking travel and additional motivators that can increase the chances of mobile applications to influence Generation Y travel behaviour. In addition, the study investigated such important variables, as Generation Y's travel behaviour and awareness and attitude towards sustainable tourism.

Speaking about general information and guidelines on sustainable tourism currently available to the public, one can conclude that there can be found quite many, - from extensive reports prepared by professional organizations, like UNWTO and UNEP, to sustainable travel guides, developed by mass media, private blogs, communities in social media and even special mobile applications. However, the empirical research results revealed quite low level of awareness of sustainable tourism among Generation Y, even its members are known for their ability to easily find any needed information in Internet within few minutes. It leads to a very important conclusion that Generation Y do not feel their direct responsibility in sustainable tourism developemnt and therefore do not make personal attempts to find out how they can contribute to it. This consequence is supported by the results of another empirically studied question, according to which, Generation Y tend to believe that sustainable tourism development is more up to the govermnent, industry and non-profit organizations, rather than tourists. Therefore, there is a strong need for social advertising and PR-campaigns, highlighting the importance of personal contribution of a traveller to sustainable tourism development. Such campaigns should be initiated and supported by the public sector, implying government and local authorities and then performed by

voluntary sector and mass media. It is important to understand that even mobile applications are in the focus of current research, in the given situation they need support to be better accepted.

In relation to general travel patterns of Generation Y, it should be noted that most of the theoretical assumptions have been supported by the results of the emipical research. Indeed, Generation Y members travel on leisure frequently and prefer to book their route independently, rarely turning to services or advice offered by the travel agencies. Reaffirming their "Digital natives" nickname, they almost never use printed sources of information, preffering it to the Internet. Also, they pay attention to careful planning of trips, almost everytime reserving in advance accomodation and transportation to destination and sometimes also transportation and activities in destination.

Unfortunately, despite considerable travel experience, the majority of Generation Y respondents do not concider principles of sustainable travelling when planning and booking leisure trips. The main reasons behind it, as revealed by the empirical research, are the lack of supporting infrastructure and lack of information about the concept of sustainable tourism and guidelines on how individuals can make their travels more sustainable. At the same time, respondents confirmed that presence of clear information and guidelines regarding more sustainable travel options can influence their travel choices, which again highlight the importance of enlightening activities.

Passing to the perspective of using mobile applications as a tool of communicating sustainable travel advices to Generation Y, based on the empirical results one could conclude that such practice has a good potential. First, because Generation Y has proven to be experinced users and owners of smartphones (in almost all the cases) and tablet computers (in half of the cases), which is a nessary requirement of using mobile applications. Second, because they agree that mobile applications and easy to use and access and are using them both in daily life and travel related purpuses. And, finally, because Generation Y demonstrated a positive attitude towards the idea of using mobile applications as interactive sustainable travel advisers.

Based on the synthesis of theoretical and empirical results, the following recommendations to inrease the influence of mobile applications on making sustainable travel choices by Generation Y, could be offered for travel industry stakeholders or mobile applications developers:

- *Embed sustainable travel adviser function in existing popular application instead of developing an independent application*

Abundance of existing applications and the circumstance that only a few applications are used on a regular basis, makes it very difficult to ensure that new application will manage to attract many users and be used regularly. Instead, one might concider establish partnerships with the existing popular applications, leading in travel related cathegories or developed by a popular travel or mass media brand.

- *Start with presence in most popular cathegories of travel related mobile applications*

According to empirical results, the most used cathegories of mobile applications, both when planning and during the trip, are navigation, general travel information and communication. While it is possible to embed a sustainable travel adviser option in first two cathegories, doing so in communication applications, seems inappropriate, therefore, it needs to be replaced by social media applications that are next according to the usage raiting.

- *Establish good technical facilitating conditions*

The successful implementation of mobile applications can be increased by the improvement of several constraints, revealed by the research. To do list includes: improving the quality of mobile Internet, ensuring that application is easy to use despite the small screen and the last, adressing mainly public sector and destination management organizations - developing the infrastructure supporting sustainable travelling.

- *Ensure relevant and easy to understand content*

The presence of clear information and guidelines regarding more sustainable travel options, might seem obvious, yet concidering the haziness inherent to sustainable tourism indicators and low awareness of Generation Y, this is a challenge. Keeping in mind the pequliarities of Generation Y's perception and learning, the information should be short and practical, rather than theoretical. Among the best suggestions, made by the respondents, were to "introduce unified eco-labelling of sustainable travel

services" and to provide "a clear comparison of less and more sustainable options in price, time and other factors, which is easy to understand."

- *Add value*

Being sophisticated consumers, Generation Y are looking for a value in making any purchase and sustainable choices are not the exception. Monetary discounts offered to encourage sustainable travel behaviour were highly supported by the respondents. Moreover, one of the respondents suggested making partner agreements with most popular travel service providers to create a discount network for the ones choosing more sustainable travel options.

- *Support with active and creative promotion*

Like any other innovation, mobile travel advisors require active promotion to be noticed and accepted by the target audience. The most suitable communication channels will be those, indentified by Generation Y in the course of the empirical researh as the most used when planning and booking the trips – desktop and mobile Internet and friends and relatives recommendation, also known as social currency. Taking into concideration perquliarities of Generation Y as consumers, the appeals should be short, simple but witty, point to the real facts, be visual - supported by pictures or videos and be communicated by opinion-leaders or celebrities. Also, it is important to maintain social currency that could be managed through initiating discussions in social media and creative advertising.

Summing up, it is possible to conclude that mobile applications in general respresent a good tool for communication to Generation Y information on more sustainable travel options and raising their awareness. However, their implementation and ability to turn concern into real actions needs to be supported by a set of corresponding activities and studies.

The future studies in this field could continue with qualitative study aiming to get deeper understanding of revealed findings; consider the influence of information technology on decision-making or focus on finding appropriate tools for engaging in sustainable tourism other living generations.

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6 Attachments

Attachement 1. Questionnaire in English language

Mobile applications as solutions to enhance sustainable travel behaviour of Generation Y

1. Please, indicate your age:

○ 18-22 ○ 23-27 ○ 28-34 ○ >34

2. Please, indicate your gender:

○ Male

○ Female

3. Please, indicate your level of education:

○ Other, please specify

○ High school ○ University Graduate ○ Masters / Ph.D. _____

4. Please, indicate your current employment situation:

○ Employed ○ Unemployed ○ Student full time without job ○ Student with job

5. During the last 12 months how many overnight leisure trips have you taken?

○ 0-1 ○ 2-3 ○ 4-5 ○ > 5

6. How do you usually purchase travel services?

○ Without intermediary (ex: by internet) ○ Via travel agency

8. Indicate your level of use of the information sources below when making travel related purchasing and decisions?

1 = Never use 5 = Always use

	1	2	3	4	5
Desktop Internet (Tripadvisor, Skyscanner, Booking.com, etc.)	○	○	○	○	○
Mobile internet (Tripadvisor, Skyscanner, Booking.com, etc.)	○	○	○	○	○
Social Media (Facebook, Twitter, Instagram, etc.)	○	○	○	○	○
Guidebooks and travel journals	○	○	○	○	○
Friends and relatives recommendations	○	○	○	○	○
Promotional materials: brochures, travel catalogues	○	○	○	○	○
Specialists in travel agencies	○	○	○	○	○

8. Indicate when you usually purchase your travel related services

1 = Always in advance 5 = Always in-trip

	1	2	3	4	5
Transportation to destination	○	○	○	○	○
Accommodation	○	○	○	○	○
Transportation within destination	○	○	○	○	○
Activities and experiences within destination (excursions, dining, etc.)	○	○	○	○	○

9. How long have you been using mobile devices with Internet access?

○ Less than 1 year   ○ 1-2 years   ○ 3-5 years   ○ More than 6 years

10. What kind of devices are you using?

Multiple choice is available

☐ Smartphone ☐ Tablet computer ☐ Personal Digital Assistant ☐ Other_____

11. Indicate your level of agreement with the following statements

1= Disagree Completely 5 = Agree Completely

	1	2	3	4	5
Mobile applications play an important part in my life	○	○	○	○	○
Mobile applications are easy to use	○	○	○	○	○
Mobile applications are easy to access (find & download)	○	○	○	○	○
I frequently turn to mobile application before making a travel decision	○	○	○	○	○
Mobile applications are more convenient than other sources of information	○	○	○	○	○

12. Indicate which mobile applications you are using when planning the trip *

Multiple choice is available

☐ Navigation (GPS, Maps, Way Finders, etc.)

☐ Social Networks (Facebook, Instagram, Foursquare, etc.)

☐ Communication (Email apps, free messengers, Internet phone apps, etc.)

☐ Mobile Marketing (Application developed by companies for marketing of certain goods or services by providing information and discounts for its users and organizing contests / awards, alerts, etc.)

☐ Security / Emergency (Apps providing medical and emergency guidelines, and corresponding information)

☐ Transactional (Banking, shopping, reservations)

☐ Information (General Travel Info, City Guides)

☐ Entertainment (Games, TV/Music/Video, Picture editors, etc.)

☐ None

13. Indicate which mobile applications you are using during the trip

Multiple choice is available

☐ Navigation (GPS, Maps, Way Finders, etc.)

☐ Social Networks (Facebook, Instagram, Foursquare, etc.)

☐ Communication (Email apps, free messengers, Internet phone apps, etc.)

☐ Mobile Marketing (Application developed by companies for marketing of certain goods or services by providing information and discounts for its users and organizing contests / awards, alerts, etc.)

☐ Security / Emergency (Apps providing medical and emergency guidelines, and corresponding information)

☐ Transactional (Banking, shopping, reservations)

☐ Information (General Travel Info, City Guides)

☐ Entertainment (Games, TV/Music/Video, Picture editors, etc.)

☐ None

14. What may be the reasons for you not to use mobile applications?

1 = Disagree completely 5 = Agree completely

	1	2	3	4	5
High price of smartphones/tablets/PDA	○	○	○	○	○
Limited service and small screen	○	○	○	○	○
Complicated navigation system	○	○	○	○	○
Lack of information about mobile applications	○	○	○	○	○
Bad quality of mobile Internet connection	○	○	○	○	○
Limited knowledge of how to use mobile applications	○	○	○	○	○
A general lack of interest in mobile technologies	○	○	○	○	○

15. Indicate your level of awareness about the following indicators of sustainable tourism

1= No knowledge at all 5= A lot of knowledge

	1	2	3	4	5
Amount of CO_2 emissions from various modes of transport (Plane, train, ship, car, etc.)	○	○	○	○	○
Voluntary carbon (CO_2) off-setting schemes	○	○	○	○	○

	1 2 3 4 5
Green hotels / ecological accommodation guidelines	○ ○ ○ ○ ○
Principles of sustainable behaviour in destination	○ ○ ○ ○ ○

16. Indicate your opinion on the following statements

1= Disagree Completely 5 = Agree Completely *by Sustainable Travel Behaviour we understand individual's actions towards:
- Minimizing the negative ecological impacts caused by traveling (choosing more ecological means of transport and accommodation, thoughtful use of recourses (water, energy, etc.) choosing eco-friendly activities and service-providers, etc.
- Respectful and supportive attitude towards the local society in destination: respecting local traditions and culture, supporting local service-providers by purchasing local food, crafts, services, etc.

	1 2 3 4 5
Travelling in a sustainable way* brings me more travel satisfaction	○ ○ ○ ○ ○
Travel service provider should always follow sustainable practices	○ ○ ○ ○ ○
While planning and booking my trip I consider principles of sustainability	○ ○ ○ ○ ○
Sustainable tourism development is a responsibility of traveller	○ ○ ○ ○ ○
Sustainable tourism development is a responsibility of government, industry and professional organizations (United Nations, World Travel Organization, etc.)	○ ○ ○ ○ ○

17. Evaluate the reasons why you may not always make sustainable choices

1= Disagree completely 5 = Agree completely

	1	2	3	4	5
There is a lack of knowledge / guidelines about sustainable behaviour	○	○	○	○	○
There is a lack of information about indicators of sustainability	○	○	○	○	○
Sustainable choices are always very expensive	○	○	○	○	○
Lack of sustainable supporting services in most travel destinations	○	○	○	○	○
Sustainable choices affect my personal comfort	○	○	○	○	○
Sustainable choices cause waste of time	○	○	○	○	○
Lack of motivation to make sustainable choices	○	○	○	○	○

18. Indicate your level of agreement with following statements

1= Disagree completely 5 = Agree completely

	1	2	3	4	5
Mobile applications save my time, resources and efforts while planning and booking	○	○	○	○	○
Mobile applications are a suitable tool for communication of guidelines about more sustainable travel choices	○	○	○	○	○
I would be interested in receiving information about more sustainable travel options via mobile applications	○	○	○	○	○
The availability of sustainable advice provided via mobile applications, may influence my travel choices	○	○	○	○	○

19. Indicate the appropriate format of mobile application meant for communication of advice on more sustainable travel options

1= Least appropriate 5= Most appropriate

	1	2	3	4	5
Specially developed independent application	○	○	○	○	○
An extra feature of popular existing applications, used when planning and travelling	○	○	○	○	○
A sub-application connected with social media (Eco-tool in Foursquare, Facebook, etc.)	○	○	○	○	○
An application produced under a popular travel or mass media brand (TripAdvisor Eco, Geo Eco Traveller, etc.)	○	○	○	○	○

20. What would influence you in making more sustainable travel choices?

1= No significance at all 5 = Very significant

	1	2	3	4	5
Clear information and guidelines regarding more sustainable travel options	○	○	○	○	○
Monetary discounts for sustainable travel services	○	○	○	○	○
Virtual awards, recognition, major ships gained through competing in social networks	○	○	○	○	○
The popularity of application among my friends/relatives/ colleagues	○	○	○	○	○

21. Is there any other way how mobile applications may encourage you to choose more sustainable travel options?

_____

Исследование влияния мобильных приложений на склонность

Поколения У к экологичному и ответственному туризму

1. Пожалуйста, укажите Ваш возраст

○ 18-22 ○ 23-27 ○ 28-34 ○ >34

2. Пожалуйста, укажите Ваш пол

○ Мужской

○ Женский

3. Пожалуйста, укажите Ваш уровень образования

○ Общая образовательная школа ○ Высшее образование ○ Степень Магистра, аспирант ○ Другое, пожалуйста, укажите:

_____

4. Пожалуйста, укажите Ваш род занятий

○ Работаю ○ Не работаю ○ Студент, не работаю ○ Студент, также работаю

5. В скольких туристических поездках (с ночевкой) Вы побывали за последние 12 месяцев?

○ 0-1 ○ 2-3 ○ 4-5 ○ > 5

6. Как Вы обычно приобретаете туристические услуги?

○ Самостоятельно (например, через Интернет) ○ Через туристическое агентство

7. Пожалуйста, укажите, как часто вы используете перечисленные источники нформации при планировании или покупке туристических поездок/услуг?

1 = Никогда не использую 5 = Всегда использую

	1	2	3	4	5
Стационарный Интернет (Tripadvisor, Skyscanner, Booking.com, и тд.)	○	○	○	○	○
Мобильный Интернет (Tripadvisor, Skyscanner, Booking.com, и тд.)	○	○	○	○	○
Социальные сети (Facebook, Twitter, Instagram, и тд.)	○	○	○	○	○
Путеводители и журналы о путешествиях	○	○	○	○	○
Рекомендации друзей и родственников	○	○	○	○	○
Рекламные брошюры, туристические каталоги и др.	○	○	○	○	○
Рекомендации туристических агентов	○	○	○	○	○

8. Пожалуйста, укажите, когда Вы планируете приобретение перечисленные туристических услуг

1 = Всегда до поездки 5 = Всегда во время поездки

	1	2	3	4	5
Транспорт до пункта назначе ия	○	○	○	○	○
Размещение	○	○	○	○	○
Транспорт в пределах пункта назначения	○	○	○	○	○
Развлечение и прочие занятия в пункте назначения (экскурсии, бронирование столов в ресторанах, билеты на представления и тд.), dining, etc.)	○	○	○	○	○

9. Как долго Вы используете мобильные устройства с доступом в Интернет?

○ Менее 1 года ○ 1-2 года ○ 3-5 лет ○ Более 6 лет

10. Какие именно устройства Вы используете?

Вы можете выбрать несколько вариантов

☐ Смартфон ☐ Планшетный компьютер ☐ КПК (карманный персональный компьютер) ☐ Другое, пожалуйста, укажите

_____

11. Отметьте степень Вашего согласия с перечисленными утверждениями

1= Абсолютно не согласен 5 = Абсолютно согласен

	1	2	3	4	5
Мобильные приложения играют важную роль в моей повседневной жизни	○	○	○	○	○
Мобильные приложения легки и удобны в использовании	○	○	○	○	○
Мобильные приложения легко доступны для пользователей (просто найти и скачать)	○	○	○	○	○
Я часто использую мобильные приложения, перед тем как принять решение, связанное с туристическими поездками	○	○	○	○	○
Мобильные приложения удобнее других источников информации	○	○	○	○	○

12. Пожалуйста, укажите, какими мобильными приложениями Вы пользуетесь при планировании поездки

Возможно   несколько вариантов ответа

111

☐ Навигационные (GPS, Карты, навигаторы общ. транспорта и тд.)

☐ Социальные сети (Facebook, Instagram, Foursquare и тд.)

☐ Коммуникационные (Мобильная почта, мобильные чаты, Интернет телефония и тд.)

☐ Приложения, разработанные компаниями и предлагающие пользователям новости компании, скидки, участия в конкурсах и тд.

☐ Приложения, предоставляющие инструкции в случае чрезвычайных ситуаций и прочие сведения о безопасности

☐ Транзакционные приложения (мобильный банк, покупки и бронирования и тд.)

☐ Информационные (Погода, мобильные путеводители и тд)

☐ Развлечения (Игры,ТВ/Музыка/Видео, редакторы изобра ений и тд.)

☐ Не использую вообще

13. Пожалуйста, укажите, какими мобильными приложениями Вы пользуетесь при планировании и в течение поездки

Возможно несколько вариантов ответа

☐ Навигационные (GPS, Карты, навигаторы общ. транспорта и тд.)

☐ Социальные сети (Facebook, Instagram, Foursquare и тд.)

☐ Коммуникационные (Мобильная почта, мобильны чаты, Интернет телефония и тд.)

☐ Приложения, разработанные компаниями и предлагающие пользователям новости компании, скидки, участия в конкурсах и тд.

☐ Приложения, предоставляющие инструкции в случае чрезвычайных ситуаций и прочие св дения о безопасности

☐ Транзакционные приложения (мобильный банк, покупки и бронирования и тд.)

☐ Информационные (Погода, мобильные путеводители и тд.)

☐ Развлеч ния (Игры,ТВ/Музыка/Видео, редакторы изображений и тд.)

☐ Не использую вообще

14. Пожалуйста, оцените причины, из-за которых Вы не склонны использовать мобильные приложения

1 = Абсолютно не согласен 5 = Абсолютно согласен

	1 2 3 4 5
Высокая стоимость смартфонов/планшетов/КПК и тд.	○ ○ ○ ○ ○
Ограниченное количество услуг и маленький экран	○ ○ ○ ○ ○
Сложность в использовании	○ ○ ○ ○ ○
Недостаточность информации о мобильных приложениях	○ ○ ○ ○ ○
Плохое качество мобильного нтернета	○ ○ ○ ○ ○
Нехватка инструкций об использовании мобильных приложений	○ ○ ○ ○ ○
Отсутствие интереса к мобильным технологиям	○ ○ ○ ○ ○

15. Укажите степень Вашей осведомленности о существующих практиках устойчивого туризма

1= Совершенно не осведомлен 5: Очень хорошо осведомлен *Устойчивый туризм подразумевает большую социальную ответственность при путешествии, выражающуюся через уважительное отношение к природе и ресурсам, местной культуре и традициям, а также поддержке местных бизнесов и ремесел. Устойчивый туризм это сочетание экологичного и ответственного туризма.

	1 2 3 4 5
Объем выбросов CO2 (углекислый газ) от разных видов транспорта (Самолет, поезд, паром, автобус, частная машина и тд.)	○ ○ ○ ○ ○
Туристские эко-налоги и платежи, а также схемы добровольных пожертвований для нейтрализации выбросов	○ ○ ○ ○ ○

CO_2, предлагаемые некоторыми авиалиниями, гостиницами и тд.)

	1 2 3 4 5
Экологичные отели и правила экологичного проживания в отелях	○○○○○
Правила экологичного и ответственного поведения на месте отдыха	○○○○○

16. Укажите степень Вашего согласия со следующими утверждениями

1= Абсолютно не согласен 5 = Абсолютно согласен

	1 2 3 4 5
Я получаю большее удовлетворение, когда путешествую, соблюдая принципы ответственного и экологичного туризма	○○○○○
Все организации, работающие в области туризма должны соблюдать принципы устойчивого развития туризма	○○○○○
Я учитываю принципы ответственного и экологичного туризма при планировании путешествий	○○○○○
Устойчивое развитие туризма - это ответственность туристов	○○○○○
Устойчивое развитие туризма - это ответственность государств, игроков индустрии и профессиональных организаций (ООН, Всемирная Туристическая организация и др.)	○○○○○

17. Оцените возможные причины, по которым Вы не всегда следуете принципам ответственного и экологичного туризма

1= Абсолютно не согласен 5 = Абсолютно согласен

	1 2 3 4 5
Нехватка информации и/или инструкций по соблюдению принципов ответственного и экологичного туризма	○○○○○

	1 2 3 4 5
Нехватка информации о существующих практиках устойчивого развития туризма	○ ○ ○ ○ ○
Экологичный и ответственный туризм всегда дороже	○ ○ ○ ○ ○
Нехватка инфраструктуры, поддерживающей развитие устойчивого туризма	○ ○ ○ ○ ○
Соблюдение принципов ответственного и экологичного туризма приводит к неудобствам	○ ○ ○ ○ ○
Соблюдение принципов ответственного и экологичного туризма приводит к потере времени	○ ○ ○ ○ ○
Нехватка мотивации к соблюдению принципов ответственного и экологичного туризма	○ ○ ○ ○ ○

18. Укажите степень Вашего согласия со следующими утверждениями

1= Абсолютно не согласен 5= Абсолютно согласен

	1 2 3 4 5
Использование мобильных приложений в процессе планирования и покупки туристических услуг, экономит мо время, усилия и прочие ресурсы	○ ○ ○ ○ ○
Мобильные приложения являются оптимальным каналом коммуникации рекомендаций о более экологичных и ответственных туристических услугах	○ ○ ○ ○ ○
Я бы хотел/а получать рекомендаций о более экологичных и ответственных туристических услугах через мобильные приложения	○ ○ ○ ○ ○
Рекомендаций о более экологичных и ответственных туристических услугах, доставленные через мобильные приложения, могут повлиять на мои решения и покупки	○ ○ ○ ○ ○

19. Укажите, какой формат мобильных приложений, по Вашему мнению, лучше всего подходит для передачи рекомендаций о более экологичных и ответственных туристических услугах

1= Наименее   подходящий 5= Наиболее подходящий

	1	2	3	4	5
Специально разработанное, независимое приложение	○	○	○	○	○
Дополнительная функция в уже существующих мобильных приложениях, пользующихся популярностью при планировании и в процессе путешествия	○	○	○	○	○
Приложение, соединенное с популярными социальными сетями (Foursquare, Facebook, Вконтакте, и тд.)	○	○	○	○	○
Приложение, разработанное под известным туристическим брендом (TripAdvisor Eco, Geo Eco Traveller, и тд.)	○	○	○	○	○

20. Пожалуйста, оцените, степень влияния перечисленных факторов, на Ваше желание следовать принципам экологичного и ответственного туризма?

1= Очень незначительно 5 = Очень значительно

	1		3	4	5
Четкая и понятная информация и рекомендации о более экологичных и ответственных туристических услугах и практиках устойчивого туризма	○	○	○	○	○
Скидки при выборе экологичных и ответственных туристических услуг	○	○	○	○	○
Виртуальные награды и звания, присужденные в социальных сетях в процессе соревнования с другими пользователями	○	○	○	○	○

Популярность таких мобильных приложений среди моих
друзей/родственников/коллег   ○ ○ ○ ○ ○

21. Пожалуйста, назовите другие причины, которые могли бы повлиять на
Ваше желание учитывать рекомендации мобильных приложений о более
экологичных и ответственных туристических услугах

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