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PERSUASIVE DESIGN FOR NEAR HOME TOURISM

ABSTRACT

Muhammad Sayedur Rahman: Persuasive Design for Near Home Tourism
Master of science thesis
Tampere University
Master's Degree Programme in Information Technology
June, 2020

Travelers go to long distance traveling more compared to short distance traveling which increases carbon dioxide emission. Carbon dioxide emission has detrimental effect on environment. We have decided to persuade the travelers towards Near Home Tourism by designing a persuasive web service. The aim of our thesis on figuring out the obstacles and requirements of the travelers and designing a persuasive website for Near Home Tourism so that travelers grow their interest towards Near Home Tourism instead of distance traveling. Moreover, we have implemented web elements through persuasive techniques and followed a persuasive method to design a persuasive website.

We have followed Fogg persuasive design methodology. Our research method consists of six steps. In the first step, we have reviewed relevant research work. In the second step, we have conducted interview of our target audience who are students living in Tampere and the total number of participants were eight. After collecting interview data we have analyzed it to figure out the obstacles and users' requirements regarding persuasive website for Near Home Tourism.We have found that users' obstacles are buying tickets, booking hotels, selecting destination, and knowing security issue of hotels and destination places. They want to get a persuasive website which will solve their mentioned problems and will provide information also about price comparison, restaurants, and car rent. Moreover, they want to see user's rating of hotels, and see contact details of website as security purpose. In the third step, we have imitated of tourism websites and figured out how persuasive techniques are implemented there. In the fourth step, we have designed high fidelity prototype for Near Home Tourism based on the users' requirements. In the fifth step, we have conducted the prototype evaluation with User Experience Questionnaire (UEQ) and post evaluation open-ended questions where eight participants have taken part in evaluation session. In the sixth step, we have proposed final version of persuasive design web service for Near Home Tourism.

In evaluation, we have measured the Pragmatic, Hedonic, and Attractiveness value of our design with User Experience Questionnaire (UEQ) and in post evaluation open ended questions. We have conducted evaluation session with eight participants. After collecting the data we have compared our evaluation result with the benchmark result of UEQ. Our evaluation result of Pragmatic, Hedonic, and Attractiveness suggests that our designed prototype belongs to excellent category. Furthermore, they have said that they will not face problems to do all kinds of traveling activities because of availability of all necessary information and links. In addition, they also have said that it is easy to use as well.

We also have got constructive comments from participants to be corrected. In case of correction participants said that color combination was not satisfactory and wanted to see Google maps in design. However, in next version all functionalities will be interactive and more participants will be involved during evaluation session. Due to time limit we could not go for iterative process to refine our design.

Keywords: Persuasive web service, Fogg behaviour model, design experience in multicultural, near home tourism, Cialdinini's six principle, persuasive elements, approach of persuasive design.

The originality of this thesis has been checked using the Turnitin OriginalityCheck service

PREFACE

I come by an idea for this thesis from our course that is "User Experience Design and Evaluation". By doing research for my research work I had to study many interesting and informative scientific articles which helps me to sharpen my deep understanding regarding persuasive models and persuasive design elements.

I would like to give the heartiest gratitude to my supervisor Dr. Kirsikka Kaipainen who patiently guided me with concrete comments and valuable feedback. First day of meeting with my supervisor is till memorable because of fruitful discussion about topic. As Persuasive Design for Near Home Tourism is novel topic for me, from time to time my supervisor was driving force for me with valuable suggestion and by closely mentoring that helped me to go ahead. Moreover, I appreciate all of my participants who gave me time and effort to assist my work of user study and evaluation.

Finally, I also pay my rich tribute to all my beloved family members who give me endless support and motivation towards my education. I would prefer to give thank as well to my friends who support me in my difficulty and help me in my education and motivate me in research.

Tampere, June, 2020

Author

Muhammad Sayedur Rahman

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LIST OF SYMBOLS AND ABBREVIATIONS

CUE	Component of User Experience
CP	Cialdinini's Six Principle
PSD	Persuasive System Design
UEQ	User Experience Questionnaire

1. INTRODUCTION

Nowadays many people from all over the world go for national and international traveling. Traveling is popular activity for the tourists to refresh themselves and it is also one kind of physical exercise too. According to Salazar, traveling is escaping from mundane routine life and engrossing with otherness [1]. Moreover, Plog has stated that the destination is explored by allocentric travelers who love experiencing new cultures and environmental challenges [2]. Additionally, many studies gave rare attention about domestic tourism, and as a result detailed information about it remained unremarked, unaddressed and unexplained to travelers [3]. Hence, the travelers do not get to know information about domestic tourism. Furthermore, day by day travelers incline towards international traveling. In 2018, travelchinaguide [4] surveyed that 141.2 million Chinese tourist went for inbound trip and 149.72 million Chinese tourist went for outbound trip. It seems that domestic/proximate tourist places are too mundane to serve tourist's interest. When travelers go for long-distance traveling it increases large amount of carbon dioxide emission that has detrimental impact on environment. The complexity of website also dissuades travelers to go for both national and international traveling as well. One study has showed that because of having large amount of information in tourism website, many tourists find difficulty to search information on website to make their plan for the trip [5]. However, scholars have been against with distance traveling because of carbon dioxide emission, traveling cost, and phisycal challenges (Dubois & Peeters, 2010; Hay & Becken, 2007). Moreover, at present tourism scholarship concentrates on upholding the benefits of proximate traveling through which life and tourism integrates [6]. So we have decided to persuade travelers towards near home by designing a persuasive web service. Furthermore, when travelers will go for near home tourism it will minimize carbon dioxide emission on environment, save traveling cost, and reduce physical risk as well. So our research topic is "Persuasive Design for Near Home Tourism". In our research along with finding out users' obstacles and requirements regarding near home tourism we will also discover how persuasive web service could be designed to make people interested in near home tourism.

1.1 Objective and research questions

Our research goal is to design a prototype of persuasive traveling website for near home tourism that will make people more interested in near home tourism instead of going international traveling/long-distance traveling. For this reason we will follow Fogg

persuasive step by step design method to design a website where web elements will be implemented with persuasive features/techniques. Our target group is the students who live in Tampere and we will conduct the user study of them. We will also imitate different tourism websites to find out how a persuasive techniques are implemented. From the user study, data will be collected and analyzed to find out user's needs and obstacles regarding designing a persuasive platform for near home tourism. After that we will go for prototype design. After designing the high fidelity prototype we will carry out the evaluation with the users to get to know their feedback about our design whether it has met their expectation or not. It will be a continuous process and final design will be proposed based on the user's needs. Our research questions are given below.

1. What are the traveler's requirements and problems related to near home tourism?

2. What kind of persuasive elements should a web service for near home tourism have?

3. What is the user experience of our website designed to persuade travelers to near home tourism?

2. RELATED WORK

In this chapter we discuss persuasive design, what kind of models/frameworks are existed, what are the general approaches of persuasive design, what cultural factors could be considered in design, and we also analyze how the different persuasive techniques are implemented in tourism websites. At the end we have discussed the summary of related work and also ethical issue of persuasive design.

2.1 Persuasive design

According to the definition of Cambridge Oxford dictionary [7] persuasion means the action of persuading someone or of being persuaded. According to Richard M. Perloff is, "a symbolic process in which communicators try to convince other people to change their attitudes or behaviors regarding an issue through the transmission of a message in an atmosphere of free choice" [8]. Moreover, Simons et al refers persuasion to human communication that is designed to influence people's beliefs, values, or attitudes [9]. Persuader can not force to persuade to change their attitude but to persuade them persuader can use logic. Furthermore, Simons et al has identified the persuasive website as ability of website which elicits favourable impression to users. Persuasive design has great influence especially in E commerce, health sector, and in organization management [10]. But nowadays persuasive technique is used in all fields from print media to electronic media to influence human behavior. The reason behind the persuasion is to draw the attention of the users, but persuasion demands time and it does not happen overnight. At first Aristotle discussed persuasive strategies in his book named Rhetoric [11]. Since then researchers have been trying to find out the persuasive strategies that have huge influence on changing the human mind. The developers of web or mobile applications think that users guide their decision after considering all information found in mobile app/website and on the basis on it users take their decision about that website/mobile app whether it is good or bad. But, practical situation is different from their thinking, users led a busy life and they search for a shortcut for everything, so they just take the decision on the basis of important information posted on platform/websites. In [5] the authors have showed that a lot of information on the website dissuades the users. So to design a persuasive website important information and persuasive strategies both are crucial. Different persuasive methods and strategies are present to design a persuasive website.

2.2   Approaches of persuasive design

There are many persuasive models but here we discuss some popular and familiar models of persuasive design which are Fogg eight steps persuasive method [12], Cialdini's six principles [13], Fogg Behavior model [15], PSD (Persuasive System Design) model [16]. We discuss those models elaborately in this chapter.

2.2.1   Cialdini's six principles

Persuasive design is being riched by its own frameworks/models which helps the designer to design persuasive system. In 1984 professor Robert Cialdini published a well famous book named Influence [13]. In his book he has described the most influential motivating techniques/features which are responsible to change the human mind positively and help users to facilitate their decision. He has described these six factors as universal persuasive techniques to influence the human mind and those factors are Reciprocity, Scarcity, Authority, Consistency, Liking, and Social proof. Reciprocity means someone offers something and in return he/she might get something. For example, in a traveling website when users search hotels they get a list of suggested hotels. Here traveling site has offered some hotels and in return the users might choose one or more hotels from the list. Scarcity means limited availability of the resources like "only two things left" etc. Authority indicates that people have tendency to obey knowledgeable and expert person. Additionally, Consistency conveys that people are consistent with the things what they have done/said before. Liking indicates that people like to say yes whom they like or follow. Social proof implies that people prefer believing/dooing what others believe/do. The authors in [14] have showed that to design a persuasive website two factors are important which are Hygiene factor and motivating factor. The Hygiene factor is web contents and motivating factors are Cialdini's six principles. So from this research the effectiveness of Cialdini's six principles to design a persuasive website is known .

2.2.2   Fogg Behavior model

After Cialdinini's principles in 2003 another persuasive model named Fogg Behavior Model (FBM) has been developed by B. J. Fogg, who is a professor at Stanford University. He has been studying to discover on how to change human behavior. After doing research he has come up with the decision that to change the human behavior three factors are needed to know which are Motivation, Ability, and Trigger [15]. Motivation means people have to be motivated sufficiently to change their behavior. Ability means users have to be given the opportunity to complete their task which means

platform has to be simple or understandable for users to do a particular work without giving unnecessary effort. Moreover, Trigger means people have to be triggered or prompted to do the target behavior. All factors inclusively work to change human behaviour. So the whole things can be expressed as an equation which is B=MAT. Where B=behavior, M= motivation, A= ability and T= trigger. He has described the whole equation in a graph below see in Figure1. So when motivation and ability places a person above behaviour activation threshold (curved line in Figure 1) then trigger will lead a person to perform the target behaviour. Only two factors motivation ,and ability are not enough to perform the target behaviour. When motivation, ability, and trigger happen together then it has a high probability to perform the target behaviour. For example, one person wants to practice a guitar everyday because he/she is motivated on it and he/she has also the ability to play the guitar but in spite of having both qualities he/she might not practise the guitar everyday. So what is the reason behind it?. The reason could be due to lack of remainder like alarm, announcement etc. The trigger is one kind of remainder which could be given in several ways via text message, notification, sound, announcement etc. A successful trigger has three characteristics which are it has to be eye catching, it must relate to target behaviour and it must happen at the right time like when users are motivated and able to perform their target behaviour. Trigger happening at bad time might irritate or disturb the users. When a website motivates users and gives the chance to complete the task after that if it gives notification to the users then it will prompt the users to perform their target behaviour. According to Fogg, motivation cab be embedded in design through pleasure/pain, hope/fear, social acceptance/rejection. Moreover, ability(simplicity) can be embedded in design through money, time, brain cycle. Trigger can be added in design through implementing of video, text notification, sound, comparison.
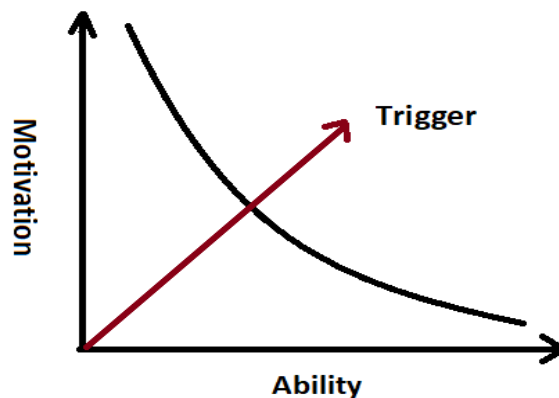
Figure 1. Fogg behavior Model

Fogg behaviour model facilitates the designer to understand the human behaviour but it does not go into the deeper explanation in case of implementation in design about these three elements which are motivation, ability(simplicity), and trigger [15]. In addition, it is not mentioned clearly that without trigger whether the users will perform their target task or not. Furthermore, there are no persuasive design features described in this model and even it does not provide any structural thinking to design a persuasive platform. On the other hand, Fogg eight step method is well-structured to design a persuasive platform.

2.2.3   Fogg eight steps persuasive method

General persuasive procedures have been developed by BJ Fogg in which he showed that how to create a persuasive technology by following eight steps methods [12]. This process begins with careful thinking then goes through some small steps. When design team attains the success in every small step then they move on to next step and in that way gradually they achieve their final goal. This technique leads growing success rather than failure. Failure is not a bad practice in designing a persuasive technology but it is bad when it gets failure even after spending moth, year or huge amount of money. Even hard or large ambitious projects will succeed when it goes through the small steps. If we look at popular internet consumer service like Facebook, at first it has started with small number of features and gradually more features have been added to it. So step by step process brings success of goal and prevents wasting of money because design team does not move on to next until achieving success in each step. Furthermore, this method has clear explanation which step deals with what. According to Fogg to create a

persuasive website the first step is to choose a simple behavior as target. Second and third step deals with finding target audience and obstacles regarding goals. Fourth step deals with defining whether it will be a web application or mobile apps. Fifth and six step deals with finding persuasive examples and imitating of these persuasive examples. Seventh step deals with design implication and evaluate it by the users. Eighth step deals with selecting final product and bringing into market. It is iterative and well structured method to design a persuasive platform. Here how to design a persuasive product is clearly explained. The whole methodology has been illustrated by Fogg by a Figure 2.
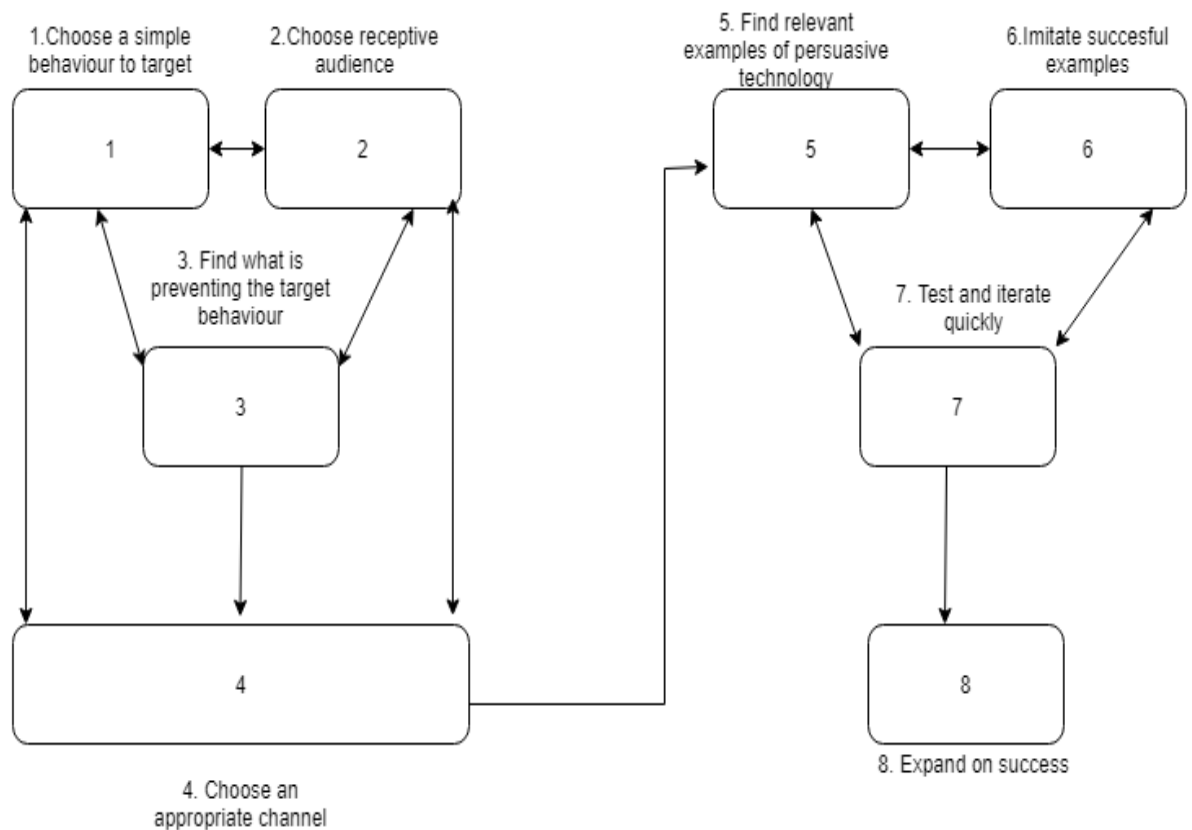
Figure 2. Eight steps methods

2.2.4   Persuasive System Design Framework (PSD)

However, to get out from the limitations of Fogg behaviour model, Persuasive Systems Design framework (PSD) is appeared which has been developed by Oinas-Kukkonen and Harjumaa in 2009 [16]. This model provides the structural thinking for designing a persuasive platform and proposes 28 persuasive design features/techniques. PSD model consists of seven postulates which belong to three categories and twenty-eight design principles which belong to four categories. To design a persuasive platform This model emphasizes on analyzing the persuasion context first which consist of three things first one is the Intent (the intended change in behaviors and/or attitudes), second one is the Event (analyzing the use context, user context and the technology context), and third

one is the Strategy (finding out the technique and message that will promote persuasion). To apply PSD model the designers first have to identify what will be there in Intent, Event and Strategy for designing a persuasive platform. Among these three field Strategy is important because it defines the path/route and gives the message which prompts the persuasion of the users. According to Petty and Cacioppo the path/route is key persuasion strategy of the users [17]. This strategy is implemented through 28 design principles and these design principles belong to four categories which are Primary task support, Dialog support, Social support, and System credibility support. The authors in [16] have given the descriptions of these 28 persuasive features/techniques which are listed in Table 1.

Table 1.   *Twenty eight persuasive techniques and their description*

Primary task support category (works on users' behaviour goals and their progress)	
Persuasive features	Descriptions of persuasive features
Reduction	Application should reduce the effort of users to perform their task
Tunneling	Application should guide users with path that carries users to their target behaviour
Tailoring	Application should customize information based on users' potential interest
Personalization	Application should offer personalized content
Self-monitoring	Application should provide the opportunities to the users to keep track of their activities
Simulation	Application should provide opportunity to observe cause & effect of users' behaviour
Rehearsal	Application should provide opportunity to rehearse

Dialogue support category (works on users' feedback, human –computer interaction)	
Reward	Application should offer reward to the users
Remainders	Application should remind users about their target behaviour.
Praise	Application should offer praise to the users via message, words, sound
Suggestion	Application should offer suggestions to users
Social role	Application should offer social actors (eg,online virtual assist)
Similarity	Application should imitate their users by language,date, and currency
Liking	Application should have a good looking that will be appealing to the users
Social support category (facilitates social communication of users)	
Social learning	Application should provide opprotunity to follow other's behaviour and outcome of their behaviour
Social comparison	Application should provide opportunity to compare performance with others
Normative influence	Application should provide opportunity to gather people who have the same goals to influence the other people .
Social facilitation	Application should provide opportunity to follow others' behaviours

Cooperation	Application should provide opprtunity to cooperate users (users review)
Competition	Application should provide facility to compete with other users (online auction)
Recognition	Application should provide public recognition Like story of succeeded people is posted on system to let to know others
System Credibility category (works to create credibility among users)	
Trustworthiness	Application should be viewed as trustworthy and provide unbiased information
Expertise	Application should stay update with time like providing updated content
Surface credibility	Application should have competent look and feel. Design reflects the context
Real-world feel	Application should provide clear information about something so that it makes sense real.
Authority	Authority of the system
Third party endorsement	Endorsement from secured source
Verifiability	Application should provide opportunity to justify the posted content.

2.2.5   Conger's persuasive strategy

Conger proposed four key strategies to design persuasive user interface. The first strategy is building credibility which is responsible to gain the confidence of users. The second strategy is to identify and share the mutual understanding between persuader and persuadee which means creating some sort of bonding between them. The third strategy is reinforcing the position by using logic. The fourth strategy is to connect each other emotionally. The persuasive website has strong sense of emotion to draw the

attention of the users. Conger's persuasion techniques also covers the Aristotle' three persuasive techniques [11]. The Aristotle has proposed three persuasive techniques which are credibility, emotion, and reasons. However, Conger did not give detail how to achieve these four strategies in persuasive website design. The author in [18] has explained how to implement these four persuasive strategies in design. According to the author mutual understanding or relationship can be implemented through Reciprocity, Alignment, Engagement, Consistency, Similarity. The emotion can be achieved by applying persuasive techniques which are Scarcity, Contrast, Liking, Surprise, Interest, Harmony. The credibility can be achieved through implementing some persuasive techniques like Social proof, Assurance, Authority, Verifiability, and Third party endorsement. The logic can be achieved through verifying and reasoning. So we have noticed that Conger's three persuasive strategies which are relationship, emotion, and credibility can be achieved by applying some persuasive techniques of Cialdini's principles.

2.3   Persuasive design experience in multi cultures

To design persuasive website it is good to explore the relationship between cultural factors and persuasive design strategy. This is because some strategies are suitable in one culture but opposition is true in case of another culture. Hence, culture is an essential element to regard while choosing the appropriate design method for persuasive design platform to a particular culture. People's opinion differs in case of persuasive appeal as well as persuasive strategies [19, 20 ,21]. So applying inappropriate persuasive design strategy might be counter- productive. Therefore, the result not only could be refusal to accord to persuasive attempt but also could bring negative change in human behaviour [20, 22]. Culture plays a crucial role to shape human attitude and behaviour [23]. As a result, research is continuing on culture to develop culturally appropriate persuasive technology. Hofstede who is a cross cultural psychologist has researched the cultural differences and invented some cultural dimensions which are Collectivism, Individualism, Femininity, Masculinity, Long-term, Short-term orientation, Power-distance, and Uncertainty avoidance [24]. In 2000, Marcus and Gould's [25] interpreted the website design characteristics on the basis of Hofstede cultural dimensions. According to the interpretation the website design characteristics of High Power Distance will be tall hierarchy of accessing of information, strong Focus on expertise, authority, expert, Official stamp, or logo , frequent Emphasis on social and moral order. On the other hand, reverse characteristics are true when it comes to Low power Distance culture. In that way Marcus and Gould have showed all design characteristics of all Hofstede's cultural

dimension and how websites design differs from culture to culture. Furthermore, research have showed that among the five cultural dimensions Individualism and Collectivism are more influential factor when it comes to global differences [24, 26, 27]. So now it is very important to know what is individualistic culture and what is collectivist culture. In individualistic culture there is a weak bond between individual and people who are expected to take care themselves and their immediate families. Moreover, in Individualist culture people emphasize on personal achievements rather than group goals. On the other hand, in Collectivist culture from the beginning of birth people are strongly attached in group. People living in collectivist culture emphasize on family and group work goals instead of personal achievements. In Website design characteristics according to Marcus and Gould's [25] in Individualistic culture and Collectivist culture the personal achievement will be maximized and personal achievement will be underplayed respectively.

According to Hofstade cultural model European countries, for example, Finland, Sweden etc are Individualistic country whose ranking are 63 and 69 respectively [28]. However, Asian countries like China, Pakistan etc are Collectivist country where Individualistic values are 20 and 14 respectively. Marcus and Gould's research has analyzed how this Individualism and Collectivism are applied in web design. Here are some examples of Individualism and Collectivism. "Lvmama.com" [29] is a one popular traveling website in China and the official page of that website has been designed following Collectivist characteristics. It is clearly visible that home page has been designed with group picture of travelers instead of designing the website with single picture of travelers that is the one sign of Collectivist culture Figure 3. Another indication sign of localizing website is using local language. By using local language could also promote persuasion among the

travelers.

Figure 3. *Traveling website Lvmama.com [29]*

European countries are individualistic country. As those countries are individualistic culture so it is supposed to get the individualistic features on the website design. For example, the individual pictures instead of group pictures of travelers are supposed to get the in website design according to Hofstede model. When we have explored one traveling websites in Sweden named "visitsweden.com" [30]. In their Home page we have seen individual picture of traveler with strong desire attitude to achieve something. So expected features of individualistic country are found Figure 4.
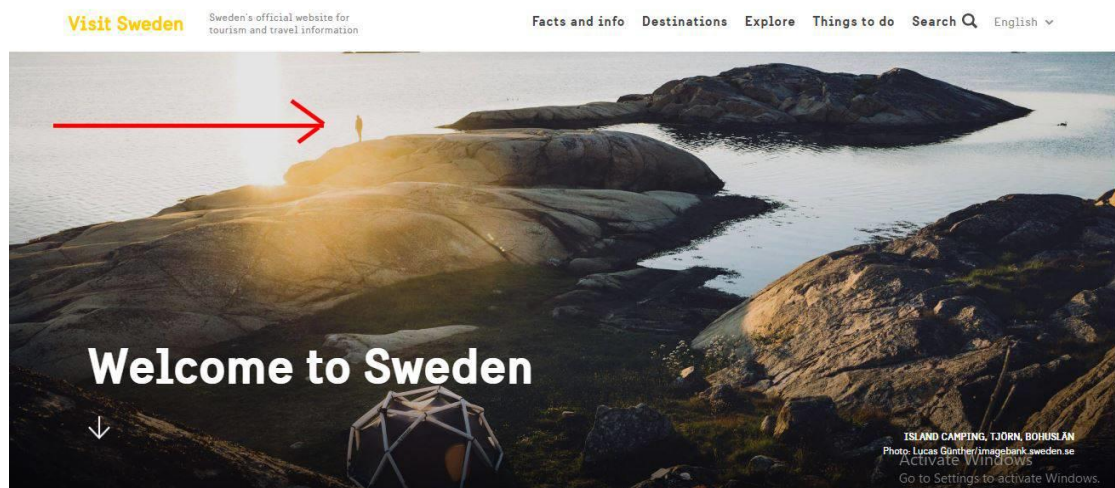
Figure 4. *Traveling web site visitsweden.com [30]*

Another cross culture researcher Edward Twitchell Hall has introduced another opinion about culture that is High-context culture and Low-context culture. One study [31] has showed that to design a persuasive website for High context culture and Low context culture have the following distinction .

High Context – Local navigational system is used, firm liking of visual aesthetics which is used as cultural symbol.

However, In Low Context culture following design characteristics are usually visible in culturally designed persuasive platform which are Global and local navigational system, functions in navigation are kept alphabetically, culture marker is structured and logical page layout.

2.4 Analysis of persuasive techniques implmented in tourism websites

For designing a persuasive website different methods and persuasive techniques are present which we have discussed in chapter [2.2]. Among all of these approaches persuasive techniques of Cialdini principles and PSD model are popular to develop persuasive website. Cialdini's six principles techniques are also called visual element of the persuasive website. The authors in [32] have implemented Cialdini's persuasive techniques to design a persuasive tourism website. Moreover, the researchers in [33] have also showed that how effective the Cialdini's principles are in case of persuasive design. In this study [33] the authors have designed two websites one is normally built and another is built by using the Cialdini's principles to get to know the differences between these two but all other things in both web pages remained the same. After the judgment from the users the authors have found that website designed with Cialdini's principles is more persuasive to the users than normally built website. How Cialdini's principles have been implemented there [14] to design persuasive website are listed on Table 2.

Table 2. *Implementation of Cialdini's persuasive techniques in tourism website*

Cialdini's persuasive techniques	Implemented in website
Reciprocity	Implemented as " related search results" in webpage
Commitment	Implemented as "search option" in everypage

Liking	Implemented as "images of tourists" in webpage
Social proof	Implemented as "travelers comments" in webpage
Authority	Implemented as" picture of celebrities" as brand ambassadors
Scarcity	Implemented as "discounted price" in webpage

Moreover, in [32] the authors also have analyzed two more popular traveling websites which are TripAdvisor and Yahoo! Travel and showed that how Cialdini's six principles have been used to make those persuasive to the users. In addition, the authors have also analyzed Cialdini's persuasive techniques used in profit –driven websites which are Travelocity TM Australia and Expedia. So it indicates that Cialdini's six persuasive features are not only used in tourism websites but also used in other websites to make them persuasive.

Along with Cialdini's persuasive techniques We have also explored how 28 persuasive techniques of PSD model are implemented in tourism websites. The authors in [34] have showed the implementation of persuasive features from PSD model. Not all of these twenty eight principles of PSD model are equally important. After reviewing of fifty-one scientific papers by Torning & Oinas-Kukkonen, 2009 they have showed the importance-ranking of twenty- eight design principles [35]. These persuasive features have been ranked by reviewing the scientific journals. So after analyzing some traveling websites which are Costcotravel.com, dargal.com we have found that the designer did not use all persuasive techniques from PSD model. Our findings suggest that they have combined techniques from PSD and Cialdin. For example, they have implemented some persuasive techniques from Cialdini's six principles and some techniques from PSD model. Now how these persuasive techniques have been used in websites are listed in Table 2. To exemplify, in Costcotravel.com we have found "Featured deal" function resembles "Reciprocity" persuasive technique of Cialdini's six principles. Moreover, we also have seen that they have used the "Share" function to share traveler's traveling experience with authority and others that resembles "social facilitation" technique of PSD and social proof of Cialdini's six principles. In Costcotravel.com website the developers have used some marvelous images of destination places which belong to "Liking"

features of Cialdini's principles and PSD model. When it comes to "dargal.com" we have seen that persuasive technique "Reciprocity" is offered under the banner of "Today's Top Deals!". How persuasive features implemented in both traveling websites are given in Table 3.

Table 3.   *Implemented of persuasive techniques from PSD and Cialdini's principles*

Websites	Persuasive Feature from model/framework	Web elements Implemented through persuasive features in website	Match with Cialdini's feature(CP)	Match with PSD feature	Match with both
Costcotravel. com	Reciprocity(CP) Reduction(PSD)	Featured Travel	Yes	Yes	Yes
Costcotravel. com	Social facilitation(PSD) Social proof(CP)	share	Yes	Yes	Yes
Costcotravel. com	Liking (PSD, CP)	Images of destination place	Yes	Yes	Yes
Costcotravel. com	Social role	Help center	No	Yes	No
Costcotravel. com	Trustworthiness,real-world feel, verifiability (PSD) Authority (CP)	About us	Yes	Yes	Yes
dargal.com	Reciprocity	"Today's Top Deals!"	Yes	No	No

2.5 Importance of content in persuasive tourism website

Content is usually not a persuasive feature/technique but plays an important role to design a persuasive website. By supplying the relevant content to the users is not only helping users to meet their needs but also influence them. Let's define what is content. Content is text or multimedia which are audio, video, and image. The authors in [32] have defined the content as information which is delivered by the website to the users. Moreover, the authors have also showed that in persuasive website web elements (contents, button, link etc) are implemented through persuasive techniques/features. Persuasive features/techniques are used to visualize the web elements in website. We have discussed these persuasive techniques and persuasive method in chapter [2.2]. Psychologist B.J Fogg upholds the importance of content in his book named "Using Computers to Influence What We Think and Do" [36]. Throughout the book the author has described the importance of quality content. However, in design practice content is thought to be the responsibility of others not designers. Ignoring the importance of content keeping it out of design steps which are planning, development, creation and evaluation [18]. The serious problem occurs when designers think others are responsible to take care of content and this thinking results in delay, or even failure/redesign the website. To design a persuasive website user's ability to create content on the website should be stopped [37]. The underestimate of importance to content might have negative influence on users [38]. So content has an impact on influencing human mind. Moreover, The authors in [14] have showed that content is motivating factor to design a persuasive website. However, excess information on the website gets users confused. The authors in [39] have showed that users want to get information from tourism website about six fields which are eating, accommodation, traveling, wandering, relaxation and shopping. Another study [40] has showed that users want to get information about travel, travel cost, transport, accommodation, food, discount and emergency contact. Both studies [39, 40] have come up with these necessary fields based on user study. So we can conclude that when designing the persuasive website for near home tourism it is important to involve the users to get to know their needs.

2.6 Summary

We have discussed the different persuasive approaches and also have showed how persuasive techniques are implemented in tourism websites to make them persuasive. To design persuasive platform cultural factors are important to consider like language, style of navigation bar, writing styles(Arabic language is set in writing from right to left)

etc. Content of website is also important to design a persuasive website as it influences human mind. However, We will use Fogg eight steps method [12] to design persuasive platform. This is because users goals and objectives are focus point in persuasive website [41], so in Fogg eight steps method users are involved. Additionally, Ries [42] has stated that in development process going backward is essential for continuous learning and it is also natural process of web application. In Fogg eight step method this iterative process is present as well. The more reasons are in chapter [2.2.3]. By following this eight steps method along with user study we will design a persuasive platform for Near Home Tourism. From the user study we will find out user's requirements for our persuasive design website of Near Home Tourism. After that, we will design a high fidelity prototype prototype where web elements will be implemented through the persuasive features. After evaluation of our design we will propose a final persuasive design website for near home tourism.

2.7   Ethical issues

Persuasive platform or persuasive technology may persuade the users to behave unethically. These unethical persuasion could be incidental, accidental or even planned. System designers are responsible for this result. Many researchers Berdichevsky & Neuenschwander in 1999, and Smids in 2012 [43, 44] have concord to one statement that ethical issues need to be solved by the designers when designing the persuasive platform. However, there is no a concrete frame work to address this issue but ethical approache frame work proposes three steps which are Guideline, Stakeholder analysis and users involvement. In addition, Design with Intent [DWI] frame work assists designers to understand user's behavior at early phase of design.

3. RESEARCH PROCESS AND METHOD

The below Figure 5 describes the overall step by step procedures of our research along with process proposed by Fogg for designing a persuasive platform. Now we have described every section elaborately one by one below.
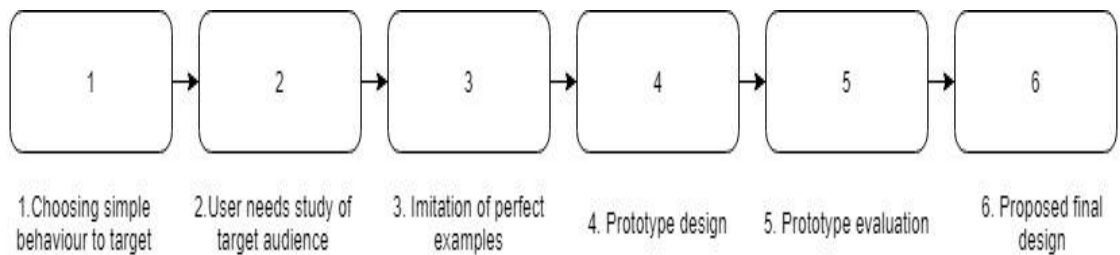
Figure 5. Research process

3.1 Choosing simple behaviour to target

Lets start with giving an example, suppose Government wants people to give up smoking but this is not easy task for the government and even government does not know how to achieve this target. So to achieve this target at first government could make people aware about harmful effect of smoking through advertisements in television and then Government can impose laws if necessary. In that way Government can achieve this target. Like the same way our motive is to design a persuasive website for near home tourism but this is not an easy task. To make it simple at first we have reviewed scientific papers in chapter [2] to find out what kinds of work has been done so far and what is the procedure to design a persuasive website. Designing a persuasive website is difficult task so it requires step by step approach to achieve target. By studying these papers we have been familiar several methods which are suitable for designing a persuasive platform. And among all these methods for our research we have chosen Fogg eight steps design process [12].The reasons about choosing Fogg eight steps design process have been discussed in chapter [2.2.3]. On the other hand, Fogg behavior model is not a method it describes some persuasive techniques. To achieve our big goal on next step we will conduct interviews with target audience to find out their requirements and obstacles regarding a persuasive web service for near home tourism.

3.2   User needs study of target audience

3.2.1   Target audience and channel

Target audience is a group of people who might have different opinions and desires for product. So it is crucial to fix the target group and to find out their requirements for the product. Our target audience is the university students who live in Tampere and are from different nationalities. This is because students travel a lot between inside and outside country so we could hope that from them we may get the most required things for a traveling platform. Both studies [39, 40] involved users to design a persuasive website. Furthermore, users goals and objectives are important things to design a persuasive website [41]. So involving users is important to design a persuasive website. Due to scientific advancement many technological devices like laptops, tablets, mobile phones are very near of hand and which are used for doing many activities like travel booking, banking activities etc. So our target channel is technological devices like laptops, tablets, mobile phones. So we have planned to design a persuasive web service for near home tourism that will be accessible from all these devices. As our web service for near home tourism will be responsive so it could be accessible through every device without facing problem.

3.2.2   Interview study

The research has adopted qualitative approach for the study. The purpose of choosing qualitative research is to obtain in depth information for our thesis. Several researchers vary about the definition of qualitative research, but they all are concord about the purpose of qualitative research. According to Cassell, Buehring, Symon, &Johnson Qualitative research is multi-discipline of collecting a non-numeric data [45]. Fisher and Saxton describe qualitative research as an effect approach to understand experiences from subject's perspective adopting to tools such as, the descriptive approach, interpretive approach and reflective approach [46]. Moreover, according to Carson, Glmore, &Gronhaug the effective qualitative analysis can be also conducted by engaging of the focus groups, interviews, observation and substantial theories [47]. So we have decided to conduct the interview and we have carried out interview to collect the data. Our target group is the students who live in Tampere, Finland. So to recruit participants we have emphasized on recruiting participants from different countries and experienced people with travelings. This is because different countries' people have different traveling experiences and that could help us to find the obstacles of traveling. The total number of participants is eight and who are from mostly Tampere university students. Among the total participants, one is from Spain, two are from Finland, one from Nigeria and the rest

of the participants are from Bangladesh. The interviews were conducted from whole month of December in 2019 to until middle of January 2020. The interviews were taken at Tampere university campus. The age group of all participants is between 25 and 30 and education level is between honors and masters. We have conducted interview with audio recordings and average length of interview is approximately 11 minutes per participant. Before starting interview we have given them a consent form [APPENDIX C]. After reading it every participant has signed the form and then we have started conducting interview.

Three types of Interviews are appropriate in qualitative research which are unstructured interviews, Semi structured interviews and Structured interviews. We have decided to take structured interview for our research. This is because it sticks to interview code and provides guide to researchers. It is more or less rigid interview style like questions are asked which are on the interview protocol. Hence, if provides in depth exploration about topic when participants are answering the questions. As research workers have complete set of interview questions so this helps to aim for specific goals which researchers are seeking. Through our interview questions [Table 4] we have tried to figure out how we could persuade the travelers towards near home tourism and we also have tried to get to know what kinds of problems they usually face when they go for traveling. We also have wanted to get to know participant's opinion about harmful effect of Carbon dioxide on environment which is causing for the international traveling or long distance traveling. We also have designed interview questions to point out their requirements for designing a persuasive platform for near home tourism. After analyzing the interview data we have reflected their requirements in our design solution.

Table 4. *Participant's interview questions regarding persuasive design for near home tourism*

1. Do you like traveling? Have you ever been to any tourist place inside your country?
2. Why didn't you go?
3. How do you arrange your trip inside your country, for example, selecting destination place, managing hotel, booking tickets etc.? Is it done by yourself through online or done by through a travel agency? If manage by an agency then why?
4. When you want to choose your traveling place inside your country and to book it through online? What kind of problems do you usually face?

5. Do you have any suggestions how to overcome these problems?
6. What do you want to experience in your destination place?
7. How do you choose one particular traveling website over other traveling websites to select your destination place and to book it?
8. How do you believe that this site is secure and trust worthy for choosing traveling place and for booking it?
9. According to your opinion, what kind of service do you expect to get from a traveling website?
10 For domestic traveling, you want to book transportation ticket (train, bus, plane) from traveling website to go to your traveling spot and when booking if you see that every transportation shows the total amount of Carbon dioxide (CO_2) emission to reach your destination so….   - What would you think of this? Would you care? According to you how travelers in general would react to seeing the CO_2 emissions?   - Would it have an influence on your motivation to choose a transportation option? What kind of an influence?
11 if you see the one "feature" in traveling website from which you can search the similar tourist spots, for example, one tourist spot is located inside your country (called domestic tourist spot) and exactly the same looking tourist spot is located in another country (international tourist spot). So…   - What do you think of this? Will it motivate travelers to select domestic tourist spot instead of international tourist spot?

3.2.3　Data analysis and findings

This chapter includes the data analysis and findings from the interview of our participants and we have conducted that interview at Tampere University, Hervanta, Finland. We have carried out interview and recorded it. From recorded interview we have transcribed it into a document. We have followed the thematic analysis to analyze our interview data. The details about thematic analysis have described later in chapter [6.2.1].

Choosing tourist spots and facing obstacles

We have selected eight participants from different countries to get data about user's requirements for persuasive design. All our participants said that they manage all kinds of traveling activities by themselves and when they do their activities through online most of the travelers face problems of lack of information about traveling like how to buy tickets, security issue about hotels and destination place, and free space of hotels. Out of eight participants only two participants, participant number six (M, 30 years) and seven (M, 29 years) do not face any problem when managing their travel activities like selecting spots through online. Participant number one(M, 31years) faces problem booking hotels and managing bus tickets. Participant number two (M, 26 years) and four (M, 23 years) have said that they have faced problem of finding free space of hotel. Participant number five (M, 28 years) has said that he does not find information about security issue of hotels and destination place and participant number eight (M, 28 years) said that he has faced problem of selecting hotels and destination place. So to overcome their problems participants have wanted an ideal platform from which they could do their all kinds of traveling activities and wanted to be listed a long list of secured hotels. In response to choose destination place everybody from participant number one (M, 31 years) to participant number eight (M, 28 years) wants to get there good food, accommodation, natural beauty, amusement park except participant number three(M, 24). Participant number four (M, 23 years) is also interested in hiking and fishing.

Security issue about persuasive traveling web service

When we have asked about choosing one particular traveling website over others everyone responses to which offers cheap rate and ensures security and only one participant number three (M, 24 years) has said that he selects particular website after seeing the TV advertisement. Most interesting thing is that when we have wanted to know how they believe that this site is secure and everybody has agreed that they see the user's rating about it and look contact details of the site except participant number three (M, 24 years) because he selects websites by watching TV advertisements.

User's expectation for a traveling web service

For an ideal traveling website everybody has mentioned that they need such a web service from which they could do all kinds of traveling activities like booking hotels, managing tickets, comparing price, knowing about restaurants, knowing car rent, knowing tourist's review of hotels and destinations, knowing popular activities of destination place, and wanting to have organized information. According to participant

number five (M, 28 years) he has said that *"I always compare between hotels.com and booking.com for getting the lowest price, on the basis of the lowest price I select that one".*

Making aware and motivating travelers

To raise the awareness about harmful effect of carbon dioxide caused due to international tourism and to motivate travelers indirectly towards near home tourism we have asked them "do they choose the transports that emit less carbon dioxide to go to their tourist spot?" out of eight participants four have given positive response and said that as it is inside the country so time is not big factor here and only three participants, participants number four (M, 23 years), participant number six (M, 30 years), and participant number three (M, 24 years) have remained neutral. And participant number two (M, 26 years) has been positive in general and his statement is *"I think that is a good thing that transportation show carbon dioxide emission but for me I would choose cheap and fasted one".* To motivate the travelers towards near home tourism we have planned to present our domestic tourist spots which are more or less similar looking of international famous tourist spots but tourists are not well familiar of these places. As a result, we have wanted to get user's comments about one feature which is "similar place" from which travelers will get to know information about the domestic tourist spots which are more or less similar looking to international famous tourist spot**.** In response to this feature five participants out of eight have directly cited that they will choose the domestic tourist spot instead of international tourist spot. And only one participant, participant number one (M, 31 years) has said that as this place inside in my country, so I could go whenever I want, but this will not be possible for international tourist spot. Participant number three (M, 24 years) has adverted that for single trip it would motivate travelers. His statement is *"ok, I think it would do if you see something similar it would motivate people but also some people don't travel to see one particular thing so but I would say for single trip it would motivate travelers".* Regarding this issue participant number four(M, 23 years) has been positive in general. He specified *" if the two places similar looking then price is important, so I would choose the cheaper one ".*

3.2.4   Summary of the findings

To sum up, So from the analysis of interview data we have seen that participants have described that they suffer from lack of information about security issue of hotels and destination. They also face problem managing tickets, booking hotels, finding destination place. Moreover, for choosing destination place they want to see natural beauty, amusement park, hiking and fishing. Their expectation from near home tourism website

to do all traveling activities from one platform like managing hotels, buying tickets , comparing price, knowing tourist review about destination, knowing popular activities of destination place, and renting cars. Moreover, about security issue of destination place and website they want to see user's feed back and look contact detail of website authority.To motivate travelers we proposed one feature "similar place" to have in website and 5 out of 8 participants directly mentioned that it is motivating feature and only one participant said that it is not so convincing and others in general have said it is motivating feature. About showing carbon dioxide emission four participants have mentioned it is good idea and three participants have remained neutral and one has been positive in general.

3.3 Imitation of perfect examples

From the interview of our target group and their back ground information we have known that the participants use booking.com, hotel.com, airbnb.com, and tripadvisior.com for managing their travel activities. So we have analyzed these traveling web service to find out how the persuasive features are implemented there. The authors in [32] have showed that how Cialdini's principles are implemented in tourism websites. According to Pelaprat and Brown, "Reciprocity" can be designed to offer something to the users in return users will give their time so in traveling websites this feature has been implemented by "search" option [48]. This is because when users search their destination by using search option a lot of destination places are suggested from where by spending time users might choose their destination. Furthermore, in [34] the authors have showed that how persuasive features of PSD model are implemented in websites. After analyzing tripadvisior.com, booking.com, and airbnb.com we have figured out how these persuasive techniques are implemented. The below Table 5 has given the more details about it.

Table 5. *Implemented persuasive features in tourism websites*

Websites	Web elements implemented through persuasive features	Match with Cialdini's persuasive feature/technique	Match with PSD feature/technique	Match with both
	Recommended for you	Reciprocity	No	No

tripAdvisor.com	Review	Social proof	Trustworthiness	Yes
	Images of destination place	Liking	Liking	Yes
	Travel forum	Authority	Social learning Social facilitation	Yes
	Travel notice	No	Expertise	No
Booking.com	10 properties found	Reciprocity	No	No
	Review	Social proof	Trustworthiness	Yes
	Image of found properties	Liking	Liking	Yes
	Only 5 like this left on our site	Scarcity	No	No
Airbnb.com	10 place to stay	Reciprocity	No	No
	user rating	Social proof	Trustworthiness	Yes
	image of places	Liking	Liking	Yes

3.4   Prototype design

The details of prototype design have been discussed below in chapter 4. However, after analyzing the interview data we have decided to go for prototype design for near home tourism design. Our main goal is to propose a persuasive design for near home tourism. For this purpose we have designed prototype based on user's requirements chapter [3.2.3] for near home tourism. We have used prototyping tools which are Balsamic mock up and Invision for designing prototype and make it function able like a real software. This platform (website) will have several functions which are Hotels, Restaurants, Car rentals, Package, Transportation, Contact/About us. By clicking every function a new page will open from which users could perform their desired task. For example, when users click " Hotels " then users could see recommended list of all hotels close to their tourist spot. From our user study we know that as destination places participants want to see natural beauty, amusement park, fishing, hiking. But these places may belong to or may not belong to near home. As our aim to persuade travelers towards near home tourist places so at first we will suggest tourist spot based on the user's present location. After that if they do not like the suggested destination places then they could search destination from search option.

3.5   Prototype evaluation

After designing the prototype we have gone through the evaluation process. We have conducted the evaluation with four of our old participants and four of the new participants to justify whether our persuasive design for near home tourism has reflected their desired things or not. Data was collected with feedback questionnaire and post evaluation open-ended questions to get their feedback about our designed prototype. Based on their comments if necessary we will go through the redesign phase again and prototype will be updated accordingly. It will be an iterative process until meeting the user's expectation about the design. The more about user testing or prototype evaluation has been discussed details in chapter 5.

3.6   Proposed final design

After getting the user's feedback about our designed prototype we could get to know what are the lackings of our design. After that based on users' feedback if necessary we will make the correction of present prototype for near home tourism then we will propose it as a final design. We have discussed details about what are the users' propositions regarding our demonstrated prototype. The details are in chapter [7.6].

4. PROTOTYPE DESIGN

After the analysis of the users' data and finding out the users' requirements the design process is started. As it is a web service, so we try to make our design like a real web service that's why we use Balsamic mock [49] up and Invision [50] to make our prototype clickable. Here we have described characterization of prototype and design details.

4.1 Characterization of prototype

Our aim to design a persuasive web service for near home tourism. When users experience a product they usually experience Pragmatic and Hedonic quality of the product. Our designed website has also these two traits which are Pragmatic and Hedonic qualities.

Pragmatic quality

Pragmatic quality means easiness of use. How easily the users can perform their task without facing any difficulties. Moreover, Pragmatic quality also integrates usefulness. If the platform is easy to use but is not useful, so we could not say it fulfills the Pragmatic quality of the user's experience. For Pragmatic quality we have designed a conventional prototype that is helpful and easy to use for the users.

Hedonic

On the other hand, Hedonic quality is all about creating satisfying and enjoying. Hedonic quality also depends on visual aesthetic of the design. We have decided to measure the Hedonic quality of platform. For example, we have used different colors for different pages for conventional design web service to measure Hedonic quality that will give a pleasure look of prototype and so that the users could understand that which is pleasant design and how they fell about it.

4.2 Description of design

After analyzing the user's data and imitating some popular traveling websites like Airbnb.com, booking.com, Tripadvisor.com, hotels.com we have designed our prototype. Through our website users can do their all traveling related activities what they need. In Figure 7 it is the home page of our prototype. In home page users can see some functionalities in the navigation bar from which users can do whatever they want.
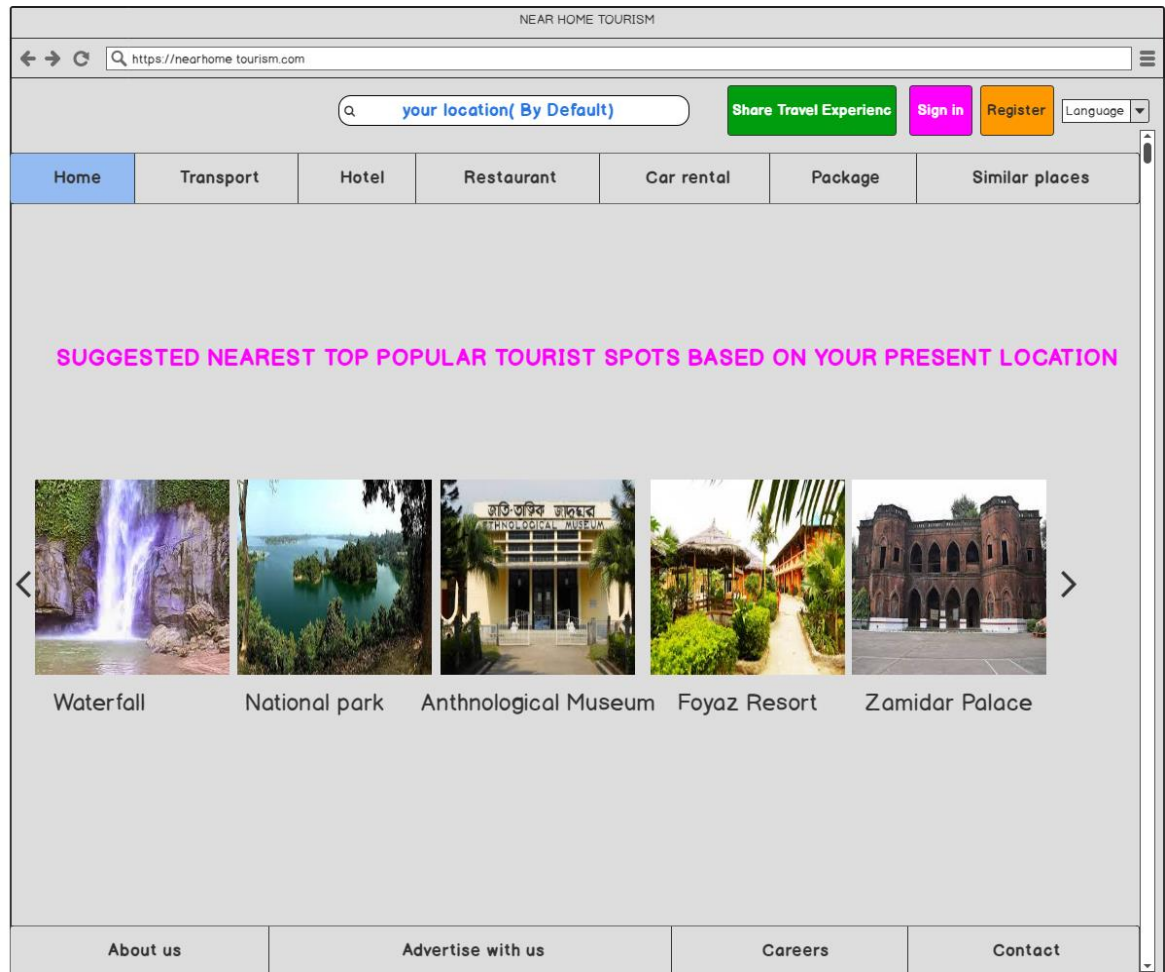
Figure 6. *Home page of persuasive platform*

Near home tourist places will be suggested based on the current location of the users. All tourist places will be suggested under "SUGGESTED TOP POPULAR TOURIST SPOTS BASED ON YOUR CURRENT LOCATION". As under in one option all tourist spots/places are appeared based on current location so users do not have to search tourist places. As a result, travelers' activity has become easy which belongs to persuasive feature "Reduction" of PSD model. Moreover, if users are not interested in these suggested places then they could search places from search option. Their search result will also be appeared under "SUGGESTED TOP POPULAR TOURIST SPOTS BASED ON YOUR CURRENT LOCATION". From all of these suggested places travelers could choose one or more which could be Nature, Sea beach, Amusement park, Resorts [Figure 7]. In our design the "SUGGESTED TOP POPULAR TOURIST SPOTS BASED ON YOUR CURRENT LOCATION" function resembles to the persuasive features 'Reciprocity" of Cialdini's six principles. Moreover, from the interview study chapter [3.2.3] *"Security issue about persuasive traveling web service "* we have seen that users trust the website which has the contact details and user's rating/comment. In our

design from "Contact" function located in header section users can see the details of authority and from "Share travel Experience" function users can share their travel experience about destination places with others and also can write comment about our website service. This function belongs to Social Support Category of PSD model. Furthermore, from our designed website users can choose their preferred language from "Language option" located right hand corner of the design Figure 7 above.

After choosing one destination place, suppose, "waterfall" (Figure 7) then users can see all kinds of information about that place from the functions which are "Description", "Popular activities", "Important information"(about security and weather), and "Traveler's comments and ratings" in our design. See the below Figure 8.
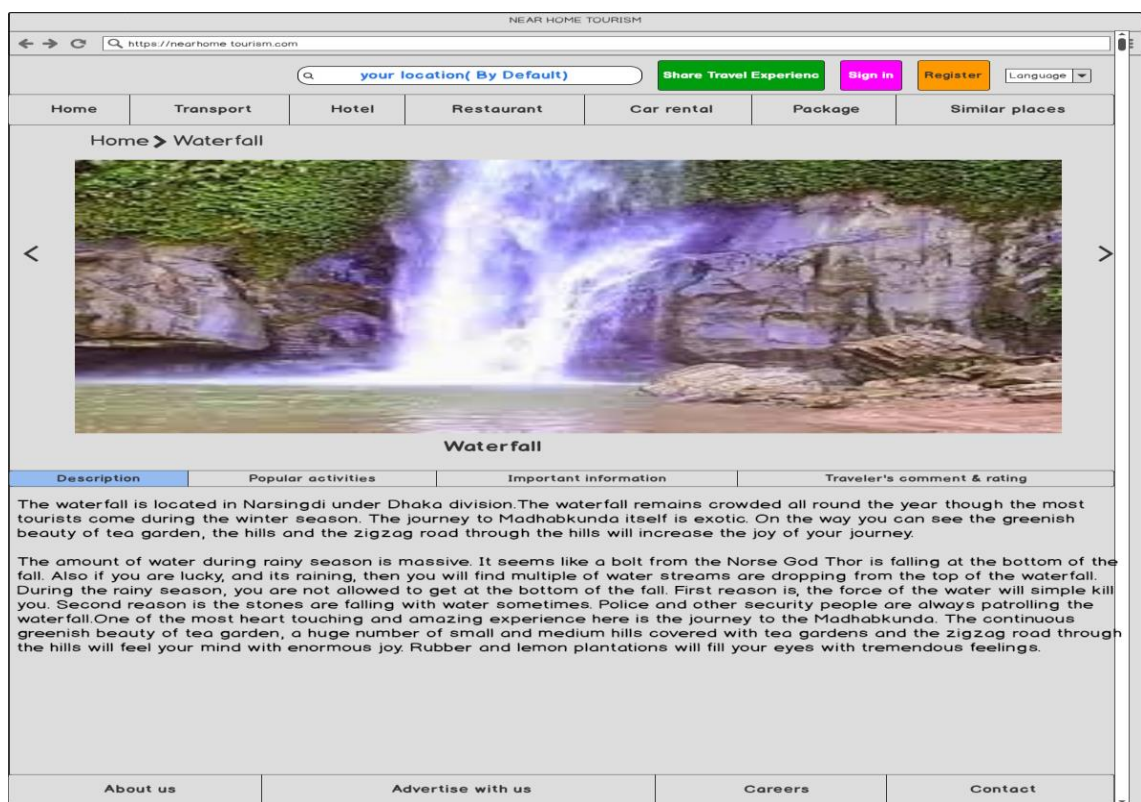
Figure 7. one tourist sport selected (waterfall)

From our interview study chapter [3.2.3] "***Choosing tourist spots and facing obstacles"*** we have noticed that participant number three (M, 24) faced problem regarding information of destination place, so from our design users could get information about destination place. For instance, from "Popular activities" option travelers can get to know about what kind of popular activities are usually done by travelers there and this option belongs to persuasive feature "Liking" of Cialdinis six principles. Moreover, travelers also could get to know the information about the security, and weather update

of that place from "Important information" function. Furthermore, travelers could become acquainted with comments written by previous tourists about that place from "Travelers' rating and comment" function. This function resembles to the persuasive feature of "Social proof" of Cialdini's six principles. After checking the all kind of information about "waterfall" if users decide that they will go to see the "waterfall" then they have two options either they could go there by booking tourist packages from "Package" option or they could go there by managing tickets and hotels separately.

However, if they are not interested on any kind of package tour then they could book hotels to stay there from "Hotel" option and could buy transportation tickets from the "Transport" option to go to destination place(waterfall). From "Hotel" option users can find all kinds of hotels which are only located in their selected destination and from "Filter" function they could customize their preferences regarding price, hotel quality etc. From "Transport" function the users can do their all kinds of transportational activities like booking tickets, comparing price. See the Figure 9 below.

Figure 8. transport choosing

Users can choose any mood of transportation like bus, train and plane from drop down menu and they can also see the total amount of carbon dioxide emission for their journey. To see the total amount of carbon dioxide emission they have to select the radio button.

We could say that carbon dioxide emission option could promote awareness among the travelers as a result they might choose the transport that emits less amount of carbon dioxide. This is because from user study we have noticed that out of eight participants four participants have given direct positive rating for calculation of carbon dioxide emission. However, after choosing the mode of transportation and putting traveling date users could see their total journey cost. From the interview study chapter [3.2.3] "***User's expectation for a traveling web service***" we have seen that users want to compare the price regarding hotels and transports. They could also compare the cost to see which is cheaper our offered price or price offered by other websites. For example, from present location to destination (waterfall) our site is showing the price is 14 [Figure 9] dollars by bus so if the users want to compare to see what other sites are offering for the same destination they could check it from our site as well. If they click "shohoz" it will carry them to that site to see the offered price there for the same location. Moreover, if the user select all it will display all prices offered by different websites.

Another function in our design is "Similar places". This function suggests similar places located inside and outside of the country. From our interview study chapter [3.2.3] "***Making aware and motivating travelers***" we have seen that out of eight participants five participants have directly rated this function as positive and said that they will choose domestic place instead of international place. As this function offers similar places, that resembles to persuasive techniques "Reciprocity", "Suggestion" of Cialdinis six principles and PSD model. Below Figure 10 is our design.
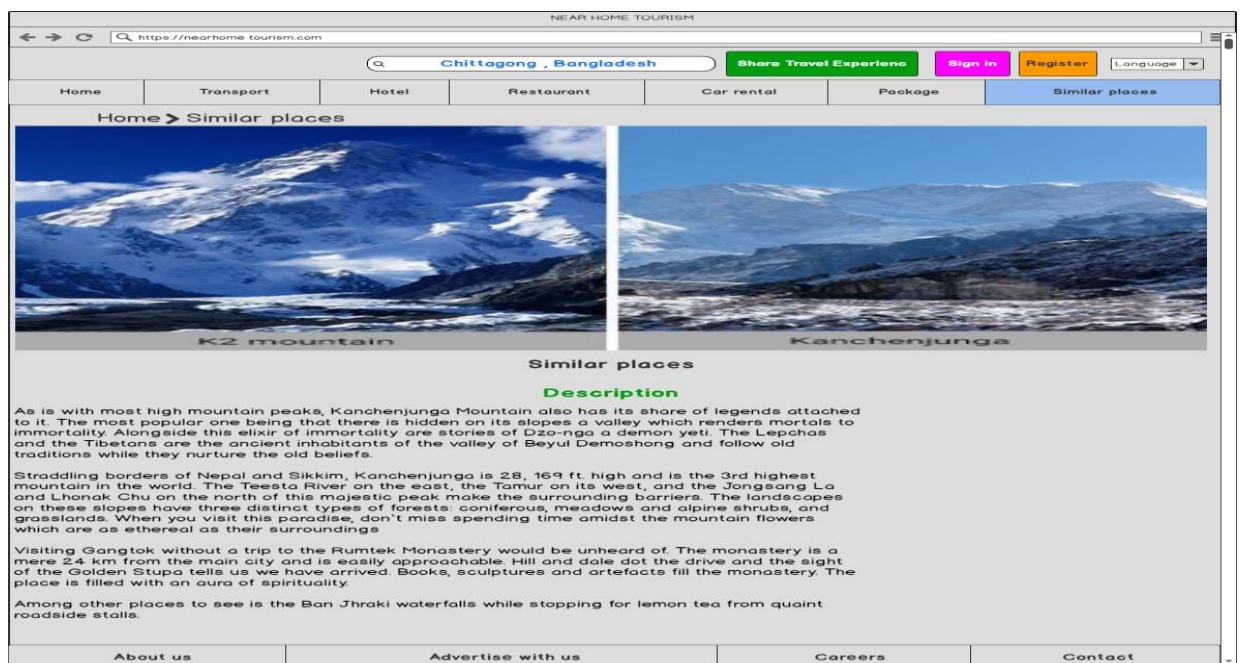
Figure 9. *Similar place suggesting*

From our interview study chapter [3.2.3] "***Choosing tourist spots and facing obstacles***" we have known that four participants out of eight have faced problem regarding hotels, So in our design we suggest as many hotels as possible. "user-rating" represented by star symbol in design helps users to guess the quality about the hotels which creates trust/credibility among users about service quality of hotel. We know that credibility can be implemented through "social proof" of Cialdini's persuasive feature chapter [2.2.5] and in our design "user-rating" function resembles to "Social proof" persuasive technique. In addition, we have implemented Cialdini's persuasive technique "Scarcity" through **"we have 4 left in the price $33"** and this function also resembles to persuasive feature "Reward" of PSD. Furthermore, from the "Filter" option users can select their rage of price, rating of hotel, services. This "Filter" option belongs to "Personalization" persuasive feature of PSD model.
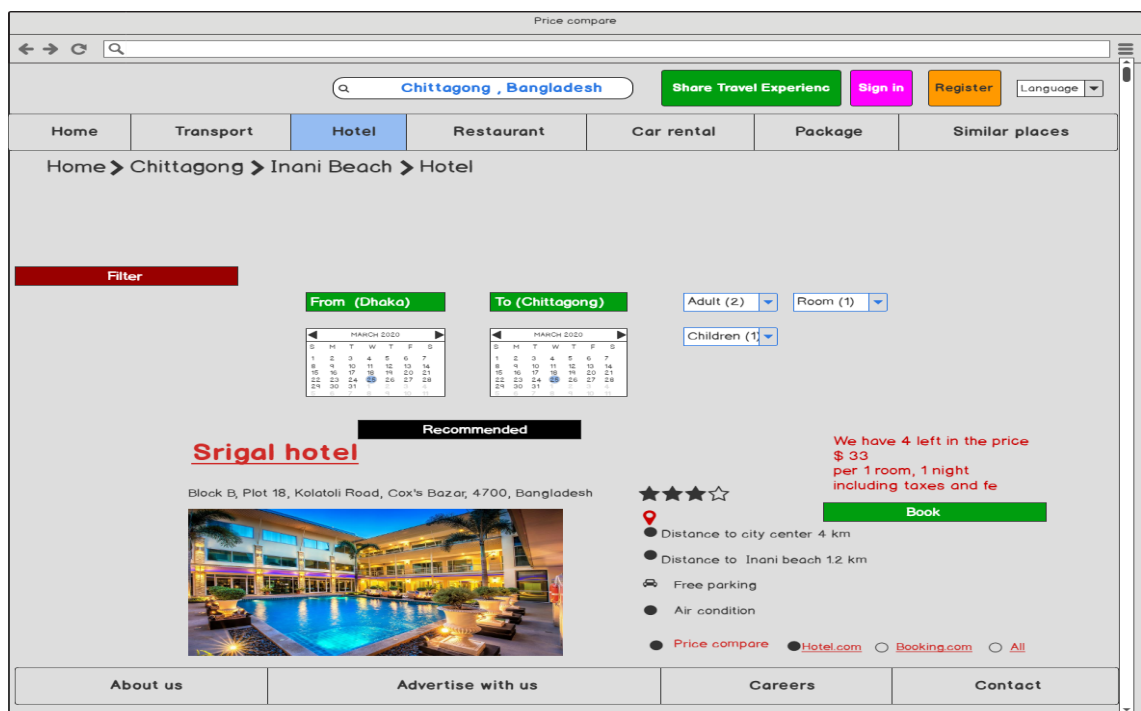
Figure 10.   *Secured list of suggested hotels*

From the filter option users can personalize their demand. For instance, if users want to select mid-range price of hotel or want to filter the other facilities so they could do it. Furthermore, navigation bar is the same in all pages even after opening a new tab that resembles to persuasive feature "Consistency" of Cialdini's principles. However, how persuasive features/techniques implemented in our design are listed in below.

Table 6. *How persuasive techniques implemented in design*

Persuasive Featurs/techniques	Web elements Implemented through persuasive features/techniques in Near Home Tourism platform	Match with Cialdini's persuasive feature (CP)	Match with PSD feature	Match with both
Reciprocity (CP) Reduction/ Suggestion (PSD)	"Suggested popular tourist spot based on location"	Yes	Yes	Yes
Consistency(CP)	"Search option", "header & footer" , "navigation bar"	Yes	No	No
Social facilitation, (PSD)(social support category) Social proof (CP)	"Share travel experience"	Yes	Yes	Yes
Liking (PSD, CP)	"Popular activities"	Yes	Yes	Yes
Reciprocity (CP)	"package"	Yes	No	No
Trustworthiness, verifiability (PSD) Authority (CP)	"About us"	Yes	Yes	Yes

Social role (PSD)	"Contact"	No	Yes	No
Scarcity (CP) Reward (PSD)	"we have 4 left in $33"	Yes	Yes	Yes
Reciprocity (CP) Reduction/ Suggestion (PSD)	"similar places"	Yes	Yes	Yes
Personalization (PSD)(Primary task support category)	"Filter"	No	Yes	No
Consistency (CP)	"navigation bar"	Yes	No	No
Self monitoring (PSD)	"register"/ "sign up"	No	Yes	No
Remainder (PSD)	"Register"	No	Yes	No
Verifiability (PSD)	"price compare"	No	Yes	No
Praise (PSD)	"thanks for booking" (greating text)	No	Yes	No
Verifiability(PSD) Social proof(CP)	"User-rating" represented by star symbol in design	Yes	Yes	Yes

5.   PROTOTYPE EVALUATION

We have designed persuasive web service for near home tourism that is based on users requirements along with imitating of traveling services like Booking.com, hotels.com, Airbnb.com etc. We have designed the prototype of persuasive website to get the user's feedback about the design and its functionalities and according to feedback the design will be updated if necessary. Here, we have described user,s evaluation criteria of product and how we have conducted the users' evaluation to get the users' feedback. From their evaluation data if we see that the the product functionalities have met their expectation regarding managing all traveling activities of near home tourism then we go to finalize it otherwise we might go to iterative process to redesign it. Evaluation result has been discussed in chapter 6.

5.1   Users experience evaluation

How users evaluate a product during evaluation that is known from UX model like Component of User Experience (CUE) (Mahlke & Thuring,2007) model and Hassenzahl model [51]. According to UX model, user experience for evaluation usually consists of two qualities of a product which are Pragmatic and Hedonic. How different scholars have defined user experience in different ways is described below.

User Experience about evaluated product

User experience is s comprehensive concept that is reflected from user's perception about the product. Simply it means interaction between user and product. According to the ISO norms "person's perceptions and responses resulting from the use and/or Anticipated use of a product, system or service" [52]. Although user experience is an abstract thing but scholars have made user experience clear, measurable and understandable. According to Hassenzahl [51] users usually experience Pragmatic feature and Hedonic feature of a product. Pragmatic quality of a product helps the users to complete their task that means "do-goal". Mainly it focuses on the usability of the product. On the other hand, Hedonic quality emphasizes on happiness, enjoyment etc. simply Hedonics qualities motivates and stimulates the users and fulfills their "be-goals".

According to (Mahlke & Thuring,2007) user experienced is defined in different way in their Component of User Experience (CUE) model. According to them when users interact with the system in a context then users percept two product qualities these are instrumental product quality and non-instrumental product quality. The product qualities

instrumental and non-instrumental which are similar to the Pragmatic and Hedonic quality of Hassenzahl model. Here instrumental quality is controllability, effectiveness, and learn-ability. On the other hand, non-instrumental quality means visual appearance, identification etc. According to this model emotional reaction is influenced by these instrumental quality and non-instrumental quality. Finally, these instrumental, non-instrumental, and Emotional reaction determine the appraisal of the product.

5.2   Evaluation method

After designing prototype we have gone through the testing method by the users. This is because it ensures that whether the design has achieved the users' requirements or not. If not then we have gone through the redesign phase. During testing, we have designed feedback questionnaires in which questions have been designed based on Pragmatic and Hedonic quality so that users could let us to know about their Pragmatic experience and Hedonic experience. In the feedback questionnaire users fill/put tick mark on circle based on their user experience about our designed prototype. Our online questionnaires consist of User Experience Questionnaire (UEQ) and post evaluation open-ended questions which have been uploaded in [APPENDIX D] and [APPENDIX E] respectively. Post evaluation open-ended questions were designed to get to know users' judgement about our prototype and the details are found in chapter [6.2].

Participants and procedure

For the evaluation of our functional prototype we have sent them link of our prototype first to see its functionality. Moreover, we have designed online questionnaires where there are Consent form, some post evaluation open-ended questions, and User Experience Questionnaire(UEQ). In our evaluation group we have invited total eight participants among them three participants were new and five participants were old to whom we have conducted our user study. Among our five old participants (p1, p5, p6, p7,p8) who study in Tampere university and one participant (p8) study in University of vasa. On the other hand, among new participants one participant (p3) is from India who studys in Tampere university and rest of the participants are from Bangladesh who study in their country. All of the participants are known to us before and also connected with us via social network. After forming online questionnaires we have sent the link of it to our participants via email. Before sending the link of online questionnaires at first we have sent them the link of our functional prototype so that they can fill up the online questionnaires after evaluation our functional prototype. After the evaluation they filled up our online survey and answered post evaluation open-ended questions to let us know their feedback about the prototype.The details of participants are below.

Table 7. *Participant's details*

Participants Id	Age	Country
P1	31	Bangladesh
P2	29	Bangladesh
P3	32	India
P4	31	Bangladesh
P5	28	Bangladesh
P6	30	Bangladesh
P7	29	Bangladesh
P8	30	Nigeria

Evaluation measurement by User Experience Questionnaire (UEQ)

UEQ is developed by (Schrepp et.al, 2017) and whole form is uploaded in [APPENDIX D]. User Experience Questionnaire (UEQ) is conducted to get the feedback of Pragmatic and Hedonic quality of the product.

The goal of UEQ is to inspect user experience of the product with a benchmark quickly and directly. The questionnaire consists of 26 items which are grouped into 6 part, and each part consists of a pair of opposite words.

Attractiveness (6 items)

- Annoying / enjoyable
- Bad/ good
- Unlikable / pleasing
- Unpleasant / pleasant
- Unattractive / attractive
- Unfriendly / friendly

Efficiency (4 items)

- Slow/fast

- Inefficient / efficient

- Impractical / practical

- Cluttered/ organized

Perspicuity (4 items)

- Not understandable / understandable

- Difficult to learn/ easy to learn

- Complicated / easy

- Confusing/ clear

Dependability (4 items)

- Unpredictable / predictable

- Obstructive / supportive

- Not secure/ secure

- Does not meet expectations/ meets expectations

Stimulation (4 items)

- Inferior/ valuable

- Boring / exciting

- Not interesting / interesting

- Demotivating/ motivating

Novelty (4 items):

- Dull/ creative

- Conventional/ inventive

- Usual / leading edge

- Conservative / innovative

It measures the user experience of the product efficiently. It is one kind of likert scale whose range varies from -3 to +3 that indicates feedback of product from extremely bad to excellent respectively. Which things consist of Pragmatic quality and Hedonic quality in User Experience Questionnaire (UEQ) have been illustrated by below Figure 11.
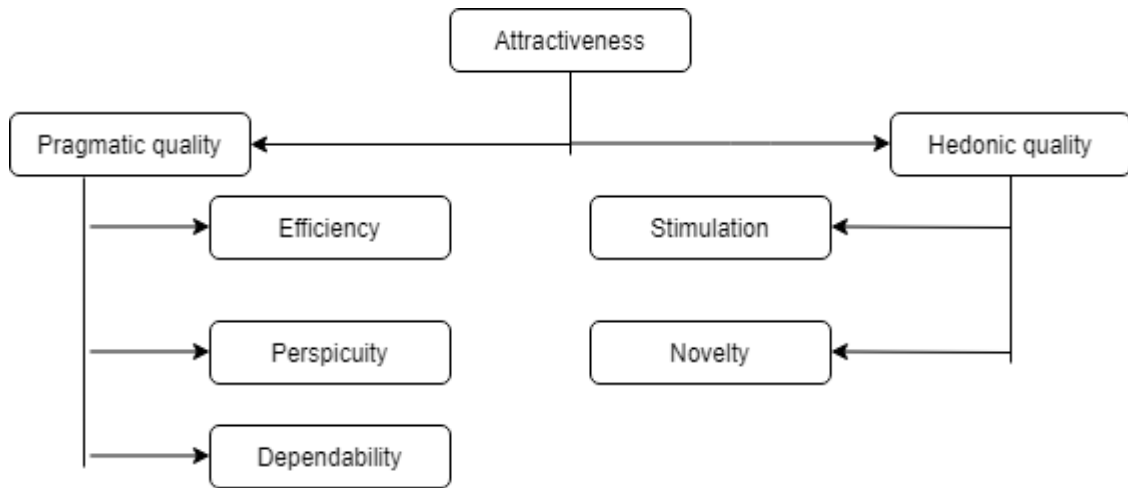
Figure 11. *Scale structure of UEQ*

Bench mark has been created after collecting all UEQ evaluations data [53]. The bench mark has been developed to judge the user experience quality of the evaluated product. Although it is an interesting scale to get the user's feedback it has limitations too. As the benchmark data set contains a limited number of evaluation result so it was decided to keep the feedback result into five categories**.** This has been illustrated below.

Excellent: The evaluated product is among the best 10% of results.

Good: 10% of the results in the benchmark are better than the evaluated product, 75% of the results are worse.

Above average: 25% of the results in the benchmark are better than the evaluated product, 50% of the results are worse.

Below average: 50% of the results in the benchmark are better than the evaluated product, 25% of the results are worse.

Bad: The evaluated product is among the worst 25% of results.

Table 8. *Here is the summery of the benchmark mean value of UEQ in a table [53]*

	Attractive-ness	Efficiency	perspicuity	dependa-bility	stimula-tion	originality
Excel-lent	≥ 1.75	≥ 1.78	≥ 1.9	≥ 1.65	≥ 1.55	≥ 1.4
Good	≥ 1.52 < 1.75	≥ 1.47 < 1.78	≥ 1.56 < 1.9	≥ 1.48 < 1.65	≥ 1.31 < 1.55	≥ 1.05 < 1.4

|					
Above average	≥ 1.17 < 1.52	≥ 0.98 < 1.47	≥ 1.08 < 1.56	≥ 1.14 < 1.48	≥ 0.99 < 1.31	≥ 0.71 < 1.05
Below average	≥ 0.7 < 1.17	≥ 0.54 < 0.98	≥ 0.64 < 1.08	≥ 0.78 < 1.14	≥ 0.5 < 0.99	≥ 0.3 < 0.71
Bad	< 0.7	< 0.54	< 0.64	< 0.78	<0.5	< 0.3

As the user's experience is completely subjective so this method provides a great platform for getting user's feedback in a simple and interesting way.

6. EVALUATION RESULT

After the prototype evaluation we have collected the evaluation data, and data of post evaluation open-ended questions. After that we have analyzed the data. Here we have discussed in details.

6.1 User experience evaluation

We have used User Experience Questionnaire (UEQ) and post evaluation questions to get user's feedback. In UEQ user can circle the mark from +3 to – 3 for Pragmatic and Hedonic quality. After circling values the users also have answered some post evaluation questions to let us know their feedback again. After getting their feedback we have compared the value with the bench mark of UEQ value to get to know whether our prototype has achieved the users' expectation or not. From their feedback values we have calculated the average value of participant's agreement towards six scale and the below Figure 12 represents the result of that with bar graph.
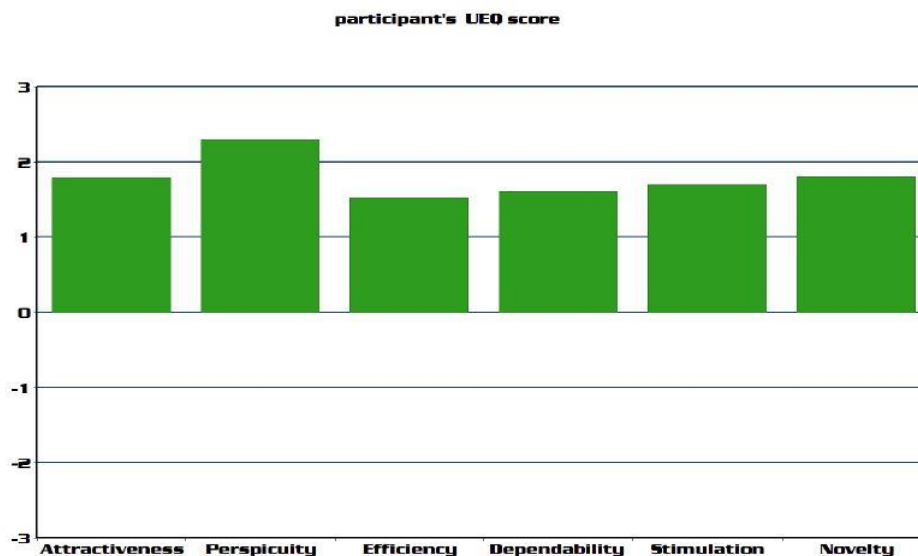
Figure 12.   *Bar graph representation of participant's score of UEQ data*

We also have calculated the Pragmatic and Hedonic value of the product. The mean values of Attractiveness, Pragmatic, and Hedonic is 1.79, 1.85, and 1.63 respectively.

The Perspicuity, Efficiency and Dependability belong to the scale of Pragmatic quality whose average users' evaluation value is 1.85 that belongs to excellent category [Table 8]. Moreover, this excellent category means that the product is easy to use and users can solve their task without problem. On the other hand, Hedonic value is 1.63 which

also belongs to excellent category according to benchmark result. As a result it indicates that design is creative and exciting and motivating to use. Attractiveness value is 1.9 that belongs to excellent category as well which indicates excellent impression of our design.

Schrepp et.al in 2017 has given a benchmark [53] that has been created from the large sample of evaluation results from the science study and industry projects. The benchmark result of UEQ has been presented in [53] where each color has separate meaning like red color represent bad feedback of the product and green color represents the excellent feedback for the product. Our overall evaluation result by the users has been represented through the line on the bar chart.
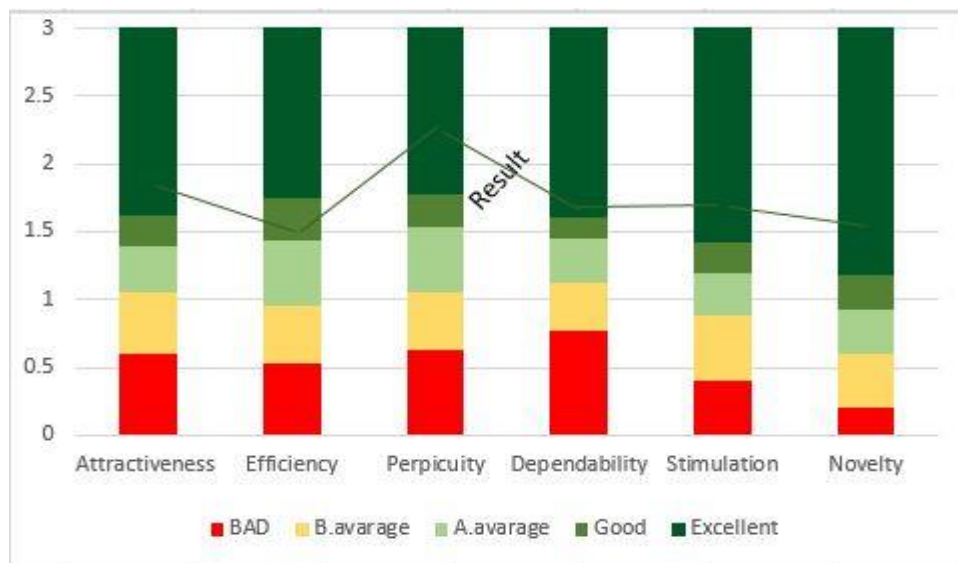
Figure 13.   *Bar graph of evaluation result against bench mark*

The users' evaluation values have been compared against benchmark and category has been marked in the below Table 9.

Table 9.   *Determination category against benchmark*

Scale	Mean value	Category by comparing with benchmark
Attractiveness	1.79	Excellent
Efficiency	1.53	Good
Perspicuity	2.34	Excellent
Dependability	1.68	Excellent
Stimulation	1.65	Excellent

Novelty	1.58	Excellent

As the user evaluation values of Pragmatic and Hedonic has reached the excellent category so we can say that our product has met the users' requirements.

6.2 Prototype evaluation open-ended questions

The structured post evaluation open-ended questions was designed as last part of our research work.The details are given below.

Table 10.   Post evaluation open-ended questions

4.   Suppose you want to go to any tourist spot inside your country . Do you think you will be able to find what you need from this web service?
5.   Does this design provide you to do your all traveling activities by using this web service without facing problem? Why?
6.   Is it hard to understand the functionality of the design? Why?
7.   If you compare this design with other traveling websites then what are good sides and bad sides of it?
8.   Does this service motivate you to go for traveling inside your country? Why?
9.   Do you like to add any functionality here or this web platform is enough to meet the traveler's all expectation?
10. What did you find interesting or appealing in this service?

6.2.1   Post evaluation data analysis and findings

We have used thematic analysis method to evaluate our qualitative data and the whole data analysis process has been explained with Figure 14. The thematic analysis has six steps which are

Step1: Reading the transcripts

Step2: Labeling relevant pieces of information like words, phrases, sentence, or even paragraph which is also called coding.

Step3: Creating categories by bringing several codes together

Step4: Labeling categories (also called theme) and deciding how they are connected to each other.

Step5: Deciding if there is a hierarchy among the categories and drawing a figure to summarize your results.

Step6: Writing up results.

Fulfilling needs

For managing traveling activities all our participants have said that they will be able to find what they need and they will not face problems to manage their traveling activities from this website as reasons they have mentioned the following things: presented valuable information, required functionalities exist, contained important links, presented all functionalities, enough information exist, necessary things presented etc. Among all participants one participant has stated regarding managing activities *"Yes off course. Because the service has all required things. For example, transport link gives information about transport"*. Regarding problems facing one participant said that "i have got everything in this site" so i will not face problem. Our participants also have said that they will be able to personalize their contents that means they could search the contents according to their demand. As reasons they they mentioned following reasons which are nice filtering system, appealing filtering system.

Usability

When comes to the usability issue of functionalities all of our participants have said that all functions are easy to understand of this website. Behind their statement they have mentioned the following things which are easy booking, easy to use, not complex application, normal web, understandable functionalities, easy to understand, not complex site, predictable functionalities, reduce traveling work complexity.

Website experience

Regarding judgement of the website we have got good responses from our all participants. As good sides or motivating sides they have mentioned some features which are suggesting similar places, carbon dioxide calculation, faster content loading, suggesting nearest spots, cost effective traveling. One participant has also mentioned hotels booking, ticket booking, destination search all these functions as a good sign of this site. According to one participant's statement *" yes it motivates. Because it provides the information about place with available support which one should know before hand of traveling somewhere"*. Furthermore, another one has mentioned *"Actually motivation depends on mood when i feel good i go to traveling so traveling things only depend*

on minds but yea as it suggests near tourist places so i might be inspired in spite of having bad mood".

On the other hand, for the down sides of this design our participants have said several things which are bad color selection, Google maps wanted, not completed application and also raised voice to get real application. According to one participant statement "bad is this is not a completed task". The below Figure 14 describes the data analysis process using thematic method.
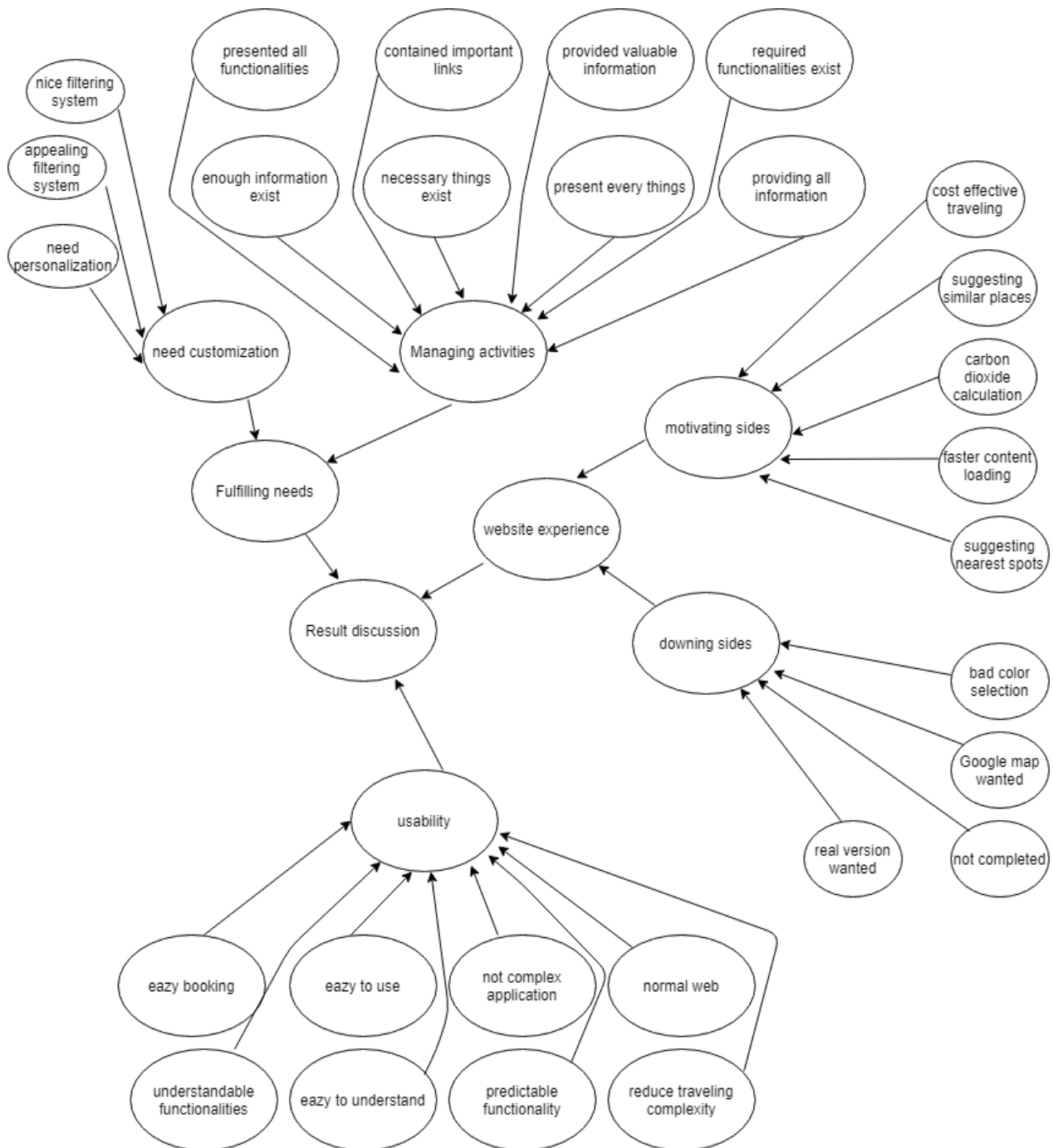
Figure 14. *Thematic analysis process*

7. DISCUSSION

Here we have discussed the summary of the findings, implications for design, considering ethical issues, limitation, future work, and proposed final design.

7.1 Summary of the findings

Our first research question was (1). What are the travelers' requirements and problems related to near home tourism?

To seek the answer of that question we have conducted the user study with the total number of eight participants at the Tampere university, in Tietotalo building. We have discovered the users' requirements like what users want and what are their problems about the persuasive design for Near Home Tourism. After analyzing the data, our findings have suggested that they face problems about booking hotels, buying tickets, security issue of hotels and destination places, and as requirements they want an ideal platform for near home tourism from where they can solve their mentioned problems and can manage all traveling activities chapter [3.2.3]. Excessive information on the tourism website falls users in difficulty to search information on the website and to make their travel plan [5]. However, in our design we have kept users' required contents so that they can find their required information without giving unnecessary effort. Moreover, the study [38] suggests that underestimation of web contents has a negative impact on human minds. Furthermore, users want to get information about travel, travel cost, accommodation, food, emergency contact from a persuasive traveling website [40] and from our design users can get all these information too. In addition, the domestic tourism remained uninformed to the users [3] but our design will suggest near home tourist places based on uesrs' present location as a result users will get to know the tourist places around them. Furthermore, from our post evaluation data chapter [6] we have got to know that our design will fulfill their needs because all required contents are present and all functions are easy to understand. All of the mentioned reasons respond our first research question.

Our second research question was (2) What kind of persuasive elements should a web service for near home tourism have?

Users don't know what is persuasive element or what does it mean. They always use service to perform their activities so if one website could meet the expectation of users then users judge the site as good. But if the service fails to meet their expectation they

will not use it anymore and rate it as bad service. From the studies [39, 40] we know that users should be involved in persuasive design to know about their requirements. So during our research we have conducted user study chapter [3.2.2] to know about their requirements and we have kept their required things in our design. Hence, our post evaluation result of design got excellent users' feedback which suggests that users will be able to fulfill their needs from our design. Furthermore, from the study [32] we know that web elements which are information, buttons, links, box, icons etc are implemented through persuasive features/techniques in persuasive website to draw the users' attention. In our design we have also implemented persuasive features/techniques to visualize web elements which are listed in [Table 6]. Moreover, the study [15] suggests that ability(simplicity) of website is one of motivating factors and our post evaluation findings chapter [6.1, 6.2.1] suggest all of our functions are easy to use. As a result, users can do their activities without giving unnecessary effort as well. Furthermore, our user study chapter [3.2.2] and one research [33] suggest that credibility is another motivating factor in persuasive design website. To justify the credibility of the website users want to see contact details and users' rating of website chapter [3.2.2]. In our design we have kept these functions too. In addition, besides keeping users' required things and implementing persuasive techniques we have followed Fogg persuasive eight steps method [12] to design our persuasive website. As we have got the excellent evaluation feedback in both Pragmatic and Hedonic qualities, so we could say that our design is useful, enjoying, and satisfying.The above discussions respond to our second research question.

Our third research question was (3) What is the user experience of our website designed to persuade travelers to near home tourism?

According to Hassenzahl model [51] product quality is determined through Pragmatic and Hedonic values and from our UEQ data findings chapter [6.1] we have seen that the Pragmatic and Hedonic values belong to excellent category according to the benchmark result of UEQ, so we can say that our product has met users' expectation. Moreover, we have also designed the post evaluation open-ended questions to get users' feedback about our design from where we have seen that all participants gave the good response for our design of near home tourism. We know that web content is not persuasive technique but has a great impact on human mind [38].Users want to know information about hotels, transports, car rent, restaurants, price comparison, and security issue of hotels and destination places. Regarding our design participants have said that they can manage their all traveling activities from this site which indicates all required contents are present. Furthermore, users can get information about security and quality of hotels

from "user's rating" (represented by star symbol in design) option and can get to know security issue about destination place from "important information" option in our design. Additionally, they have also have mentioned some good sides of our design which are need customization, suggesting the nearest spots, suggesting similar place, carbon dioxide calculation. Furthermore, as we know that ability(simplicity) is motivating factor for the persuasive website [15]. Regarding usability issue they have said that it is easy to use, functions are predictable, and its not a not complex site etc. Along with positive feedback we also have received some constructive feedback about our design which are attaching Google maps in our design, changing color selection and participants also have raised voice to have real development of design. One participant's statement was *"I think all functions are present here but real application brings real judgment"*. Additionally, we know that the Attractiveness denotes the overall judgment of the product. Our evaluation result of Attractiveness belongs to excellent category of our design. So we can say that our design has fulfilled the users' expectation. All of these findings answer to our third research question.

7.2   Implications for design

Our thesis persuasive design for near home tourism is novel topic with few partially related researches conducted [32,15]. In Fogg behaviour theory [15] the researcher has discussed theoretical explanation of persuasive techniques, but did not conduct user study to measure the effectiveness of their techniques and even they did not show practical implementation in design. According to Fogg, to complete the target behaviour motivation, ability and trigger have to be hand in hand in persuasive website. One website could motivate users but if it fails to provide the opportunity to complete users' task, then we could not say it is a persuasive platform. However, motivation can be implemented through pleasure, hope, social behaviour in design [15]. Our post evaluation findings chapter [6.2.1] suggest users hope that they can fulfill their need from our design and to facilitate social behaviour we have kept "Share Travel Experience" function in our design. Furthermore, regarding ability(simplicity) participants have said that all functions are easy to use. Moreover, after registering to our site through "Register" function users will also get notification about different offers in different time which is called trigger. So motivation, ability, and trigger all are present in our design. So we have showed the practical implementation of Fogg behavior theory. Furthermore, in the study [33, 34] researchers have showed the implementation of persuasive features of Cialdinini's principles and PSD in websites separately but in our design we have implemented the persuasive features/techniques from both [Table 6]. In addition, from

the study [18] we know that Conger's persuasive strategies which are relationship, emotion, and credibility can be implemented through Cialdinini's principles. As we have implemented Cialdinini's principles in our design, so we can say that Conger's persuasive strategies are also present in our design. Additionally, both studies [39, 40] emphasizes the users' requirements to design a persuasive website and we have conducted user study to know their requirements as well. Besides, the study [40] suggests that users want to get information from a tourism website about travel, travel cost, accommodation, food, discount, and contact details. As our post evaluation result regarding design received excellent feedback from the users so we can say our design has met all users' requirements. Moreover, Fogg has described the eight steps method [12] to design persuasive platform but its practical implementation is yet to be shown in design. However, we have implemented this method to design a persuasive website. After that, we have evaluated it with the end users and received excellent feedback for both Pragmatic and Hedonic quality. So we have practically implemented Fogg eight steps method as well. As different scholars have discussed persuasive techniques and methods separately and did not show in design, only few research work [33, 34] have showed how to implement persuasive techniques in design. Along with persuasive techniques we also have showed how to use persuasive method to design a persuasive website for Near Home Tourism. So we could say our work will help design team to get the idea of developing persuasive website not only for near home tourism but for other websites as well.

7.3   Considering ethical issues

In our persuasive design solution for near home tourism we have considered the ethical issues while designing prototype. Ethical approach suggests the involvement of users, stakeholders regarding designing persuasive things. We have involved users and followed Fogg eight steps methodology to design persuasive web service for near home tourism. As users also belong to stakeholder's category, so we did not involve stakeholders in our development phase.

7.4   Limitations

Although the research has achieved it's targeted goal, some difficulties hindered to advocate better research result than achieved. First of all, the number of participants was small. We have got eight participants but actually we have tried to manage more participants to conduct user study, but we could not do it because of their time schedule. Moreover, we have planned to involve more than eight participants to take part in

evaluation session of prototype and planned to conduct face to face interview, but due to COVID-19 we were situation bound to conduct online evaluation session. So instead of online evaluation if we could conduct in person evaluation it would give us opprtunity to observe users' expression too. Additionally, If we could conduct user study on more than eight people we might get a wide variety of opinions from them which could carry us through a better design. Besides these, in our design some functionalities were not clickable "Restaurants", and "Car rental" were two of them. So if we could do it users might get better feelings of real application. Moreover, we did not count the characteristics of individualistic and collectivistic culture in our design. As user experience is subjective matter so evaluation result might get varied with real application and involving large number of participants. Furthermore, we have conducted the structured interview for the user study but it would better if we could conduct semi structured interview because it would provide us opportunity to get more ideas from them by asking more questions on the basis of their answers. Moreover, we did not go for the iterative development process so if we could do it probably we might get more comments about design.

7.5   Future work

We got some constructive recommendations from the users which were changing color combination and adding Google maps. In the future, after redesign our prototype we will go to users to get the their feedback again about our application and it will be an iterative development process. Furthermore, when our application will be designed for specific culture then we will count the characteristics of individualistic and collectivistic culture. In addition, we might conduct evaluation with semi structure interview in future because it would promote chance to observe the real expression of the users about application. Besides, we would invite more participants for the evaluation in our next phase.

7.6   Proposed final design

From our evaluation result we have seen that our design have met the users' expectation, but we also got some constructive feedback to make the correction in our design. First of all, According to uses' evaluation chapter [6.2.1] one participant has responded that color combination is not pleasing, so we need to change the color combination. Secondly, another participant has mentioned to see the Google maps along with suggested nearest tourist places. Thirdly, some participants have mentioned they are concerned to see the real application of prototype. So in our current prototype we have to make the above corrections, and hope it will make the users more satisfying.

8. CONCLUSIONS

Our research focuses on finding out the barriers and requirements of the travelers for near home tourism and designing a persuasive platform for Near Home Tourism. By conducting user study we have found out users requirements, and we have implemented web elements in our design through persuasive techniques. To develop persuasive web service for Near Home Tourism we have followed Fogg eight steps method. Our research has implemented persuasive techniques from PSD, Cialdini's six principles, and Fogg behaviour model. Environment-friendly traveling is crucial to protect surroundings and through our design implication we have showed the users total amount of carbon dioxide emission caused for traveling so that they might be aware about harmful effect of carbon dioxide emission on environment. Moreover, to decrease carbon dioxide emission and to motivate travelers towards near home tourism our platform suggests the nearest tourist spots based on users' current location. As our evaluation result has reached excellent users' feedback, so we could claim that our proposed persuasive platform has met all users' expectation, and hoping to encourage travelers towards near home tourism through our application. However, we also acknowledge that the number of participants recruited in our research work was limited. Traveling is important but remaining careful about detrimental effect of carbon dioxide on the environment is important too.

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APPENDIX A: INTERVIEW QUESTIONS

Persuasive Design for Near Home Tourism
Interview question

1. Do you like travelling? Have you ever been to any tourist place inside your country?

2. Why didn't you go? (After this, go to Q.N 4)

3. How do you arrange your trip inside your country, for example, selecting destination place, managing hotel, booking tickets etc.? Is it done by yourself through online or done by through a travel agency? If manage by an agency then why?

4. When you want to choose your traveling place inside your country and to book it through online? What kind of problems do you usually face?

5. Do you have any suggestions how to overcome these problems?

6. What do you want to experience in your destination place?

7. How do you choose one particular traveling website over other traveling websites to select your destination place and to book it?

8. How do you believe that this site is secure and trust worthy for choosing traveling place and for booking it?

9. According to your opinion, what kind of service do you expect to get from a traveling website?

10 For domestic traveling, you want to book transportation ticket (train, bus, plane) from traveling website to go to your traveling spot and when booking if you see that every transportation shows the total amount of Carbon dioxide (CO2) emission to reach your destination so….

- What would you think of this? Would you care? According to you how travelers in general would react to seeing the CO2 emissions?

- Would it have an influence on your motivation to choose a transportation option? What kind of an influence?

11 if you see the one "feature" in traveling website from which you can search the similar tourist spots, for example, one tourist spot is located inside your country (called domestic tourist spot) and exactly the same looking tourist spot is located in another country (international tourist spot). So…

- What do you think of this? Will it motivate travelers to select domestic tourist spot instead of international tourist spot?

APPENDIX B: ANSWERS OF INTERVIEW QUESTIONS

P1=participant one, p2= participant two, ……………p8=participant eight

Question no 1. P1=p2=p3=p4=p5=p6=p7=p8. That means all participants have went to travelling.

Question no 3. In response to that question all participants said that they do traveling activities by themselves.so P1=p2=p3=p4=p5=p6=p7=p8.

Question no 4. In response to that question all participants have faced problem when they do their traveling activities except two. So P1=p2=p3=p4=p5=p8. Exceptional is p6 and p7. They did not face problem.

Question no 5. In response to that question every participant gives different opinions. For example p1 wants booking tickets from same site where he/she selects tourist spot. P2 wants more suggested hotels for booking easier. P3 wants more information about tourist spot and hotels. P6=p7 they did not give suggestion because they did not face problems. From their given information it is clear that they want an ideal traveling web service from which they would get all services.

Question no 6. When they answer to question no 6, participant one (p1) wants to get natural beauty. P2 says natural beauty and resorts. P3 wants to get museum. Rest of the participant want food, hotels, natural beauty. P4 wants to get amusement park, fishing and hiking also along with others.

Question no 7. For selecting one particular site over other sites all participants said that they select it on the basis of cheaper price except participant (p3) said that he selects it after watching TV advertisements.

Question no 8. From participant one (p1) to participant eight (p8) everyone believes site by seeing users rating. Only p3 believes site by watching TV advertisements.

Question no 9. Participant one (p1) said cheaper price and organized Information.

Participant two (p2) said cheaper rate. P3 said organized Information and Booking all tickets. P4 said managing Tickets and all kinds of traveling Information. P5 wanted to get service like hotels.com traveling site. P6 wanted to have Food, Accommodation, and Tourist feedback. P7

wanted to get Food, Car rental, Price comparing. And last participant (p8) wanted to get secured Hotels to be listed, Food, and Price compare.

Question no 10. In response to question no 10 everybody give the positive answer. That means they say they have said that if they could see the Carbon dioxide (CO_2) emission from every transport they will chose that transport which emits less Carbon dioxide (CO_2). Only two participant (p4 p6) they have said they are not too much concern but other travelers could chose the less emission transport.

Question no 11. Here p1=p2=p3=p4=p5=p6=p7=p8. That means all participants have agreed that they will definitely go to the domestic tourist spot instead of international one. One participant p1 said that as it is inside country so people could travel any time.

APPENDIX C: CONSENT FORM

Persuasive Design of Near Home Tourism

Consent form for user study

We invite you to participate in a user study that is part of Muhammad Sayedur Rahman's Master's Thesis at Tampere University. The topic of the thesis is Persuasive Design for Near Home Tourism. We would like to have an audio-recorded interview for designing a concept about Near Home Tourism for the travelers. The aim of the project is to find out the optimal solution for the travelers to find about destination place and booking it. We are conducting this user study to find out users' requirements.

All data will be treated confidentially and only to be used for the purpose of our academic thesis. The data including recordings and written notes will not contain any personally identifiable information about you. All data will be destroyed after the completion of the thesis.

Based on above information, I provide consent for using my data in the study.

Your name ....   **Date** ....

APPENDIX D: USER EXPERIENCE QUESTION-NAIRE (UEQ) FORM

Consent form

Persuasive Design of Near Home Tourism

Consent form for user study

We invite you to participate in evaluation part of Muhammad Sayedur Rahman's Master's Thesis at Tampere University. The topic of the thesis is "Persuasive Design for Near Home Tourism". We would like to have an evaluation of our prototype and all answers of interview questions for designing a concept about Near Home Tourism for the travelers. The aim of the project is to find out the optimal solution for the travelers to find about destination place and booking it. We are conducting this User's evaluation for getting the user's feedback about our design. By participating in prototype evaluation you will help us to come up with the final Persuasive Design for near Home Tourism. All data will be treated confidentially and only to be used for the purpose of our academic thesis. Data will not contain any personally identifiable information about you. All data will be destroyed after the completion of the thesis.

Based on above information, I provide consent for using my data in the study.

Your name ....   Date ....

* Required

1.   Name & date *

     _____

Skip to question 2

Please Choose one value from given option based on your opinion about our prototype design

2.   1. Attractiveness| (-3)Annoying....(+3) Enjoyable *

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	○	○	○	○	○	○	○

3. 2. Perspicuity | (-3) Not Understandable .....(-3) (+3)understandable *

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

4. 3. Novelty | (-3) Dull .....(+3) Creative *

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

5. 4. Perspicuity |(-3) difficult to learn ....(+3) easy to learn

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

6. 5. Simulation | (-3)Inferior.....(+3) valuable

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

7. Simulation | (-3) Boring .....(+3) Exciting

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

8. **7. Simulation | (-3) Not interesting ....(+3) Interesting**

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

9. **8. Dependability |(-3) Unpredictable.....(+3) Predictable**

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

10. **9. Efficiency | (-3)Fast.....(+3) Slow**

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

11. **10. Novelty | (-3)conventional.....(+3) Inventivel**

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

12. **11. Dependability | Obstructive..... (+3) Supportive**

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

13. 12. Attractiveness | (−3)Bad.....(+3) Good

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

14. 13. Novelty | (−3) Conservative.....(+3) Innovative

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

15. 14. Attractiveness | (−3) Unlikeable ..... (+3) Pleasing

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

16. 15. Novelty | (−3) Usual.....(+3) Leading Edge

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

17. 16. Attractiveness | (−3) Unpleasant .....(+3) Pleasant

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

18.   17. Dependability | (-3) not Secure ..... (+3) secure

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

19.   18. Attractiveness | (-3) Unattractive .....(+3) Attractive

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

20.   19. Attractiveness | (-3) Unfriendly.....(-3) Friendly

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

21.   20. Efficiency | (-3 Inefficient ..... (+3) Efficient

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

22.   21. Efficiency | (-3) Impractical .....(+3) Practical

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

23.   22. Efficiency | (-3) Clustered ..... (+3) Organized

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

24.   23. Perspicuity | (-3) Complicated .....(+3) Easy

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

25.   24. Perspicuity | (-3) Confusing ..... (+3) Clear

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

26.   25. Simulation | (-3) Demotivating .....(+3) Motivating

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

27.   26. Dependability | (-3) Does not meet expectation ....(+3) Meet expectation

Mark only one oval per row.

	-3	-2	-1	0	1	2	3
Row 1	◯	◯	◯	◯	◯	◯	◯

APPENDIX E: POST EVALUATION OPEN-ENDED QUESTIONS

1. Suppose you want to go to any tourist spot inside your country. Do you think you will be able to find what you need from this web service?

8 responses

yes

Yes, it has almost all the valuable information

I think so

yes. this is because what i need to arrange a travel i think i could do it from here

yes it will mett my expectation because i get puzzled choosing places and booking tickest but here it seems easy

yes it is possible to do all activities design demonstrates that

Yes . The web service has almost all the required link. So it is very helpful.

Yes, i think so. This website well organized and easy to use.

2. Does this design provide you to do your all traveling activities by using this web service without facing problem? Why?

8 responses

yes. because I have got everything in this service.

Yes, The website has individual option to search my need.

yes, on the prototype context , this have nice filtering system

by seeing the functionality it seems that it could be possible but real application could bring the real experience.

i think its possible because all functions are here what usually needed bu the travelers

i might say yes as it is not complex application

Yes off course. Because the service has all the required things. For example transport link give the information about transport.

Yes it does. Because it contains all important link one should have to select the traveling destination with ease.

3. Is it hard to understand the functionality of the design? Why?

8 responses

No. Its a normal web service

it was easy to understand the functionality of the design as it has clear indication of each function that one traveler needs

No, easy to understand.

no, because all functions are easy to understand in the design

it is easy to understand because like other sites here it is not complex

yes it is understandable and predictable from which i can do what. but real application is important

No . It is easy to understand.

It is quite appropriate. All the functionality is understandable and i know real version will be more convenient.

4. If you compare this design with other traveling websites then what are good sides and bad sides of it?

8 responses

if i compare with other side, the good side: Similar places sections, bad side: color selection

good thing is content load without page refresh, bad thing is this is not completed task.

if i compare it with others i see that here i can do tickets booking, destination search , hotels book from in one site besides "similar place " and carbon dioxide calculation , and suggesting near tourist spot are different from others

from prototype it seems that some innovative features are here like footprint calculation, similar places suggestion are good features

good sides some innovative thinking like footprint , similar place and all basic functionalities are here and bad side is not real application and two more features are not working

One of the link similar place which is really good in this application. I dont find any bad one.

I can not say exactly good or bad side of this website because i am not that aware of such kind of website. As my opinion good side is all the information one required are available in this website.

5. Does this service motivate you to go for traveling inside your country? Why?

8 responses

I dont think so

yes, i found all the necessary information in written and visual.

yes, because using this service may I find more information about tourist spot.

yes because it might reduce the complexity of traveling g activities and meet expectation what i want

i think so because sometimes i feel tired but as it suggests near tourist places so it is motivating

actually motivation depends on mood when i feel good i go to traveling so traveling things only depend on minds but yea as it suggests near torist places so i might be inspired in spite of having bad mood

Yes. I think by using this site one can know the cost effective traveling inside the country. Thats why traveller would travel inside there country by using this application.

Yes, it does. Because it provides the information about the place with available support which one should know before hand of travelling somewhere.

6. Do you like to add any functionality here or this web platform is enough to meet the traveler's all expectation?

8 responses

no

i think it has enough information for its first launch

Besides all the functionality , I would like to add some functionality like as google map of every tourist spot.

i think all functions are present here . real application brings real judge ment

no i think all are here but waiting for real application

it is hard to say but i think it is ok

I think all the functionality is here. No need to add anything.

I think all the functionality it needs already is in this website.

7. What did you find interesting or appealing in this service?

8 responses

The earby tourist spots seems to me interesting

similar place section

filter system and content loading

different features like carbon dioxide calculation, suggesting similar places, and simple to understand functionalities.

i already mentioned like innovative features and all necessary things are here

innovative features , suggesting near places, thats it

Similar places link seems to be interesting to me

Similar place to visit along side the world wide which gives an idea about where you can find similar place and how much it cost.