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Universal Design

An usability and Universal Design investigation of the three-click rule for navigation.

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OSLOMET

PREFACE

I chose a theme that seemed to be simple, simple and complex at the same time. The “Three-click rule” is an unofficial rule, it is difficult to say when this rule arose and who was its founder, perhaps this rule originates even before the advent of the Internet and modern technologies, since the number “3” appears in most religions. In the process of studying the literature, I learned that I was not the only one who could not find information about the founder of this rule, so it can be said that the "Rule of Three Clicks" is surrounded by secrets and mysticism as we still do not know where it came from.

I am grateful to the Government of Norway and OsloMet University for making education accessible and interesting, to Pietro Murano and Anis Yazidi for guidance and support during the writing of this thesis.

I am grateful to fate and God for giving me willpower, patience, wisdom and stress resistance. It took patience and wisdom to rationally distribute the time that I had to share between my family with 2 small children, study and work, as well as stress tolerance, when the war broke out in my home country of Ukraine on February 24, 2022, from that day I could not sleep for a month and food did not go down my throat, but with the strength of spirit I was able to overcome stress, complete this thesis and to help many relatives and friends evacuate to a safe place.

And finally, I am very grateful to the whole world for the support of Ukraine and Ukrainians in their struggle for freedom. This support inspires and motivates to fight for the truth.

Oslo, May 16, 2022 ***Olga Dilen***

ABSTRACT

Purpose and research questions: The aim of this research is to understand the relationships between “Three-clicks rule” and users' experience and to find out if Universal Design is negatively affected if the “Three-click rule” is not implemented in the web design, how are the performance aspects affected and users feel about the interface which fulfils the “Three-clicks rule” in comparison to the websites without implementing the “Three-clicks rule”.

The scope of the project and limitations: For this experimental study two identical working prototypes of the websites were created. One of the websites follows the “Three-clicks rule” and another has a free structure. The functionality of prototypes was limited to fulfil only the needs for this research.

Method and evaluation done: The experimental study took place according to the prepared scenario and an empirical method was used. 20 participants executed 10 tasks on each website version and evaluated their perception with help of a questionnaire. The results were analysed to find the answers on research questions and to confirm or refute the hypotheses.

Discoveries: The analysis of the average speed, intuitiveness, easiness and general rating of different website versions showed that website version based on the “Three-clicks rule” received much more positive responses in comparison with website version based on free structure.

Conclusions and suggestions: It was made a conclusion that Universal Design is negatively affected if the “Three-clicks rule” is not implemented in the web design. There should be reasons why the three-click rule is quite popular and still followed by many designers and marketologs. Therefore this rule is worth attention and more studies around it.

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CHAPTER 1. INTRODUCTION

The Internet has a huge impact on the modern world. We are living in a digital age, digital relationships, digital business and digital competition. According to Marc Prensky (2001) our children are “Digital natives” because they grow up together with new technologies.
By moving a huge part of information and relationships online, the new questions appear. For example: How to make the digital world universal, usable and convenient for everyone?
United Nations (2018) determined “Universal design” or “Inclusive Design” as a tool to make the environment and products, including programs and websites to be usable by all people in the greatest grade possible and the assistive devices should not be excluded for certain groups with disabilities where it is necessary.

The understanding that websites need to be done for people who are diverse is gradually reaching everyone. As we are everybody who is involved in the digital world, the system in the twenty-first century is facing new tasks and new problems. The rules and legislation are necessary to fulfil the human requirements, a very important and integrated part of global digitalization.

“The Three-click rule” or “Three-click rule” is an unofficial rule in web-design concerning the navigation of the website. This rule suggests that for the user's convenience any information on the website should be found with no more than three mouse clicks. This rule is based on the belief that the user will be frustrated and possibly will abandon the website if he can't find the necessary information within three mouse clicks. One of those who mentioned this rule was Zeldman (2001). He wrote in his “Taking Your Talent to the Web” that the “Three-click rule” is based on how people use the web in general. According to Zeldman this rule can help to create websites with logical, intuitive and hierarchical structures.

Since ancient times, society has given importance to the numbers. Number “three” had a very special meaning in the life of humans a long time ago.

Pythagoras, an ancient Greek philosopher, said that number three was the first and true number and he considered the meaning was harmony, wisdom and understanding (MysticalNumbers.com, 2021). Number three appears in most of the religions. The understanding of the religion in Christianity consists of the main three : The Father, The Son, and the Holy Spirit. In the Buddhist Tiratana number three is also known as the Three Jewels of Buddhism: Buddha, Dharma (his teachings), Sangha (his followers). In Japanese culture there is a Toshogu Shrine known all over the world as “Three Wise Monkeys” with the philosophy: not to hear evil, not to speak evil and not to see evil.

While there is little analytical evidence that the “Three-clicks rule” is the real reason for a good design, it is widely believed among designers that that rule is part of a good navigation system. There are many critics of the “Three-clicks rule” and it suggests that it is not the number of clicks that matters but the success of the clicks or the style for presentation of the information that is important.

The aim of this research paper is to understand the relationships between “Three-clicks rule” and users' experience, according to (Tully, 2014) any small research should not have more than 2 tasks or questions so the main questions are:

- Is Universal Design negatively affected if the “Three-click rule” is not implemented in the web design ?
- How are the performance aspects affected and how do users feel about the interface which fulfils the “Three-click rule” in comparison to the websites without implementing the 3 click rule?

For this experimental study two identical working prototypes of the websites were created.
Both have identical aim, information, structure and design but differ by the navigation structure and quantity of clicks to reach the same information. One of the websites fulfils the “Three-click rule” and another has a free structure.
To find the answers on the main questions of this thesis, 20 participants were involved to make an independent evaluation of two websites.

CHAPTER 2. LITERATURE REVIEW.

Human activity (European accessibility act, 2015) is aimed to improve the functionality of the market to make the service and products accessible. This has to be done by removing barriers which people with disabilities meet every day in their life. These barriers are created by the majority of people, designers and executive personnel who do not think about the diversity among all humanity and do not realise the importance of this. Computers, operative systems and e-commerce are in the list of products and services with obligations deriving from United Nations convention on persons with disabilities. The products and services which are covered are identified as being as important for the persons with disabilities, as for people without disabilities.

Universal Design is tightly connected to user experience.

“UX has gained momentum in recent years, mostly as a countermovement to the dominant, task- and work-related ‘usability’ paradigm.”

(Hassenzahl and Tractinsky, 2006)

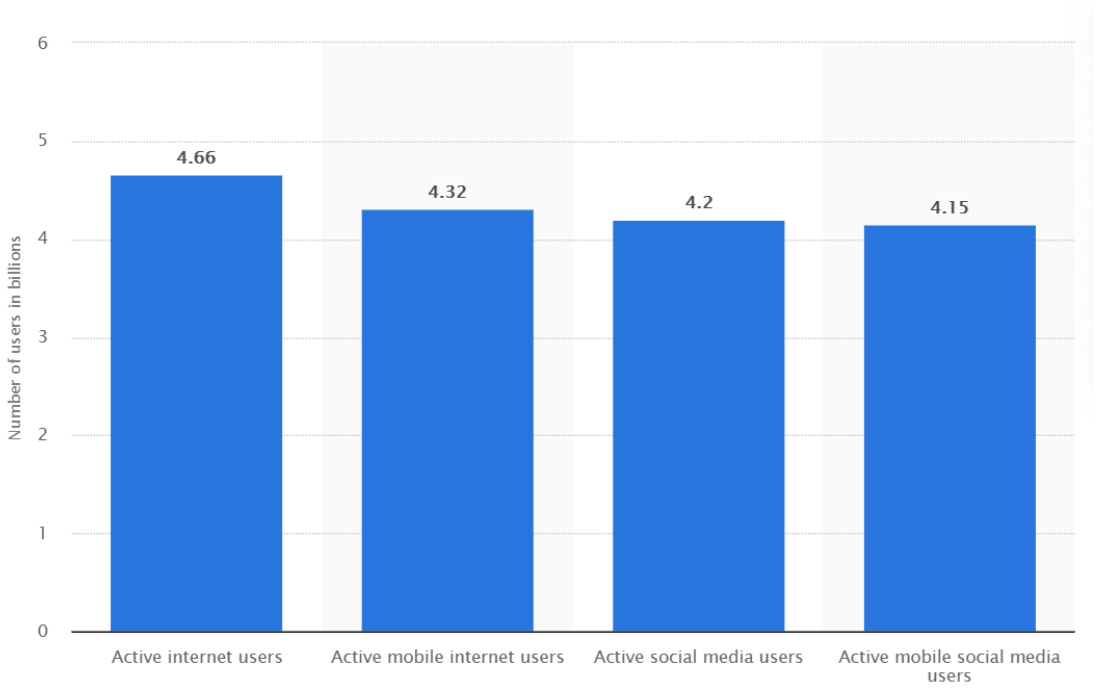
User experience is an emotional or psychological reaction which an individual experiences during an interaction with a service or a product. (ISO, 2008)

Hassenzahl and Tractinsky (2006) also mentioned that there are several different definitions for “user experience”, which in addition to the general experience are hedonic qualities, aesthetics and usability.

2.1 Statistical overview.

Every day, with technological development and global digitalization, there are more and more people who get access to the internet. Nowadays we can't imagine our lives without internet access (Joseph Johnson, 2021) and per January 2021 (Statista, January 2021) there are almost 60 percent active internet users (4.66 billion) of the total world's population (Figure 2.1.1).

Figure 2.1.1. Global digitalization of the world's population.



Northern Europe has the leading internet users rate, which is 96 percent of its total population, followed by UAE, Sweden and Denmark. The lowest rate belongs to North Korea where there is no internet penetration generally in population.
More than 92 percent of all internet users (4.32 billion) are accessing the internet via mobile devices (Joseph Johnson, 2021) and the highest number of internet users (over 2,5 billion) belongs to Asia, (Figure 2.1.2, Statista, January 2021).
Most mobile devices, using Internet systems, have much lower levels of resources compared to the stationary Internet devices (Chae and Kim, 2003). Mobile Internet devices are handy and portable, but have smaller screens and therefore less convenient input/output functions.

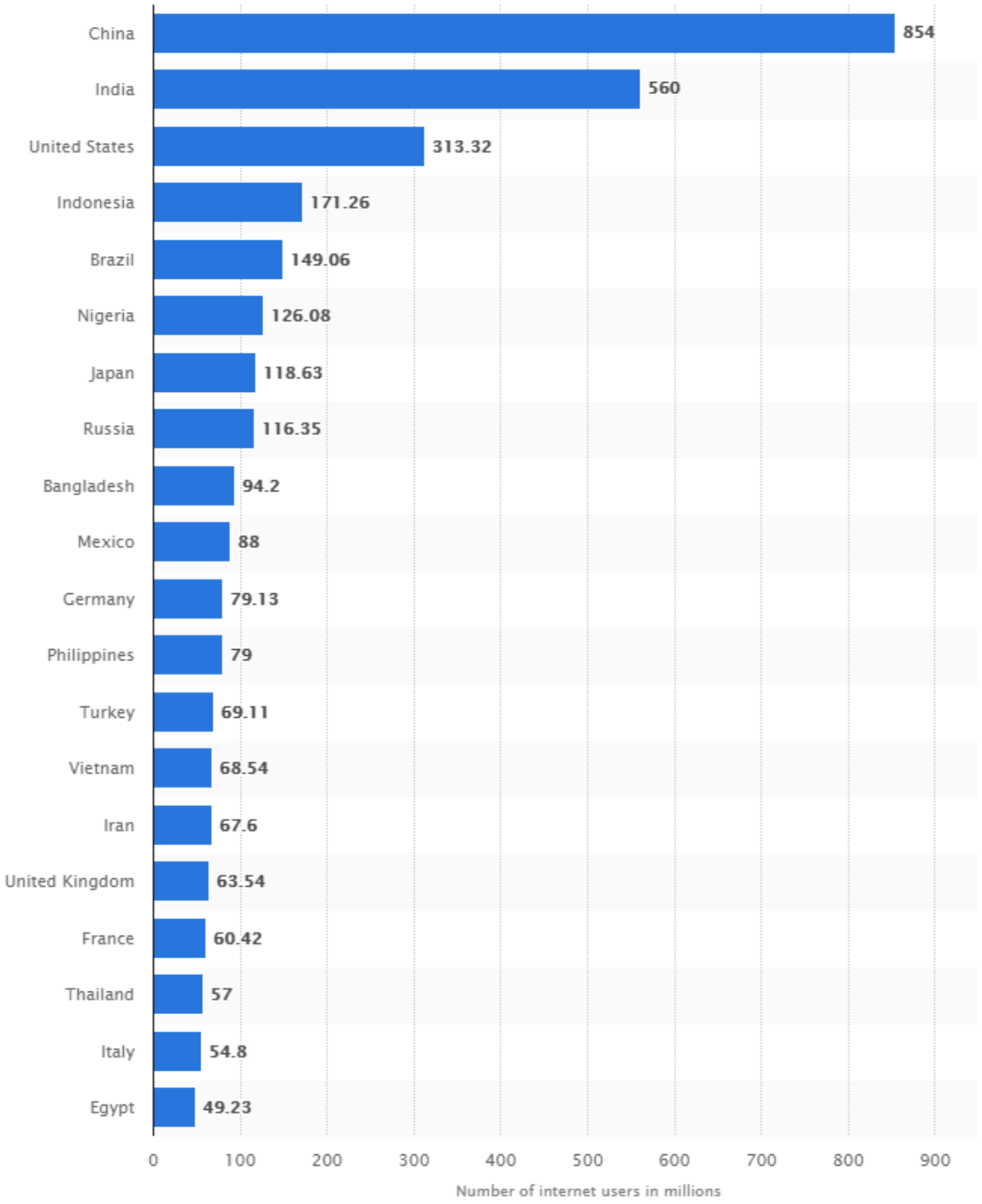
Figure 2.1.2 Number of internet users worldwide from 2009 to 2020, by region (in millions).

Characteristic	Asia	Europe	North America	Latin America / Caribbean	Africa	Middle East	Oceania / Australia
2009	764.4	425.8	259.6	186.9	86.2	58.3	21.1
2010	825.1	475.1	266.2	204.7	110.9	63.24	21.3
2011	1,016.8	500.72	273.07	235.82	139.88	77.02	23.93
2012	1,076.68	518.51	273.79	254.92	167.34	90	24.29
2013	1,265.14	566.26	300.29	302.01	240.15	103.83	24.8
2015	1,563.21	604.12	313.86	333.12	313.26	115.82	27.1
2016	1,792.16	614.98	320.07	384.75	339.28	132.59	27.54
2017	1,938.08	659.63	320.06	404.27	388.38	146.97	28.18
2018	2,062.14	704.83	345.66	438.25	455.84	164.04	28.44
2019	2,300.47	727.56	327.57	453.7	522.81	175.5	28.64
2020	2,525.03	727.85	332.91	467.82	566.14	184.86	28.92

The leaders with the highest number of internet users among population are China (854 million users), India (560 million users) and USA (over 313 million users). The two leading countries still have a big part of their population which is offline (Joseph Johnson, 2021, Figure 2.1.3, Statista, January 2021).

After investigating the communities with poor economies in India, it was found that the biggest challenge in designing applications for such communities is little or no education of the potential users (Medhi, M. Lakshmanan, K. Toyama, E. Cutrell, 2013). Lack or absence of education limits the abilities of the user to navigate a hierarchical user interface (UI) even without text. Compared to the educated category, people without good education are different in their cognitive skills.

Figure 2.1.3. Countries with the highest number of internet users as of December 2019, in millions.



2.2. Concept: Simplify it !

In 2015 “The Time magazine” published an article, where it mentioned a study by Microsoft (Mcspaden, 2015). In their survey Microsoft concluded that the average attention span for modern people is only 8 seconds. In fact the attention span of the goldfish who is, as well known, is ill-focused, is approximately nine seconds. This study found that people nowadays generally lose their concentration after eight seconds, so we have a shorter attention span than goldfish, and this is due to the influence of global digitalization.
Mcspaden explained that the researchers surveyed two thousands participants in Canada to study their brain activity with help of (EEGs) electroencephalograms. This study by Microsoft shows that since the 2000 year, (when people began to use the computers, internet and mobile phones in mass) their attention span has dropped approximately from twelve to eight seconds. According to this report, now people are distracted more easily by plenty of media streams. But for the positive point it can be assumed that the multitask ability has increased drastically at the same time in the age of digitalization. He admits that Microsoft suggested that these changes were a result of the brain's ability to adapt and change over time, and that decreased concentration may be a side effect of the move to the mobile web. This survey also confirmed differences in mobile device usage between generations; for example, 77% of people between the ages of 18 and 24 answered “yes” to the question: “When nothing grabs my attention, the first thing I do is pick up my phone," compared to only 10% of people over 65.

Simple - it is a combination of functionality and beautiness. When we make something simple, it can begin with cognitive fluency and it can be ended with ease of use and accessibility (The heart of Tech, 2015). When we actively manipulate information, for example learning how to use a new product or a new website, we use the part of our brain which is called “working memory”. Anybody who easily loses focus can attest to, admits that it is very hard to think continually about large amounts of information at the same time.

Unpredictable interface design causes frustrations (Lazar, Bessiere, Ceaparu, Robinson, Shneiderman, 2003).

Brad Phillips, worked in media training classes and during media training workshops, usually recommended to the people to develop three main phrases or messages. He said that three is a magic number for the speeches and interviews (Brad Phillips, 2016). In the presentation training workshops he often suggested that the speakers should focus on the one theme and support it by the three main ideas. Some of his trainees have asked “Why three?”. Unfortunately Brad could not find a perfect answer for this question. He felt that trying to prove that number three is “Always” correct number is also not right, because there are of course situations when two or more messages also can work very well and there is no proof that human brains prefer the organising of the information onto three bits. But Brad Phillips assumes that our brains like the information to be organised as simply as possible and mentions Albert Einstein, who said: “Everything should be made as simple as possible, but not simpler”.

Many years ago studies by Miller proved that “working memory” has a limited capacity. Miller stated that the human “working memory” in general accepts around seven, plus-minus two items of information (Miller, 1956). That is why it is important to make the design as simple as possible in use.
Let's look at an example - the first iPod from Apple. It was Steve Jobs who worked on the design of the first iPod and he applied his rigid test: Any song or a function on their new iPod should be able to reach only in three clicks. And Steve Jobs insisted that all of those clicks should be intuitive (Figure 2.2.1, The heart of Tech, 2015)

Figure 2.2.1. Three clicks on the first iPod of Apple.

The iPod itself is a complicated thing, but despite this Jobs knew that for the consumers it is important to feel comfortable while using it, therefore the design is supposed to be insanely simple. That meant it should look simple and should be simple in use even for the users who never saw or used it before. There is a low psychological entry barrier for the simple things and most of us are able to use simple things without any additional training (The heart of Tech, 2015).

(John Brownlee, 2012) mentioned Steve Jobs who applied the rule of three in almost each of his presentations and launching of products and explained that in 2007 Steve Jobs introduced the iPhone as a third revolutionary product of Apple (the previous were Macintosh and iPod). He named all the three products slowly to make the audience understand that the third device will be able to handle all tasks alone. In 2010 Steve Jobs introduced an iPad as one of the three products (between the smartphone and laptop). He also told the audience that the iPad will come in three models of flash storage: 16, 32 and 64 GB. In 2011, Jobs presented iPad 2 in three words as “thinner, lighter, faster” than the previous model. And these three words perfectly described the new device and many blogs and newspapers put those three words on the headline.

There is a story about three guys who were the AIRBNB founders and followed Steve Jobs in his three rules (Leigh Gallagher, 2017). Founders wanted users of the AIRBNB web booking system to make a booking within just three clicks. Leigh was interested in the incredible success and rapid popularity of AIRBNB, she pointed out that prioritising the “Three-clicks rule” has played an important role in development of this booking system.

2.3. Research and opinions.

It is many critics on the “3-click rule” but it is so common and popular that (UXMYTHS, Myth #2), gave its exposure an honourable second place in the ranking of usability myths. Disregarding the popular belief that people will leave the website if the information is not available in three clicks (Icasiano, 2015) the usability tests showing that it is not true. People don't leave the websites. The number of necessary

mouse clicks, in fact, does not affect the success rate or user satisfaction. Less clicks does not make users more happy and not always perceived as faster and more functionable. What is the most important and most appreciated is the ease of navigation, the intuitiveness and ease of use. User should “smell” the information on the way to his or her aim: to get information. If the user does not think about the clicks and their amount, there is no problem in having more than three clicks.

A click itself can be determined as a noise produced by the mouse button when a user presses on it (Glassey & Glassey, 2005). In extended term - a basic interaction of the user with a computer system. In the world of the Internet, click is an action which activates or uses a hyperlink. As one of the most important actions, a click is situated in the centre of World Wide Web Development and considered as a traffic indicator of popularity and economical value of the websites and used therefore as an indicator of online marketing.

Many eminent experts insist that any important page is no more than three interactions from the main page or page of similar weight and authority. This is important to take into account, because the development of the site structure is aimed not only at meeting the needs of the user, but also at the competent transfer of weight to improve indexing and distribution of authority. Architectural design is just as important as usability, because without good search engine rankings, users simply won't be able to enjoy the wonderful navigation and user-friendly interface. This means that it will not be possible to increase sales. You need to find a compromise, not go to extremes and accordingly correct the design. Otherwise you will completely ignore optimization (Artjoker.ua, 2006-2021).

Even a good and wonderful interface in the wrong place and in the wrong context will fail (Nielsen, 2007), which means how hard you will try to fill your webpage with cool, modern and interesting features and effects, if they are in the wrong and inappropriate area or context - your design will never be successful. We also have to pay attention to navigation on the website. An evaluation of a digital library by studying behaviour of low-literacy immigrants in New Zealand have found that navigation in hierarchies should be avoided (Deo, Nichols, Cunningham & Witten, 2004).

Kodagoda, Wong and Khan used cognitive task analysis in combination with open-card sorting techniques to find reasons why low-literacy users abandon web sites. They made a comparative study among high and low literacy users in the UK and found that users with low literacy lose focus when navigating complicated multi-leveled taxonomy (Kodagoda, 2010)

One of the experiments in the USA, was aimed to find out the preference of the low-literacy, chronically-ill population in mobile health system applications with three different cross-page navigation styles. (Chaudry, Connelly, Siek, Welch, 2012) It was admitted that the users liked to have more choices on the page but often were distracted by this from the main task, which caused them to make errors. Based on the findings, it is advised to have structures with up to five of navigation trees of depth and between five to ten of breadth.

(Glassey & Glassey, 2005) think that the 3-click rule has consequences on the websites, due to this rule, the architecture of the website can become deeper or broader and the concept of depth and breadth of the websites was explained by Zaphiris and Mtei in 1997.

Many of us feel frustration after endless searching through the content on the web pages (Jonson, 2003) and if we can't reach information quickly, we are ready to quit or change the website. Jonson mentioned that in one of his studies, one of the perplexed users said that she should be able to find the necessary information on the website within three clicks. To avoid the frustration of the user, and regarding the fact that the information on the competitors website can be available only in one click, it is necessary to try to do best to satisfy the user.

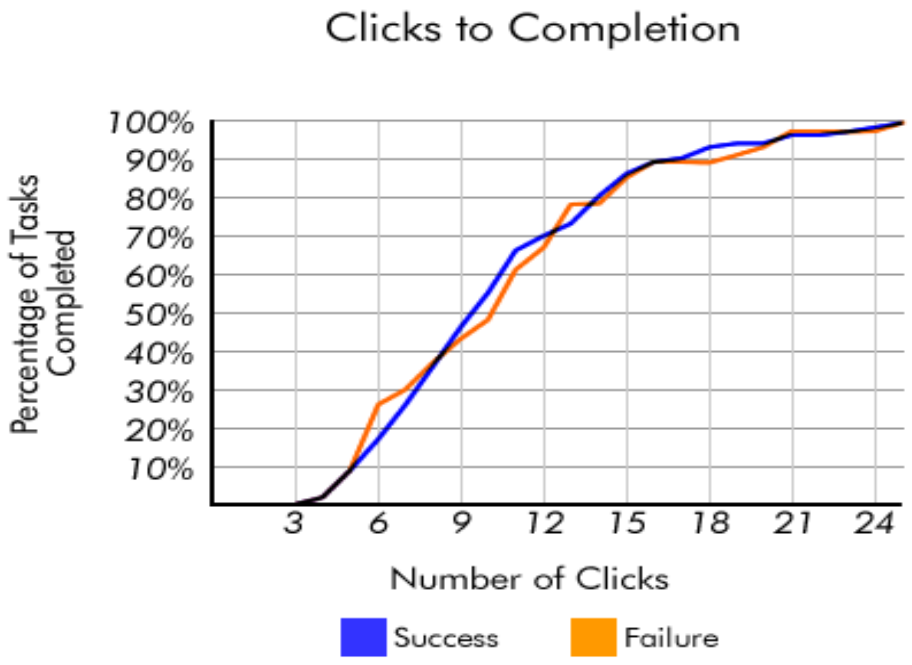
The research about customers behaviour, where analysed the information about clicking was conducted in 2002 and showed that the more clicks the users have done (visited more pages), the less they have bought (Jared, 2002).

One of the Research Consultant at User Interface Engineering with five years experience believed that when applying the “Three-click rule” it will lead to different

design suggestions like a global navigation on each page and making the hierarchy of the navigation wide and shallow itself (Joshua Porter, 2003). If you look at suggestions like an extension of the “Three-click rule”, then the rule is worth following. To see the relationships between the users behaviour and users success when they looked for the information on the web pages, Joshua Porter's company decided to do research because the “Three-click rule” was a requirement in some customers' projects and was a popular rule for many years. To find the answer to the question “is the “Three-click rule” true or false?” They took data from a recent study of 44 users, which attempted 620 tasks. They counted clicks of every task, whether the users succeeded or failed and analysed over 8 000 clicks. They find out that some of the users visited 25 pages before ending the task and some have visited only a couple pages before stopping.

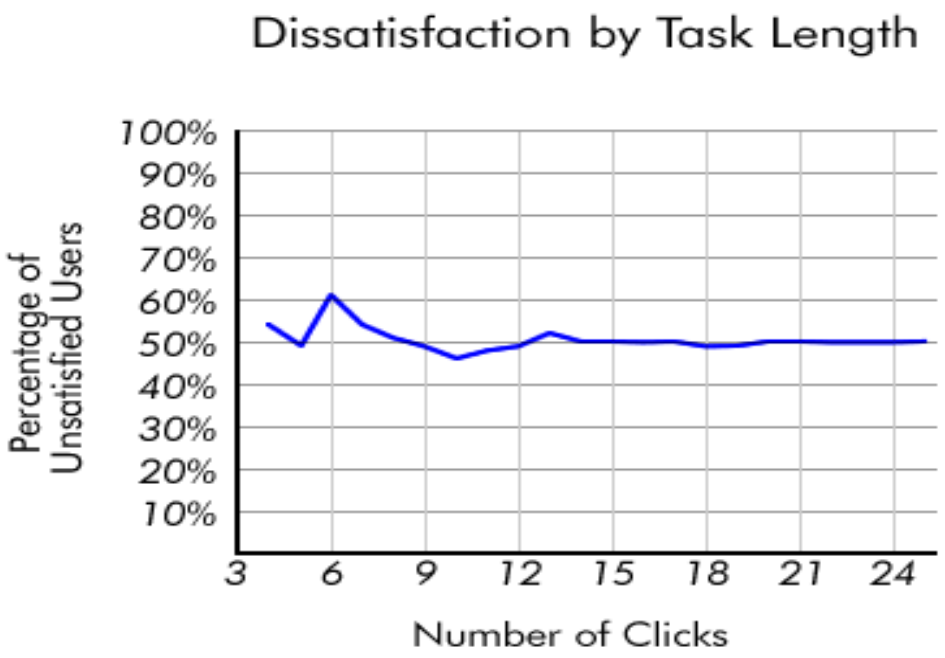
Their analysis showed that the users who succeeded after three clicks were the same as those who finished after 12 clicks. None who left or gave up after the three clicks and after comparison of the successful and unsuccessful tasks they found no difference regarding the quantity of clicks. See Figure 2.3.1, (Joshua Porter, 2003).

Figure 2.3.1. Analysing the clicks quantity for success and failure tasks.



According to this research, Joshua Porter concludes that the “Three-clicks rule” is just a myth, because users kept clicking up to 25 clicks and didn't leave the website and the number of the clicks didn't predict the results, success or failure.
To be sure in this conclusion it was additional study which looked at the problem from a different angle. At the end of each of 620 tasks the participants were asked to rate how satisfied they were with a certain task. After analysing the answers for the satisfaction criteria, there was still no evidence for the “Three-click rule”. Less clicks didn't make the users more happy which meant that users' satisfaction does not depend on the number of the clicks (Figure 2.3.2, Joshua Porter, 2003).

Figure 2.3.2. Satisfaction of the Users and the number of the clicks.



The users do not always read what they are clicking on and approximately one third of those who scrolled down the page are reading the content (T. Haile, 2014)

Aesthetic appeal is the key to certain content on the web. (CoderLessons.Com., 2018) This means that a web designer must know the principles and fundamentals of design, colours, distances, etc. Every day, more and more users see high quality web content. Obviously, users can compare the current web page or website with the one they visited a few hours or a few minutes ago. The organisation of the content

combined with good graphics and colours has made many individual banners / pages popular on the internet.

Unfortunately there is no concrete information about where the rule of three clicks is coming from, almost 20 years ago Olivier Glassey & Olivier François Glassey, in 2005 looked at different authors (Zaphiris & Mtei, 1997; Kalbach, 2003; Porter, 2003; Zeldman, 2001) but could not find an answer...Some of the authors referred to Miller who was working on short-term memory and the limits of our brains in 1956 to process information and suggested the “seven, plus-minus two” rule, which has no direct connection to the three-click rule.

In this experimental study the main question is how the three-click rule influences users' experience and the Universal Design in general on the website.

CHAPTER 3. METHOD AND EVALUATION DONE

3.1. METHODOLOGY

The experimental study should take place according to the prepared scenario - empirical research (Patten, M. 2016). The empirical method was chosen because it meets the needs and expectations for this research.
After identifying the qualified participants, each qualified participant had to execute 10 tasks on each website version and make an evaluation with help of a questionnaire. The results are to be analysed and compared with the responses of other participants in order to confirm or refute the hypotheses.

3.2 Prototype.

3.2.1 General description of prototype.

The research project is based on the number of mouse clicks and users' perception. In order to be able to identify, compare and contrast different reactions and perceptions of users, it was necessary to create two identical websites that would have an identical interface and design but differ only in the number of clicks on the way to the required or necessary information.

It is very important that the web site has a good level of usability, which means the web site should be easily navigated and will not have too many different and complicated operations. The users will perform one or twice the specific operation, and if the website is too complicated or unusual, they will usually leave and you will lose the potential income (Nielsen, 2007)

(John M. Carroll, 1997) in one of his works has mentioned that it is necessary to be traditional and follow accessible design with user oriented criteria so the final product is reliable, efficient, maintainable and correct. Therefore the web sites for this

research did not have to be large and complex, but supposed to have enough alternatives and the tasks so that the users could feel the difference associated with mouse clicks on the way to the necessary information.
The topic of web sites is supposed not to be boring and trivial in order to interest users and to make the testing process interesting. A topic related to travel was chosen. The topic was daily renting of apartments or villas as an alternative to hotels. The flats on the websites are available in three countries - Ukraine, Norway and Turkey.

(Fessenden, 2018) mentioned that designers are making more and more complicated web pages nowadays, where users should scroll down to see all the content. She also described an experiment where 120 participants were a part of an eye tracking study. A very wide range of different websites in different industries and directions was involved in this study. As a result, according to eyetracker most of the users were concentrated on the top of the webpage, which means that the main information classically should be on the top of the webpage.

One of the websites should be based on the three-click rule, where the necessary information is available for the user within three clicks and another website should have a free structure.
To make the real difference between the three-clicks website and website with free structure, it was decided that the number of clicks to get to the necessary information should be in more then three clicks on the website with free structure and at least double of the amount of clicks in comparison to the three-click website version.
The amount of mouse clicks for the three-clicks version should be from 1 to 3, and the number of mouse clicks in the website version with free structure should be from 5 to 7.

3.2.2 Low fidelity prototypes.

At the heart of any project at the initial level there is always a need to decide on the design. (Virzi, 1989) explained that low-fidelity prototypes in early stages of the design will save time and resources. In addition, the designer does not always have

the time and opportunity to implement all ideas at once in the development process. For an effective experiment, the design must be classic, simple and effective.

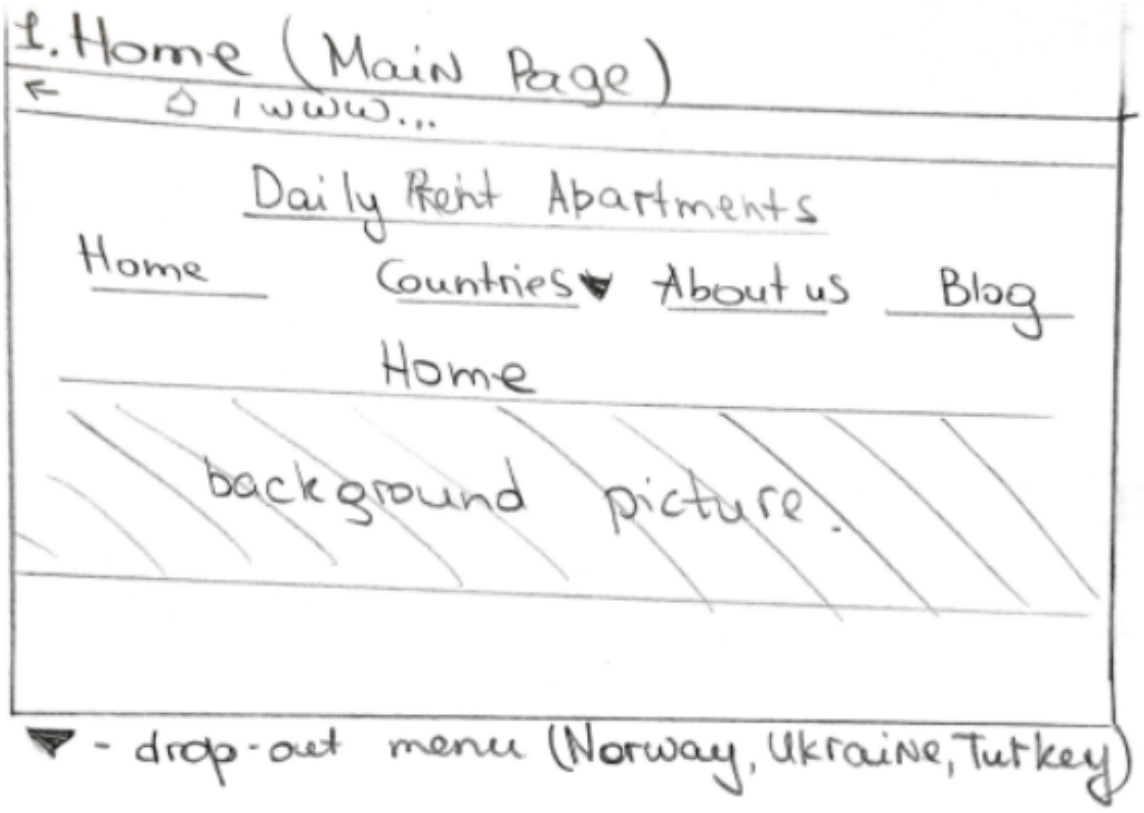
Low fidelity prototypes were first basic sketches by hand on paper. With the help of which the first presentation of the website project was obtained and it was only a rough idea of how the structure of the websites will be organised and how the versions will differ.
Some sketches of low fidelity prototypes for website versions based on “Three-click rule” and websites with free structure can be found in Appendix A1.

3.2.2.1 Website based on “Three-click rule”.

Following a simple and accessible design (John M. Carroll, 1997) - the website based on “Three-clicks rule” has a header menu with website tabs
“Home”, “Countries”, “About us” and “Blog”.
Most of the tasks are to find an apartment or villa with certain characteristics in different countries and cities, so the "Countries" tab is quite often in use.

That is why a special solution like a drop-down menu was needed in order to minimise the number of clicks.
The website, which is built according to the rules of three clicks, has a drop-down menu in the main menu section “Countries”.
Thus, when hovering the mouse or clicking on the black triangle located after the "Countries" tab, a drop-down menu appears with the name of the countries - Ukraine, Norway, Turkey. This menu gives instant access to a list of cities in a specific country, depending on the user's choice.
For example, after hovering the cursor, and the first click on "Norway" in the drop-down menu, the user in one click will be on a page with a list of cities in Norway.

Figure 3.2.2.1. Low fidelity prototype, Home page for website based on “Three clicks rule”.



3.2.2.2 Website with free structure.

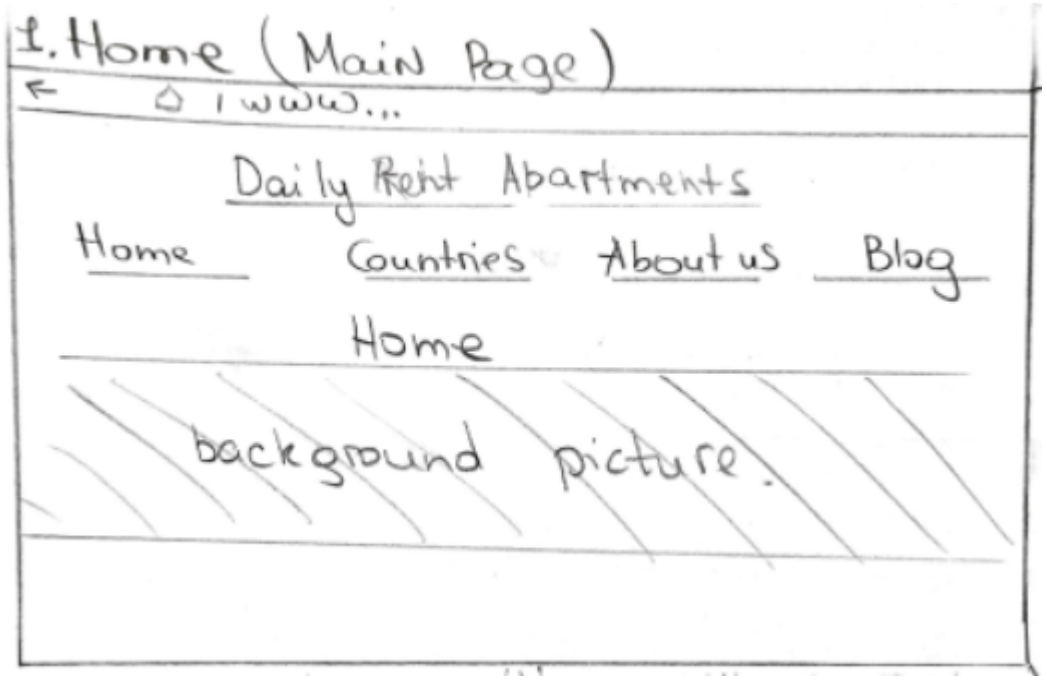
In order to minimise the difference in user perception of two different websites, it was originally conceived to create two identical websites with the same design for this experiment.

Both websites certainly have an identical design and at first glance it is difficult to understand where the differences really are, but as soon as the user begins to execute the tasks, it will be understandable that the difference is in the structure and not in the design.

It was originally planned that in order to access information on a site with a free structure, the user must make at least twice as many clicks as on a website based on the rule of three clicks. This difference was necessary for the user to feel a significant difference in the process of completing tasks.

Unlike a site that follows the three-click rule, a site with a free structure does not have a drop-down menu. In order to get to the page containing the list of available cities in the country "Norway" the user needs to click on the link "countries" and then click on "Norway".

Figure 3.2.2.2. Low fidelity prototype - Home page for website with free structure.



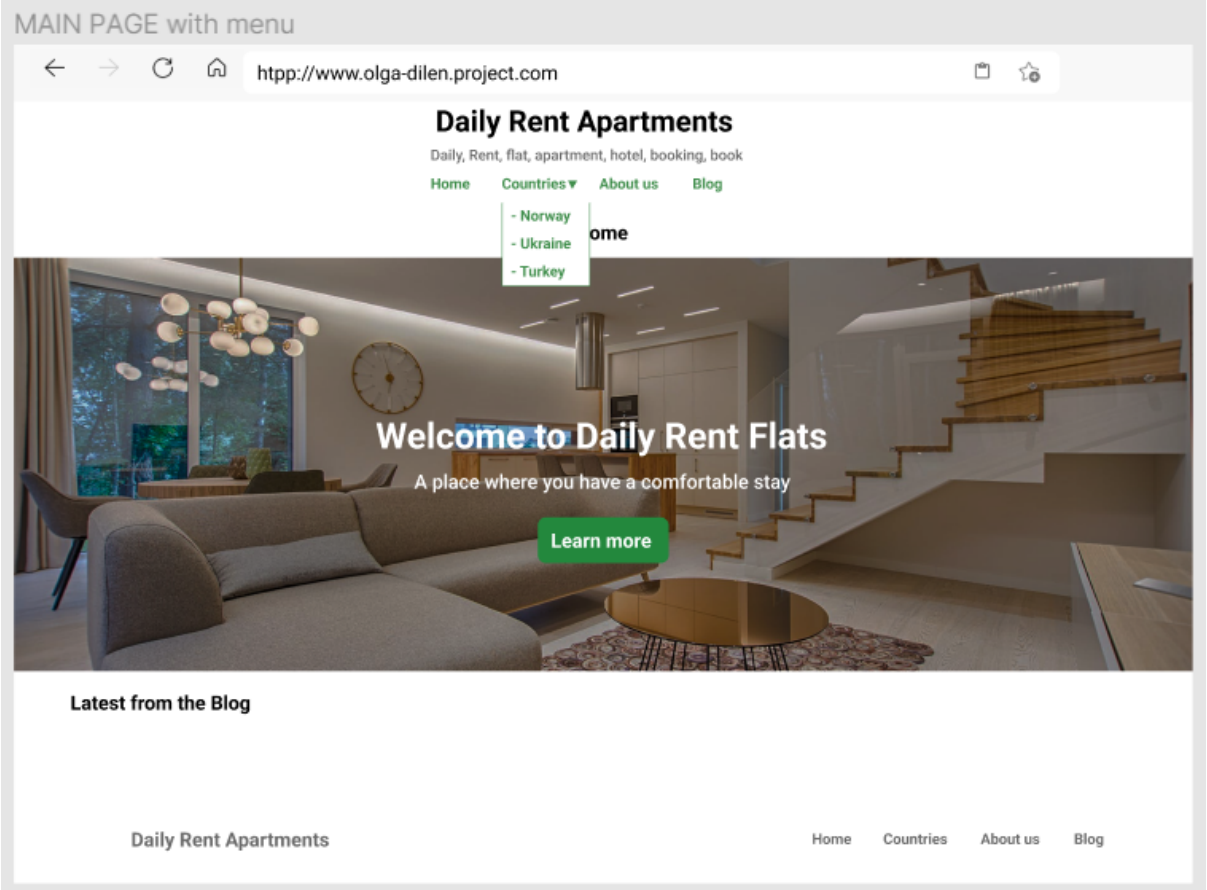
3.2.3 High fidelity prototypes

High fidelity prototypes, unlike low-fidelity ones, approach as near as possible to the real and final design of the websites for the research (Van Harmelen, 1989), they are interactive, functional and presenting the real navigation and flow in design.
The designer's tools such as Figma and website builder Wordpress were used to create the websites. The choice was based on such criteria as simplicity, popularity, availability as recommended (John M. Carroll, 1997) Free website builders and design tools are more accessible and therefore also an advantage to make the right choice.

3.2.3.1 Website based on “Three-click rule”.

The main idea and description of the website based on the “Three-click rule” was described in section 3.2.1.
Figure 3.1.3.1.1 presents a high-fidelity prototype designed in Figma.
The drop-down menu instantly allows the user to get to the page of one of the "countries"

Figure 3.2.3.1.1 High-fidelity prototype-main page of the website based on “Three-clicks rule”.



Each task on this website version can be finished within three mouse clicks that is why the information is not categorised.

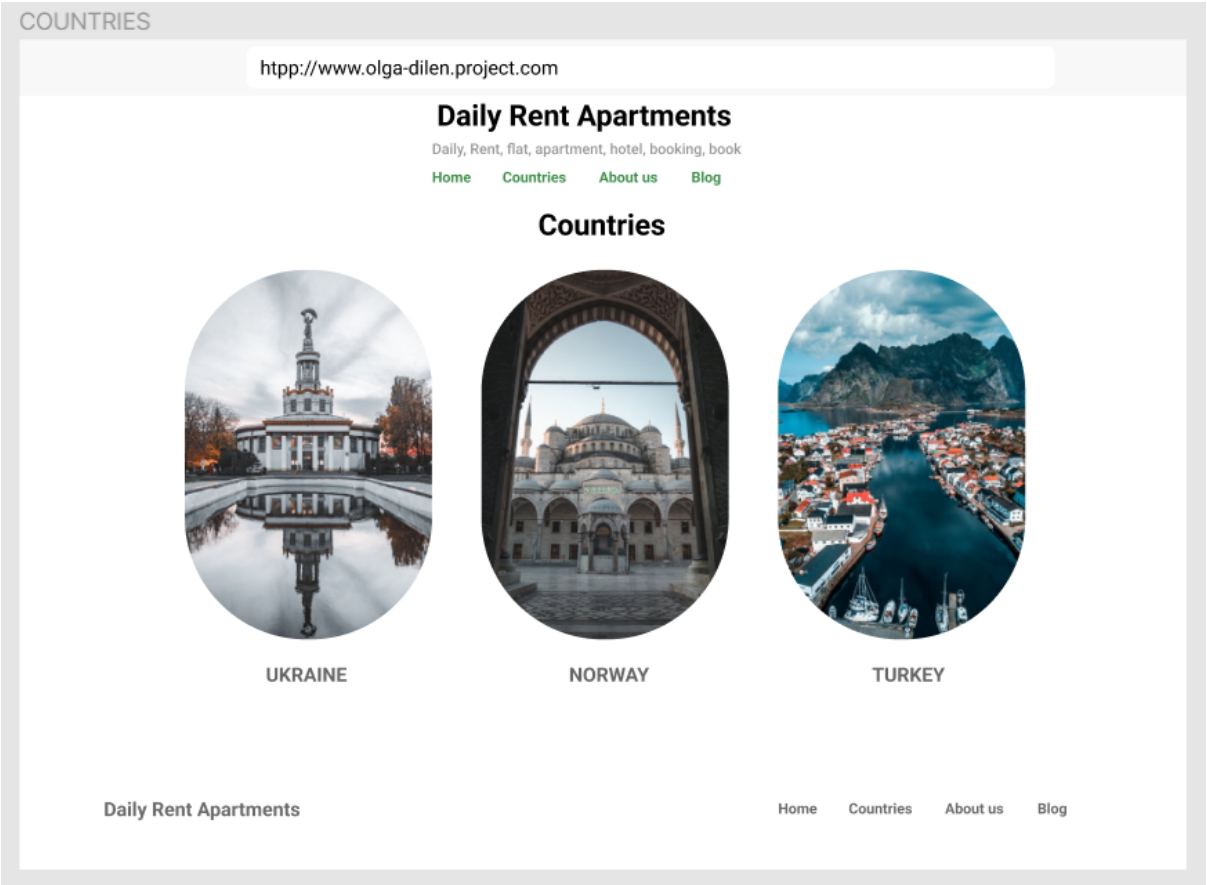
Many components are displayed on one page, without categories. The user must find the desired element by scrolling down the page of the site.

The detailed design of the high-fidelity prototype can be found in Appendix A2 (Website based on “Three-click rule”)

3.2.3.2 Website with free structure.

The description of the website based on the “Three-click rule” was described in section 3.2.2. The website with free structure does not have a drop-down menu, and is built in a way that the user has to make at least twice as many clicks in comparison to the website based on the three-click rule to complete the task (Figure 3.1.3.2.1).

Figure 3.2.3.2.1. Screenshot of website with free structure.



Each task on a website which has a free structure can be finished with at least 5 clicks or at least double the amount of the clicks in comparison to a website based on the three-click rule.
Unlike the website version based on “Three-clicks rule” - the information is categorised at this website version.

3.3 Hypothesis and description of evaluation

Hypothesis is important for experimenters in the same grade as formulas for mathematicians (Poincaré, 1952). Therefore to make a study with sense, it is important to have the hypotheses.
According to the opinions of experienced UX-Designers (Nielsen, Bush, Dayton, Mond, Muller, & Root, 1992) any study should include hypotheses.

Considering the fact that the study is aimed at comparing of two website versions- Some hypotheses have been proposed. The four main hypotheses described below.

Hypothesis 1. Performance
A three click version of the website will perform better than the website version with free structure, in terms of number of clicks.

Hypothesis 2. Intuitiveness.
A three click version of the website will be more intuitive than the website version with free structure, it will be understandable where to go and therefore there will be less mistakes.

Hypothesis 3. Ease.
A three click version of the website will be more easy to use for the users to find necessary information.

Hypothesis 4. Preference.
The prefered version will be a website based on the “Three-clicks rule”.

3.3.1 Participants

Totally 20 users were involved in this study in the age from 16 to 70 years old. Regarding the fact that the internet is an important and often a very necessary tool in everydays life for more and more people, including people with diverse levels of experience and education (Pickering, 2017) it is important to have diverse participants, of different age and gender. Both versions of the websites and questionnaires were only in English, that is why the ability to read and understand the English language was an important quality for each participant.
All the participants had to be internet users of at least on a moderate level so they could purposefully use the internet and especially those who have experience with online bookings, for example, have made any kind of booking online like ordering any tickets, booking a hotel or ordered flights. Users supposed to be familiar with the messaging app called WhatsUp, they should at least heard about this app to

understand what it is used for. WhatsUp was chosen because it is a popular and affordable free messaging and video calling app, which is a good combination of communication like messaging/chatting and phone/video call, which can be a quick and free solution to make international calls.

Potential participants were ascertained by questions of the recruitment questionnaire (Appendix A). To determine the potential WhatsUp users, additional questions about using a smartphone, mobile internet and ability to install mobile apps were asked in a questionnaire.

The general questionnaire (Appendix A) was presented to the users via google forms, so the users could answer the questions in comfortable conditions (Labbé & Laporte, 1986).

3.3.2 Tasks.

In order to be able to adequately assess the reaction and feelings of the user on two identical websites with different structures, it was necessary to come up with enough tasks for comparison (Frick, Elder, Hebb, Wang & Yoon, 2005). There should not be too few tasks in order to obtain enough information for analysis, at the same time, there should not be too many tasks, as this can tire the user in the execution time and distort the data for analysis. Based on requirements, 10 tasks in total were invented for this study.
The list of 10 tasks, as well as the minimum number of clicks on the way to the final access to information, are shown in Table 3.3.2.1.

The first column contains the ordinal number and description of the task, followed by the minimum number of clicks to complete the task for the 3-click version and for the version with free structure.

Table 3.3.2.1. 10 tasks and the minimal number of clicks for each task:

Task	Clicks in 3-click version	Clicks in free version
1. Find a description of the cheapest 3-bedroom flat in Oslo.	3	7
2. Write a message to the company via WhatsUp, you can find WhatsUp in contacts	3	6
3. Find the description of a 3 bedroom flat in Alanya for daily rent, 550 metres to the seaside	3	6
4. Find physical address of the company	1	5
5. Find the description of a 2-bedroom flat in Norway, Alesund, at Stueveien 5, for daily rent.	3	7
6. Find the description of the flat for daily rent which is 150 metres to the beach in Turkey, Side	3	6
7. Submit one answer on the questionnaire/poll situated under the cheapest villas of the page of Ukraine, Kiev	3	6
8. Find the description of 2 floors flat in Turkey, Istanbul	3	6
9. Find the description of the cheapest villa with hammam in Ukraine, Kiev	3	7
10. Find the description of the cheapest villa with pool in Turkey, Cappadocia	3	6

Each task was finished on both versions of the websites. To avoid the confusion during answering the evaluation questions, each of the tasks were executed firstly on a website based on the three-click rule and then on the website with free structure. To make it easier and more understandable for the user, a website based on the

three-click rule was mentioned during evaluation as “website number 1” and the website with free structure as “website number 2”.

3.3.3 Questions for evaluation

To make an effective comparison of the 2 websites, it was necessary to collect quality data (Martin, 2000). Users will evaluate each task (Table 3.3.2.1) one by one during the executing process. The evaluation should be done just after finishing each task on both website versions because users have fresh perception and the data is not distorted.

Evaluation of both websites (Appendix B) consists of three questions for each website version and one final question to determine user's preference.

Three main evaluation questions:

1. Your perception on how quickly did you finished this task
2. Your perception on how intuitive was the way to finish this task
3. Your perception on how easy was this task

Final question

1. In which grade did you like this version of the website?

Users have to choose the number from 1 to 5 from the measure scale. Where 1 is the lowest meaning and 5 is the highest meaning.
The meaning of the scale to determine how quickly users have finished the task: 1-very slowly and 5-very quickly.
The meaning of the scale to determine how intuitive was content on the website for users to finish the task: 1-not intuitive, 5-very intuitive.
The meaning of the scale to determine how easy the task was: 1-very difficult, 5-very easy.
The meaning of the scale for the final question: 1-totally dislike, 5-like a lot.

This questionnaire was presented to the participants in google forms (Appendix B, Appendix B1) and available online.

3.3.4 Equipment and tools

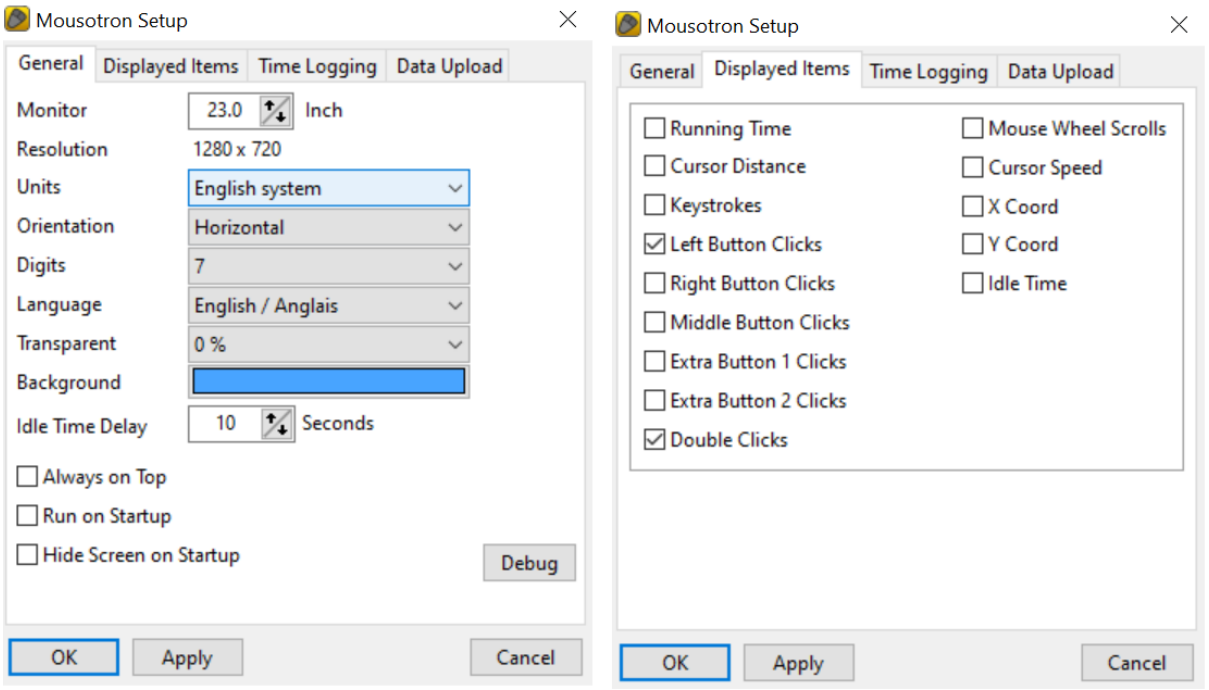
3.3.4.1 PC

For each research, participants were connected by remote connectivity software. To be able to connect, users needed pre-installed remote connectivity software, a mouse and internet connection.
The users testing was runned on PC with Windows 10 Home version, System: Processor Intel ® Core (™) i3-8130U CPU@ 2.20GHz 2.21 GHz, (RAM): 8,00 GB, x64-OS.

3.3.4.2 Counting clicks

As the central role in this study is dedicated to the mouse clicks and users experience, it was necessary to count the mouse clicks during the execution of the tasks. Manual counting could lead to high inaccuracy, that is why it was preferable to find the automatic solution to count the mouse clicks (Orehovački, 2011).
Mousotron- a light, free and affordable mouse activity monitor to keep statistics and number of mouse clicks which is available for downloads from reliable sources. It was the one of the programs which met the need and criterias to count the clicks during execution of the tasks. In addition it is in the list of the five of the most popular mouse activity monitors that fit perfectly the needs and aims of our project. The Mousotron program can be used to monitor time, distance, keystrokes, clicks, number of mousewheels, speed and coordinates of the mouse cursor. One of the important factors to choose Mousotron was the possibility to display only necessary items for monitoring (Tufte, 1985). Additional settings are available such as vertical or horizontal orientation, transparency and function “always on top”. Setup of the mousorton is shown on Figure 3.3.4.2.1
From two modes of orientation the Horizontal mode was chosen because in this way the monitoring program takes less space on the screen.
The field “double click” was also used in case of a user forgetting the task and has to return to the written task, clicked more then one time in a hurry or because of low internet connection. In order to determine the real quantity of real clicks the monitoring of double clicks was necessary.

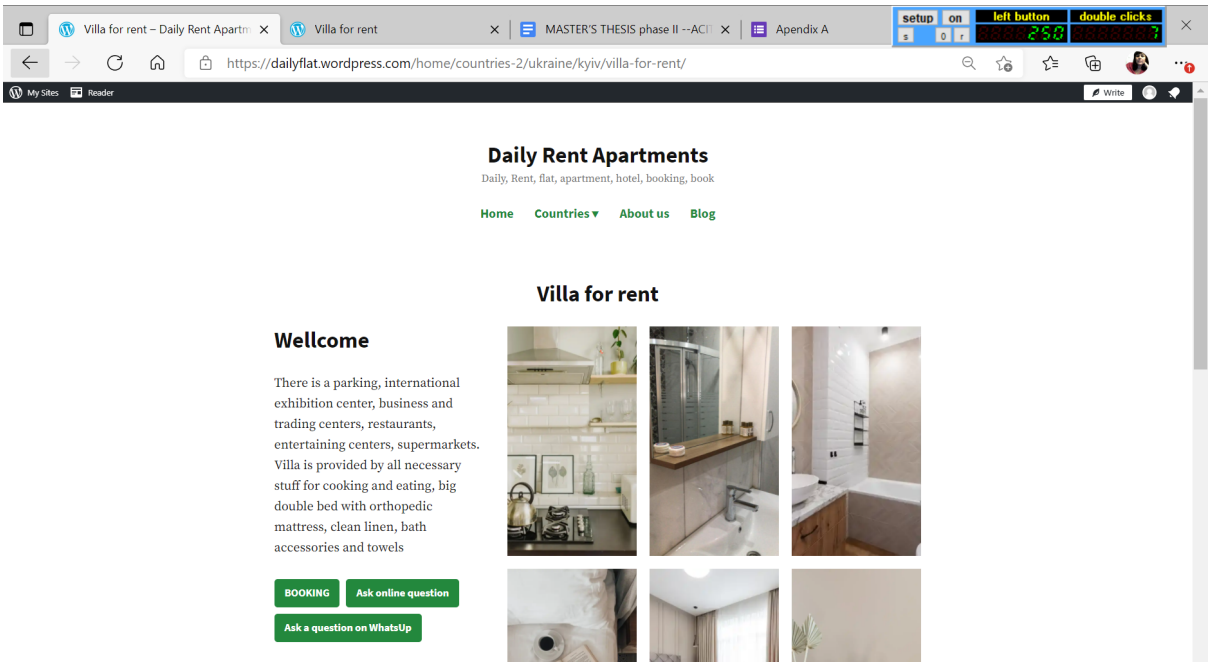
Figure 3.3.4.2.1 . Mousotron setup for research



There is no special “reset” button in Mousotron, the mouse clicks continue to count when the program is “on”. The button “off” is working like a pause. The mousotron continued to count the clicks during research from its start to its finish.

The screenshot of mousotron (Figure 3.3.4.2.2) during research. First in the browser is a website based on the three-click rule, the second one is a website with free structure. Mousotron is situated in the right upper corner so the observer can register the amount of clicks.

Figure 3.3.4.2.2 Screen during the research. Mousotron one the top right corner.



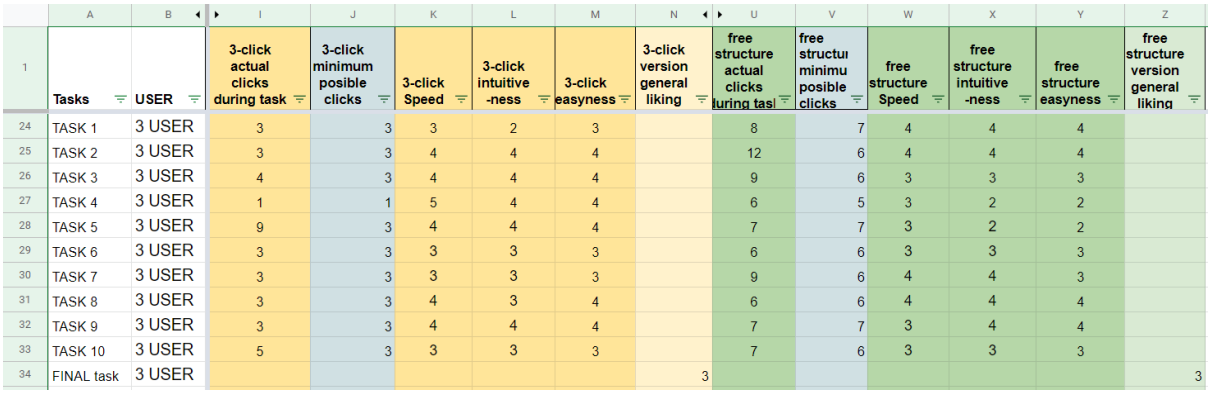
3.3.5 Function of observer.

The observer is a person who is present during research (Martin, 2000) to follow the process, effective data collection and to explain to the user the research process itself, as well as, if necessary, answer the questions that arise during the execution of the tasks. As the study itself is not fully automated, it was important to register the number of clicks during the execution of the task (Appendix D), to provide help in register the assessments of sensations on a perception scale from 1 to 5 for each version of the websites (Appendix B) and register the answers on final questions (Appendix B1). Observer also made some screen video records of the execution of the research of the randomly chosen users.
Since the questionnaires were in google form so the data stored automatically, however the registration of the actual clicks was collected manually with help of observer

The observer was responsible for collecting and storing the data. Part of the data was automatically registered and stored with help of google forms, but the number of actual mouse clicks had to be registered manually by the observer with help of form (Appendix D). Field notes seemed to be sufficient for this aim since the research itself was not complicated (Phillippi & Lauderdale, 2018). Later all data was

transferred from paper to excel file for easy reading and further analysis. (Figure 3.5.5.1)

Figure 3.5.5.1. Data registration in excel



	A	B	I	J	K	L	M	N	U	V	W	X	Y	Z
1	Tasks	USER	3-click actual clicks during task	3-click minimum posible clicks	3-click Speed	3-click intuitive -ness	3-click easyness	3-click version general liking	free structure actual clicks during tasl	free structui minimu posible clicks	free structure Speed	free structure intuitive -ness	free structure easyness	free structure version general liking
24	TASK 1	3 USER	3	3	3	2	3		8	7	4	4	4	
25	TASK 2	3 USER	3	3	4	4	4		12	6	4	4	4	
26	TASK 3	3 USER	4	3	4	4	4		9	6	3	3	3	
27	TASK 4	3 USER	1	1	5	4	4		6	5	3	2	2	
28	TASK 5	3 USER	9	3	4	4	4		7	7	3	2	2	
29	TASK 6	3 USER	3	3	3	3	3		6	6	3	3	3	
30	TASK 7	3 USER	3	3	3	3	3		9	6	4	4	3	
31	TASK 8	3 USER	3	3	4	3	4		6	6	4	4	4	
32	TASK 9	3 USER	3	3	4	4	4		7	7	3	4	4	
33	TASK 10	3 USER	5	3	3	3	3		7	6	3	3	3	
34	FINAL task	3 USER						3						3

3.3.6 Pilot test

Running a pilot test was necessary to determine some possible questions, inaccuracies and errors in the tasks and generally in research. The pilot test was runned with two users in the same style and conditions as the common user test would be executed.

As a result of the pilot test there were some changes - the wording of some tasks has been changed to make them clearer and more understandable for the users.

CHAPTER 4. RESULTS

The purpose of this research was to understand the relationships between Three-clicks rule and users' experience and preference. To achieve this - two interactive prototypes were created. The topic of the websites - apartments booking. Both websites have the same design but different structure. The results were based on a user experience survey on both website versions.
For readers convenience the results are described in three sections.

4.1 Participants demography.

Users were asked to complete a general questionnaire. This stage was important in order to select qualified participants. Users' demography is described in section 4.1.

Totally 20 users participated in this research, 12 females which is 60% of all participants and 8 males which is 40% of participants (Figure 4.1.1) in age from 16 to 59 years old (Figure 4.1.2).
45% of all participants are employed, 35% - studying and 20% staying home (Figure 4.1.3). 18 of 20 participants are experienced internet users and 2 users are moderate internet users. (Figure 4.1.4). 65% of all participants could think to book a flat instead of hotel on their next trip, 35% is not sure and have answered “maybe” and none of participants said “no” (Figure 4.1.6)
Half of participants chose live chat as a preferable way of communication when booking a flat. Not more than 35% would like to communicate by phone or email. (Figure 4.1.7)

All the participants could read and understand English (Figure 4.1.12), have already made online booking before (Figure 4.1.5), used smartphones, internet on it, know how to install new apps and used whatsUp before (Figures 4.1.8-4.1.13)

Figure 4.1.1 Gender of participants.

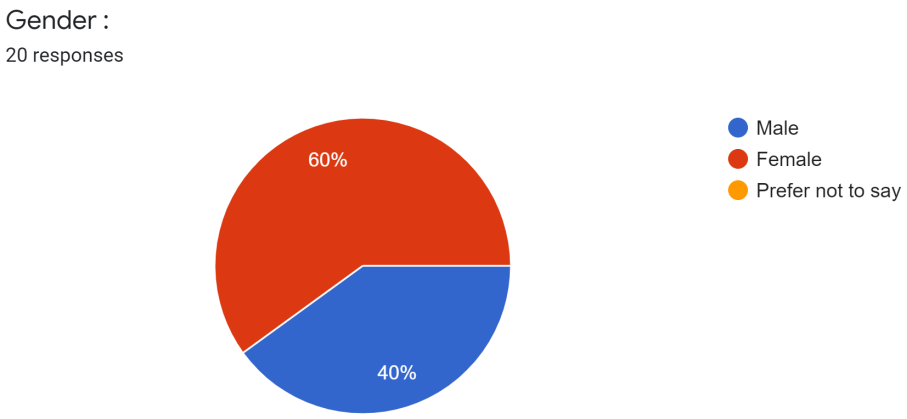


Figure 4.1.2 Age of participants.

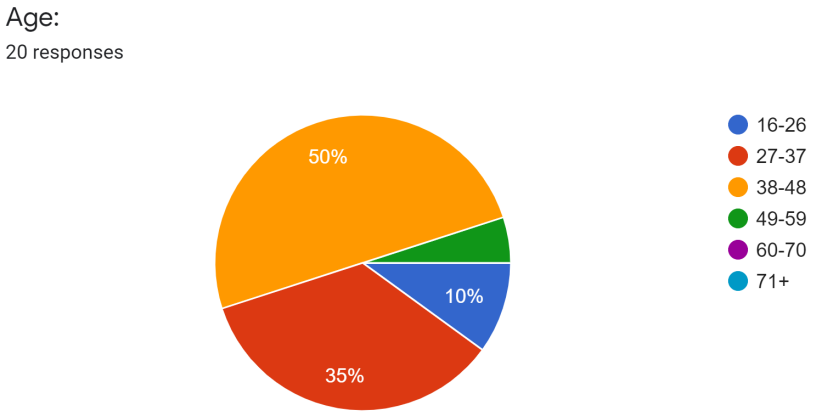


Figure 4.1.3 Occupation of participants.

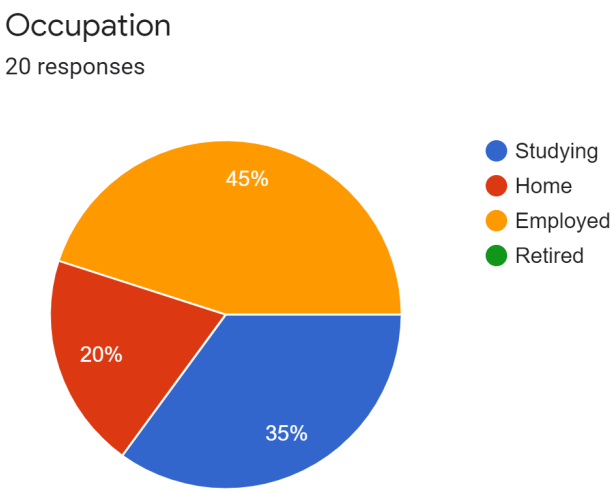


Figure 4.1.4. Internet user level of participants.

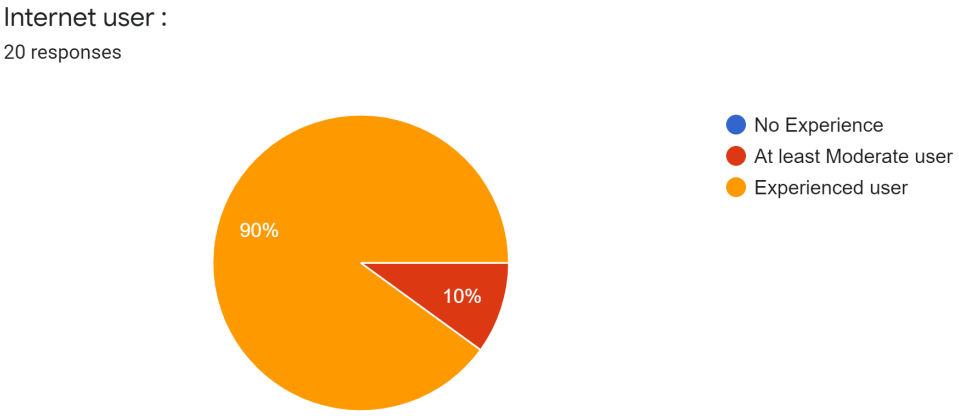


Figure 4.1.5. Participants which used online booking service before.

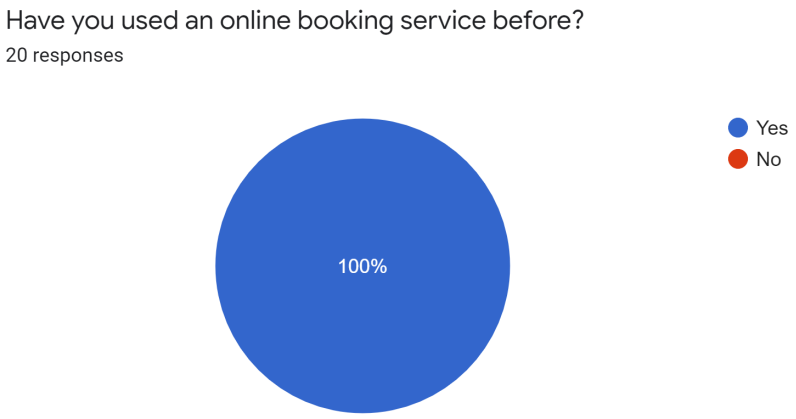


Figure 4.1.6. Participants which could think to book a flat instead hotel

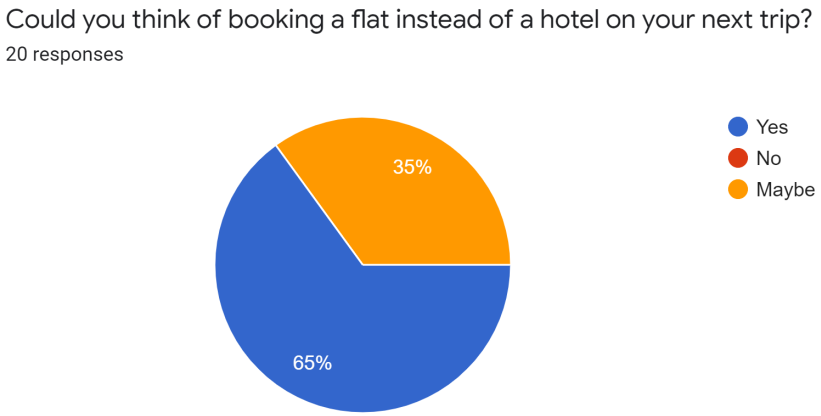


Figure 4.1.7. Preference in type of communication

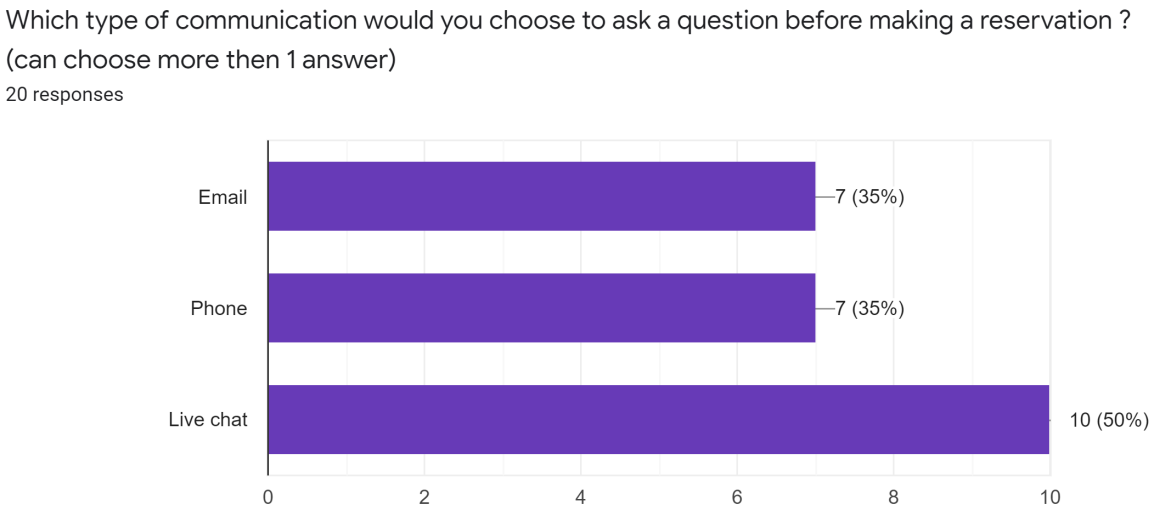


Figure 4.1.8. Users who used WhatsUp before.

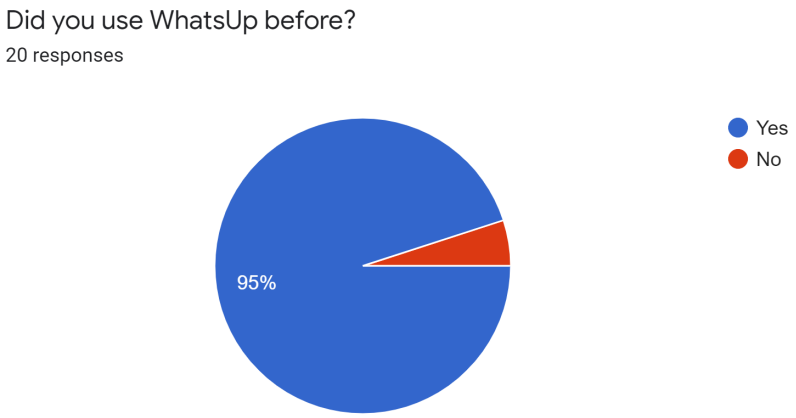


Figure 4.1.9. Users who use smartphones.

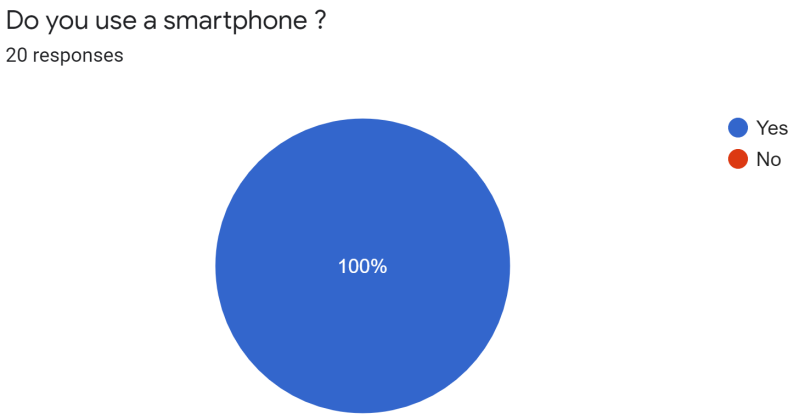


Figure 4.1.10. Users who use the internet on smartphones.

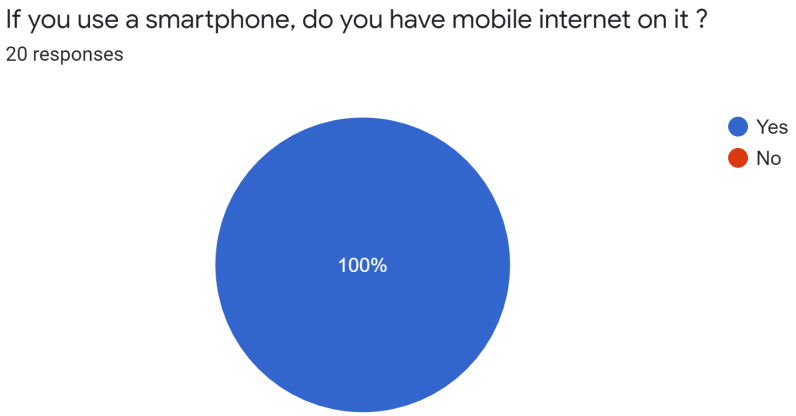


Figure 4.1.11. Users who can install apps on smartphones.

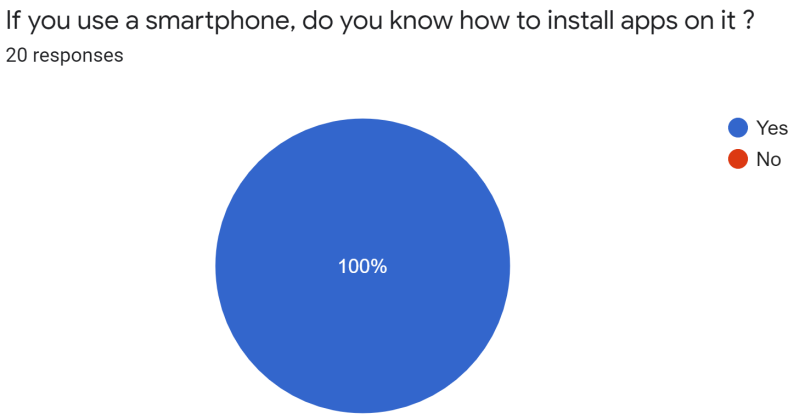
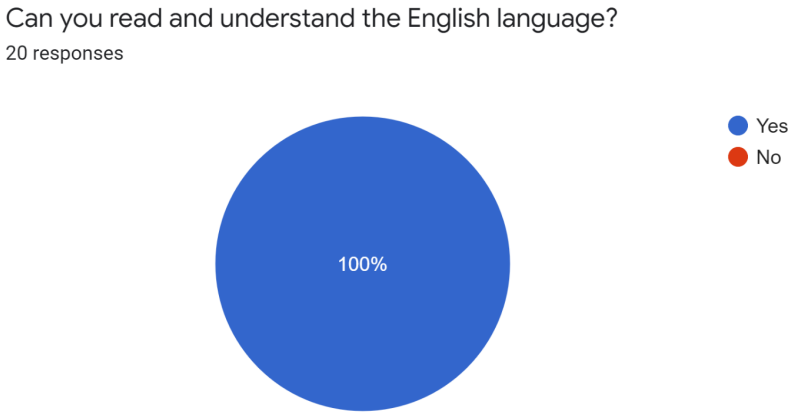


Figure 4.1.12. Users who can read and understand English.



4.2. Analysis using SPSS

Qualified users had to use and evaluate two versions of the websites. Each user had to complete 10 tasks on each website and rate it with the help of questionnaires (Appendix B, B1) Three main criteria are: how quickly the tasks are completed, how intuitive and easy the structure of each website.

To compare and analyse the results according to (Mayers, 2013) T-Test was used for data with normal distribution and Wilcoxon signed-rank test for the data which does not meet meet criteria for normal distribution (Appendix F)

To determine if the data is parametric (Mayers, 2013), quick tests for normal distribution were runned in SPSS. (Appendix E)
THis phase gives the comparative characteristics of user responses in order to determine user preferences, advantages and disadvantages, as well as the connection with the universal design and users experiences for both versions of websites.
(Mayers, 2013) proposed an independent analysis with help of SPSS and it is possible to make a comparison of the users ratings for usability of both versions of the websites.

The results are presented in the tables below separately for all 10 tasks. The screenshots of the tests in SPSS can be found in Appendix F.

4.2.1. Task 1.

Task 1 - Question 1 (Quickliness)
Wilcoxon signed-rank test showed that users have finished Task1 significantly more quickly at three click website version in comparison with website version based on free structure (Table 4.2.1.1-4.2.1.2)
Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome.
W = 9.00; z = -2.164, p = 0.030.

Task 1-Question 2 (Intuitiveness)
Wilcoxon signed-rank test showed that according to users' opinion the structure of the three click website version has no significant difference when compared to the free version website (Table 4.2.1.1-4.2.1.2).
Wilcoxon test statistic (Appendix F) confirms that there is no significant outcome.
W = 8.00; z = -1.780, p = 0.075.

Task 1-Question 3 (Easiness)
Wilcoxon signed-rank test showed that users perceived the structure of Task1 is more easy at three click website version in comparison with website version based on free structure (Table 4.2.1.1-4.2.1.2).
Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome.

W = 8.00; z = -1.780, p = 0.046.

Table 4.2.1.1 Task 1: Find a description of the cheapest 3-bedroom flat in Oslo.

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.30	0.979
	Free structure	20	3.60	1.231
Q2 Rating for intuitiveness	Three click	20	4.40	1.095
	Free structure	20	4.00	1.026
Q3 Rating for Easiness	Three click	20	4.45	0.945
	Free structure	20	3.85	0.933

Table 4.2.1.2 Task 1: Significance of outcome Wilcoxon signed-rank test for questions 1-3.

	W	Z (T)	p (2 tailed)
T1-Q1 Rating for quickliness	9.00	-2.164	0.030
T1-Q2 Rating for intuitiveness	8.00	-1.780	0.075
T1-Q3 Rating for easiness	11.00	-1.996	0.046

4.2.2. Task 2.

Task 2 - Question 1 (Quickliness)

Wilcoxon signed-rank test showed that users have finished Task2 significantly much more quickly at three click website version in comparison with website version based on free structure (Table 4.2.2.1-4.2.2.2)

Wilcoxon test statistic (Appendix F) confirms that we have a very significant outcome. W = 3.50; z = -3.377, p = 0.001.

Task 2-Question 2 (Intuitiveness)

Wilcoxon signed-rank test showed that according to users' opinion the structure of the three click website version is very intuitive and has a very significant difference when compared to the free version website (Table 4.2.2.1-4.2.2.2).

Wilcoxon test statistic (Appendix F) confirms that there is a very significant outcome. W = 0.00; z = -3.204, p = 0.001. (Table 4.2.2.2)

Table 4.2.2.1 Task 2: Write a message to the company via WhatsUp, you can find WhatsUp in contacts

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.55	0.945
	Free structure	20	3.10	1.210
Q2 Rating for intuitiveness	Three click	20	4.85	0.366
	Free structure	20	3.25	1.482
Q3 Rating for Easiness	Three click	20	4.85	0.366
	Free structure	20	3.40	1.095

Table 4.2.2.2 Task 2: Significance of outcome Wilcoxon signed-rank test for questions 1-2.

	W	Z (T)	p
T2-Q1 Rating for quickliness	3.50	-3.377	0.001
T2-Q2 Rating for intuitiveness	0.00	-3.204	0.001

Task 2-Question 3 (Easiness)

T-Test showed that users perceived the structure of this task as easier at the three click website version in comparison with website version based on free structure. T-test (Appendix F) confirms that we have a significant outcome. (Table 4.2.2.3) t (19) = 5.445, p = 0.001.

Table 4.2.2.3 Task 2: Significance of outcome T-Test for question 3.

	t (19)	p
T2-Q3 Rating for easiness	5.445	0.001

4.2.3. Task 3.

Task 3 - Question 1 (Quickliness)

Wilcoxon signed-rank test showed that users have finished Task3 significantly more quickly at three click website version in comparison with website version based on free structure. (Table 4.2.3.1-4.2.3.2)

Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome. W = 0.00; z = -3.373, p = 0.001.

Task 3-Question 2 (Intuitiveness)

Wilcoxon signed-rank test showed that according to users' opinion the structure of the three click website version has a significant difference in rating for intuitiveness when compared to the free version website. (Table 4.2.3.1-4.2.3.2)

Wilcoxon test statistic (Appendix F) confirms that there is a significant outcome. W = 0.00; z = -3.407, p = 0.001.

Task 3-Question 3 (Easiness)

Wilcoxon signed-rank test points that during execution of this task - users have perceived the structure of the three click website version as easier than the website version based on free structure. (Table 4.2.3.1-4.2.3.2)

Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome. W = 0.00; z = -3.002, p = 0.003.

Table 4.2.3.1 Task 3: Find the description of a 3 bedroom flat in Alanya for daily rent, 550 metres to the seaside

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.80	0.523
	Free structure	20	3.65	1.040
Q2 Rating for intuitiveness	Three click	20	4.80	0.410
	Free structure	20	3.80	0.894
Q3 Rating for Easiness	Three click	20	4.80	0.523
	Free structure	20	3.90	1.119

Table 4.2.3.2 Task 3: Significance of outcome Wilcoxon signed-rank test for questions 1-3.

	W	Z	p
T3-Q1 Rating for quickliness	0.00	-3.373	0.001
T3-Q2 Rating for intuitiveness	0.00	-3.407	0.001
T3-Q3 Rating for easiness	0.00	-3.002	0.003

4.2.4. Task 4.

Task 4 - Question 1 (Quickliness)
Wilcoxon signed-rank test showed that users have finished this task significantly more quickly at three click website version in comparison with website version based on free structure. (Table 4.2.4.1-4.2.4.3)
Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome.
W = 0.00; z = -3.782, p = 0.001.

Task 4-Question 2 (Intuitiveness)
T-Test showed that users perceived the structure of this task as more intuitive at the three click website version in comparison with website version based on free structure. (Table 4.2.4.1-4.2.4.3)
T-test (Appendix F) confirms that we have a significant outcome.
t (19) = 6.601, p = 0.001.

Task 4-Question 3 (Easiness)
T-Test showed that users perceived the structure of this task as easier at the three click website version in comparison with website version based on free structure.
T-test (Appendix F) confirms that we have a significant outcome. (Table 4.2.4.1 - 4.2.4.3)
t (19) = 6.708, p = 0.001.

Table 4.2.4.1 Task 4: Find physical address of the company

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.95	0.224
	Free structure	20	3.05	1.234
Q2 Rating for intuitiveness	Three click	20	4.85	0.366
	Free structure	20	3.30	1.174
Q3 Rating for Easiness	Three click	20	4.90	0.308
	Free structure	20	3.40	1.046

Table 4.2.4.2 Task 4: Significance of outcome Wilcoxon signed-rank test for questions 1.

	W	Z	p
T4-Q1 Rating for quickliness	0.00	-3.782	0.001

Table 4.2.4.3 Task 4: Significance of outcome T-Test for questions 2-3

	t (19)	p
T4-Q2 Rating for intuitiveness	6.601	0.001
T4-Q3 Rating for easiness	6.708	0.001

4.2.5. Task 5.

Task 5 - Question 1 (Quickliness)

Wilcoxon signed-rank test showed that users have finished this task significantly more quickly at three click website version in comparison with website version based on free structure. (Table 4.2.5.1-4.2.5.2)

Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome. W = 7.00; z = -3.474, p = 0.001.

Task 5-Question 2 (Intuitiveness)

Wilcoxon signed-rank test showed that according to users' opinion the structure of the three click website version is significantly more intuitive in comparison to the website with free structure. (Table 4.2.5.1-4.2.5.2)

Wilcoxon test statistic (Appendix F) confirms that there is a significant outcome.

W = 6.50; z = -3.231, p = 0.001.

Task 5-Question 3 (Easiness)

Wilcoxon signed-rank test points that during execution of this task - users have perceived the structure of the three click website version as easier than the website version based on free structure. (Table 4.2.5.1-4.2.5.2)

Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome.

W = 6.00; z = -3.216, p = 0.003.

Table 4.2.5.1 Task 5: Find the description of a 2-bedroom flat in Norway, Alesund, at Stueveien 5, for daily rent.

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.70	0.470
	Free structure	20	3.70	0.733
Q2 Rating for intuitiveness	Three click	20	4.70	0.571
	Free structure	20	3.85	0.933
Q3 Rating for Easiness	Three click	20	4.85	0.366
	Free structure	20	3.95	0.887

Table 4.2.5.2 Task 5: Significance of outcome Wilcoxon signed-rank test for questions 1-3.

	W	Z	p
T5-Q1 Rating for quickliness	7.00	-3.474	0.001
T5-Q2 Rating for intuitiveness	6.50	-3.231	0.001
T5-Q3 Rating for easiness	6.00	-3.216	0.001

4.2.6. Task 6.

Task 6 - Question 1 (Quickliness)
Wilcoxon signed-rank test showed that users have finished this task significantly more quickly at three click website version in comparison with website version based on free structure. (Table 4.2.6.1-4.2.6.2)
Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome.
W = 5.00; z = -3.208, p = 0.001.

Task 6-Question 2 (Intuitiveness)
Wilcoxon signed-rank test showed that according to users' opinion the structure of the three click website version is significantly more intuitive in comparison to the website with free structure. (Table 4.2.6.1-4.2.6.2)
Wilcoxon test statistic (Appendix F) confirms that there is a significant outcome.
W = 11.00; z = -2.138, p = 0.033.

Task 6-Question 3 (Easiness)
Wilcoxon signed-rank test points that during execution of this task - users have not perceived the big difference in structure of the three click website version and the website version based on free structure (Table 4.2.6.1-4.2.6.2).
Wilcoxon test statistic (Appendix F) confirms that there is no significant outcome.
W = 16.50; z = -1.890, p = 0.059.

Table 4.2.6.1 Task 6: Find the description of the flat for daily rent which is 150 metres to the beach in Turkey, Side

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.75	0.639
	Free structure	20	3.65	1.040
Q2 Rating for intuitiveness	Three click	20	4.55	0.759
	Free structure	20	4.10	0.968
Q3 Rating for Easiness	Three click	20	4.50	0.827
	Free structure	20	4.10	0.788

Table 4.2.6.2 Task 6: Significance of outcome Wilcoxon signed-rank test for questions 1-3.

	W	Z	p
T6-Q1 Rating for quickliness	5.00	-3.208	0.001
T6-Q2 Rating for intuitiveness	11.00	-2.138	0.033
T6-Q3 Rating for easiness	16.50	-1.890	0.059

4.2.7. Task 7.

Task 7 - Question 1 (Quickliness)
Wilcoxon signed-rank test showed that users finished this task significantly more quickly at three click website version in comparison with website version based on free structure (Table 4.2.7.1-4.2.7.2)
Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome.
W = 4.50; z = -3.106, p = 0.002.

Task 7-Question 2 (Intuitiveness)
Wilcoxon signed-rank test showed that according to users' opinion the structure of the three click website version is significantly more intuitive in comparison to the website with free structure (Table 4.2.7.1-4.2.7.2).
Wilcoxon test statistic (Appendix F) confirms that there is a significant outcome.
W = 4.00; z = -2.970, p = 0.003.

Task 7-Question 3 (Easiness)
Wilcoxon signed-rank test points that during execution of this task - users have perceived the structure of the three click website version as easier than the website version based on free structure (Table 4.2.7.1-4.2.7.2).
Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome.
W = 0.00; z = -3.025, p = 0.002.

Table 4.2.7.1 Task 7: Submit one answer on the questionnaire/poll situated under the cheapest villas of the page of Ukraine, Kiev

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.60	0.598
	Free structure	20	3.70	0.865
Q2 Rating for intuitiveness	Three click	20	4.70	0.571
	Free structure	20	3.80	0.834
Q3 Rating for Easiness	Three click	20	4.50	0.607
	Free structure	20	3.70	0.865

Table 4.2.7.2 Task 7: Significance of outcome Wilcoxon signed-rank test for questions 1-3.

	W	Z	p
T7-Q1 Rating for quickliness	4.50	-3.106	0.002
T7-Q2 Rating for intuitiveness	4.00	-2.970	0.003
T7-Q3 Rating for easiness	0.00	-3.025	0.002

4.2.8. Task 8.

Task 8 - Question 1 (Quickliness)

Wilcoxon signed-rank test showed that there is no significant difference between both website versions (Table 4.2.8.1-4.2.8.2).

(Appendix F) confirms that there is no significant outcome.

W = 16.50; z = -1.604, p = 0.109.

Task 8-Question 2 (Intuitiveness)

Wilcoxon signed-rank test showed that according to users' opinion the structure of the three click website version has no significant difference when compared to the free version website (Table 4.2.8.1-4.2.8.2).

Wilcoxon test statistic (Appendix F) confirms that there is no significant outcome.

W = 12.00; z = -0.378, p = 0.705.

Task 8-Question 3 (Easiness)

Wilcoxon signed-rank test showed that users rated both versions equally. The mean for both versions is 4.35 (Table 4.2.8.1-4.2.8.2).

Wilcoxon test statistic (Appendix F) confirms that the rating has the same mean.

W = 10.50; z = 0.001, p = 1.000.

Table 4.2.8.1 Task 8: Find the description of 2 floors flat in Turkey, Istanbul

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.40	0.681
	Free structure	20	4.10	0.968
Q2 Rating for intuitiveness	Three click	20	4.25	0.851
	Free structure	20	4.30	0.865
Q3 Rating for Easiness	Three click	20	4.35	0.671
	Free structure	20	4.35	0.745

Table 4.2.8.2 Task 8: Significance of outcome Wilcoxon signed-rank test for questions 1-3.

	W	Z	p
T8-Q1 Rating for quickliness	16.50	-1.604	0.109
T8-Q2 Rating for intuitiveness	12.00	-0.378	0.705
T8-Q3 Rating for easiness	10.50	0.001	1.000

4.2.9. Task 9.

Task 9 - Question 1 (Quickliness)

Wilcoxon signed-rank test showed that there is no significant difference between both website versions (Table 4.2.9.1-4.2.9.2).

(Appendix F) confirms that there is no significant outcome.

W = 12.00; z = -1.642, p = 0.101.

Task 9-Question 2 (Intuitiveness)

Wilcoxon signed-rank test showed that according to users' opinion the structure of the three click website version has no significant difference when compared to the free version website (Table 4.2.9.1-4.2.9.2).

Wilcoxon test statistic (Appendix F) confirms that there is no significant outcome.

W = 16.00; z = -0.284, p = 0.776.

Task 9-Question 3 (Easiness)

Wilcoxon signed-rank test showed that there is no significant difference in rating of both website versions (Table 4.2.9.1-4.2.9.2)..

Wilcoxon test statistic (Appendix F) confirms that the rating has the same mean.

W = 22.50; z = -0.540, p = 0.589.

Table 4.2.9.1 Task 9: Find the description of the cheapest villa with hammam in Ukraine, Kiev

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.40	0.681
	Free structure	20	3.95	1.234
Q2 Rating for intuitiveness	Three click	20	4.40	0.940
	Free structure	20	4.30	1.129
Q3 Rating for Easiness	Three click	20	4.40	0.754
	Free structure	20	4.25	0.967

Table 4.2.9.2 Task 9: Significance of outcome Wilcoxon signed-rank test for questions 1-3.

	W	Z	p
T9-Q1 Rating for quickliness	12.00	-1.642	0.101
T9-Q2 Rating for intuitiveness	16.00	-0.284	0.776
T9-Q3 Rating for easiness	22.50	-0.540	0.589

4.2.10. Task 10.

Task 10 - Question 1 (Quickliness)

Wilcoxon signed-rank test showed that users finished this task significantly more quickly at three click website version in comparison with website version based on free structure (Table 4.2.10.1-4.2.10.2).

Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome. W = 10.00; z = -2.578, p = 0.010.

Task 10-Question 2 (Intuitiveness)

Wilcoxon signed-rank test showed that according to users' opinion the structure of the three click website version is significantly more intuitive in comparison to the website with free structure (Table 4.2.10.1-4.2.10.2).

Wilcoxon test statistic (Appendix F) confirms that there is a significant outcome. W = 4.00; z = -2.070, p = 0.038.

Task 10-Question 3 (Easiness)

Wilcoxon signed-rank test points that during execution of this task - users have perceived the structure of the three click website version as easier than the website version based on free structure (Table 4.2.10.1-4.2.10.2).

Wilcoxon test statistic (Appendix F) confirms that we have a significant outcome. W = 10.00; z = -2.392, p = 0.017.

Table 4.2.10.1 Task 10: Find the description of the cheapest villa with pool in Turkey, Cappadocia

	website version	N	Mean	Std. Deviation
Q1 Rating for quickliness	Three click	20	4.55	0.686
	Free structure	20	3.75	1.251
Q2 Rating for intuitiveness	Three click	20	4.45	0.826
	Free structure	20	3.85	1.268
Q3 Rating for Easiness	Three click	20	4.55	0.686
	Free structure	20	4.00	0.795

Table 4.2.10.2 Task 10: Significance of outcome Wilcoxon signed-rank test for questions 1-3.

	W	Z	p
T10-Q1 Rating for quickliness	10.00	-2.578	0.010
T10-Q2 Rating for intuitiveness	13.50	-2.070	0.038
T10-Q3 Rating for easiness	10.00	-2.392	0.017

4.2.11. Final Question.

Final Question was to determine users preference.
Wilcoxon signed-rank test as a result showing a significant difference in users preference. Most of the users prefer a website based on the “Three-click rule” (Table 4.2.11.1-4.2.11.2)
Wilcoxon test statistic (Appendix F) confirms that there is a significant outcome.
W = 5.00; z = -3.331, p = 0.001.

Table 4.2.11.1 Final Question:

	website version	N	Mean	Std. Deviation
Final Question General liking	Three click	20	4.65	0.671
	Free structure	20	3.40	0.940

Table 4.2.11.2 Final Question: Significance of outcome Wilcoxon signed-rank test.

	W	Z	p
FQ General liking	5.00	-3.331	0.001

4.3. Accuracy and number of clicks.

In this phase the number of minimal possible mouse clicks is compared to actual clicks done during execution of each task.

This comparison will help to identify erroneous clicks that users made in the process of completing tasks.
By comparing the number of clicks on different versions of site prototypes, we will be able to determine on which version the users made fewer errors.

The results are presented in the form of graphs. Vertical axis represents the number of clicks and the horizontal axis represents the number of users. There are 20 users total and each dot on the horizontal axis represents one user.

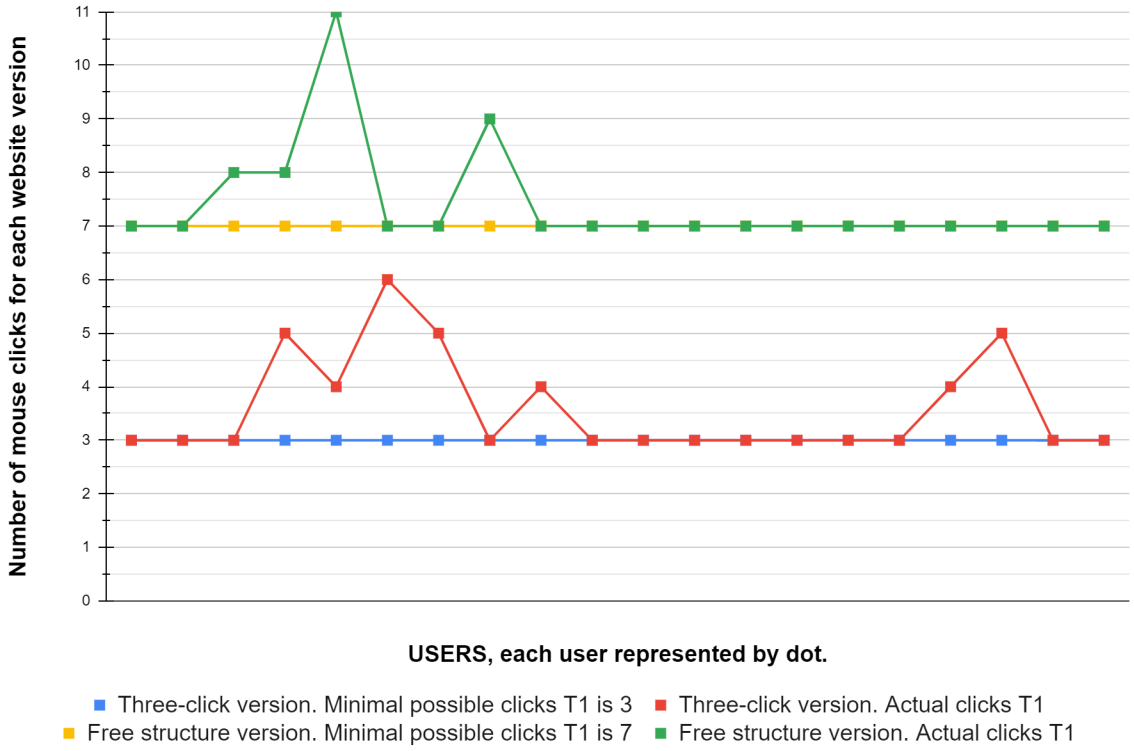
There are 10 separate graphs, representing each task, and each graph has 4 lines, two of lines (yellow and green) represent the number of minimal and actual clicks on the website with free structure, and two of lines (blue and red) represent the number of minimal and actual clicks on the website based on the “Three-clicks rule”.

4.3.1. Task 1.

Website based on “Three-clicks rule”. Minimal amount of clicks: 3.
13 users from 20 have managed to finish Task1 without any mistake and within 3 clicks. 3 users finished the task within 4 clicks, 2 users had to make 5 clicks to finish Task1 and one user used 6 clicks to finish the task (Figure 4.3.1).

Website with free structure. Minimal amount of clicks: 7.
16 of 20 users have finished Task1 without mistakes.
2 users finished with 8 clicks, one with 9 and one with 11 clicks (Figure 4.3.1).

Figure 4.3.1. Minimal clicks VS actual clicks Task 1, both website versions.



4.3.2. Task 2.

Website based on “Three clicks rule”. Minimal amount of clicks: 3.

15 users from 20 have finished the task without any mistake and within 3 clicks.

1 user finished task within 4 clicks, one with 5 clicks,

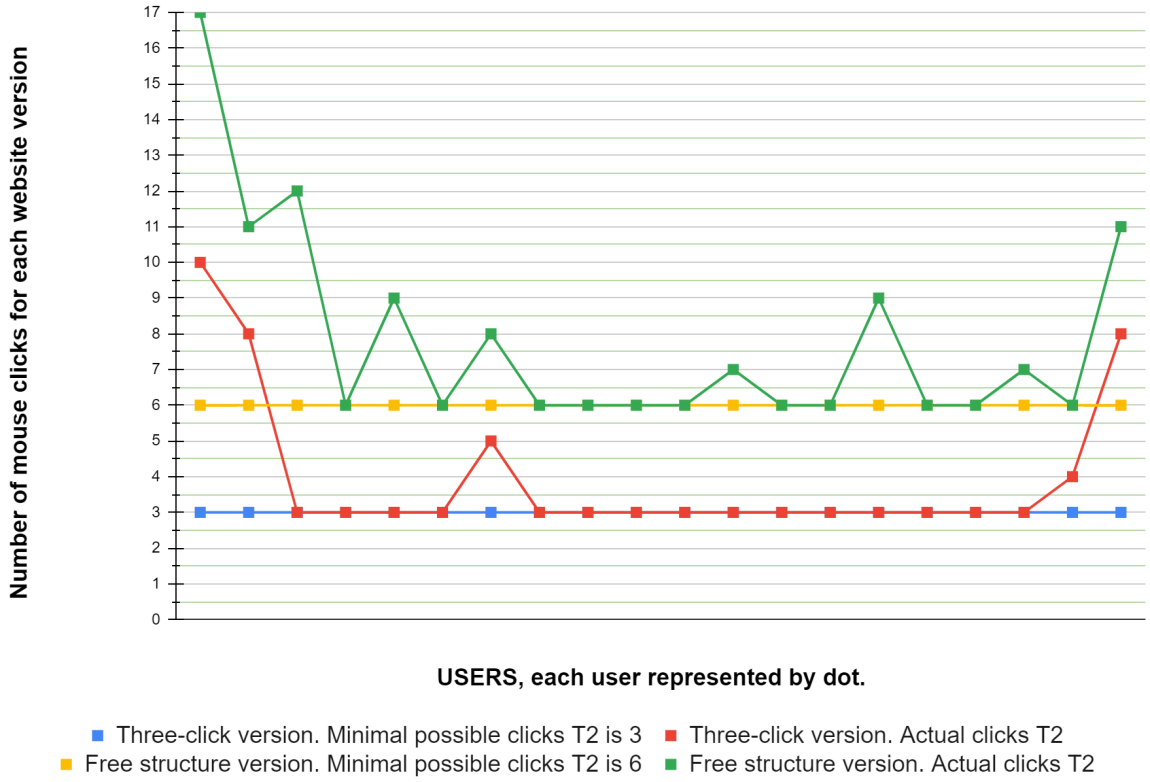
2 users have made 8 clicks and one user have made 10 clicks (Figure 4.3.2)

Website with free structure. Minimal amount of clicks: 6.

11 users from 20 have managed to finish Task1 without any mistake and within 6 clicks.

2 users finished with 7 clicks, one with 8, two with 9 clicks, two with 11 clicks, one with 12 clicks and one with 17 clicks. (Figure 4.3.2)

Figure 4.3.2. Minimal clicks VS actual clicks Task 2, both website versions.



4.3.3. Task 3.

Website based on “Three-clicks rule”. Minimal amount of clicks: 3.

16 users from 20 have finished the task without any mistake and within 3 clicks.

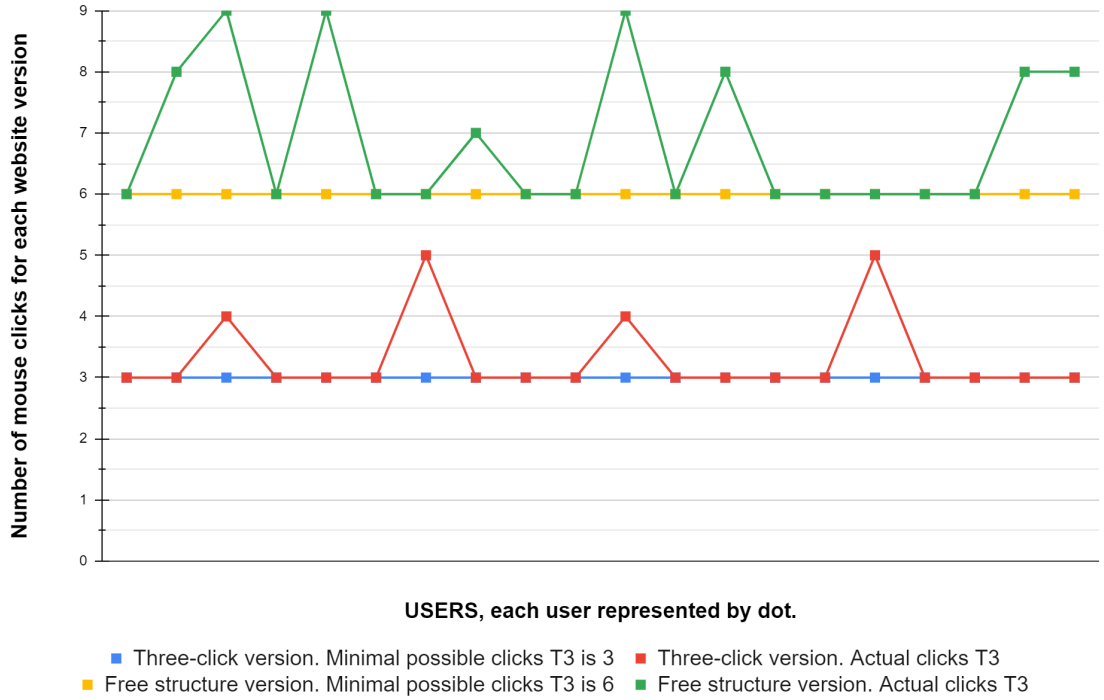
2 user finished task within 4 clicks and 2 with 5 clicks (Figure 4.3.3)

Website with free structure. Minimal amount of clicks: 6.

12 users from 20 have finished task without any mistake and within 6 clicks, 1 user finished task within 7 clicks, four finished with 8 clicks,

3 users have made 9 clicks (Figure 4.3.3)

Figure 4.3.3. Minimal clicks VS actual clicks Task 3, both website versions.



4.3.4. Task 4.

Website based on “Three-clicks rule”. Minimal amount of clicks: 1.

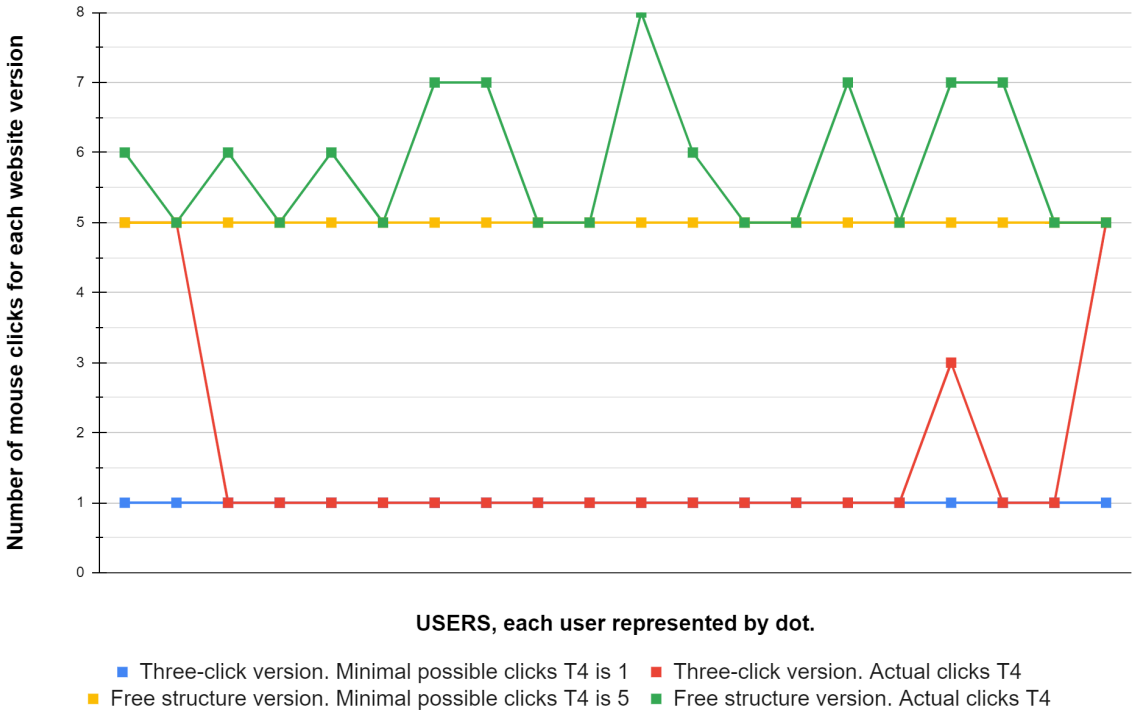
16 users from 20 have finished the task without any mistake - within 1 click.

one user finished task within 3 clicks and 3 with 5 clicks (Figure 4.3.4)

Website with free structure. Minimal amount of clicks: 5.

10 users from 20 have finished the task without any mistake and within 5 clicks, 4 users finished the task with 6 clicks, five with 7 and one with 8 clicks (Figure 4.3.4).

Figure 4.3.4. Minimal clicks VS actual clicks Task 4, both website versions.



4.3.5. Task 5.

Website based on “Three-clicks rule”. Minimal amount of clicks: 3.

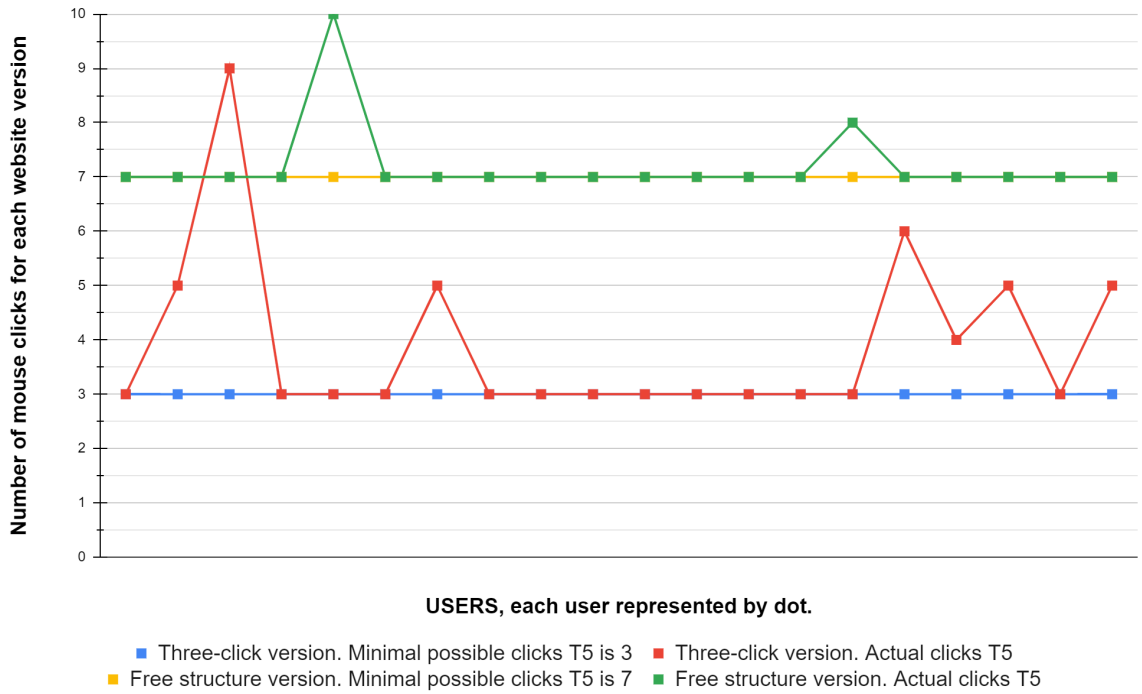
13 users from 20 have finished the task without any mistake - within 3 clicks.

one user finished task within 4 clicks, four with 5 clicks, one with 6 and one with 9 (Figure 4.3.5)

Website with free structure. Minimal amount of clicks: 7.

18 users from 20 have finished the task without any mistake and within 7 clicks, one user finished the task with 8 clicks and one with 10 (Figure 4.3.5).

Figure 4.3.5. Minimal clicks VS actual clicks Task 5, both website versions.



4.3.6. Task 6.

Website based on “Three-clicks rule”. Minimal amount of clicks: 3.

13 users from 20 have finished the task without any mistake - within 3 clicks.

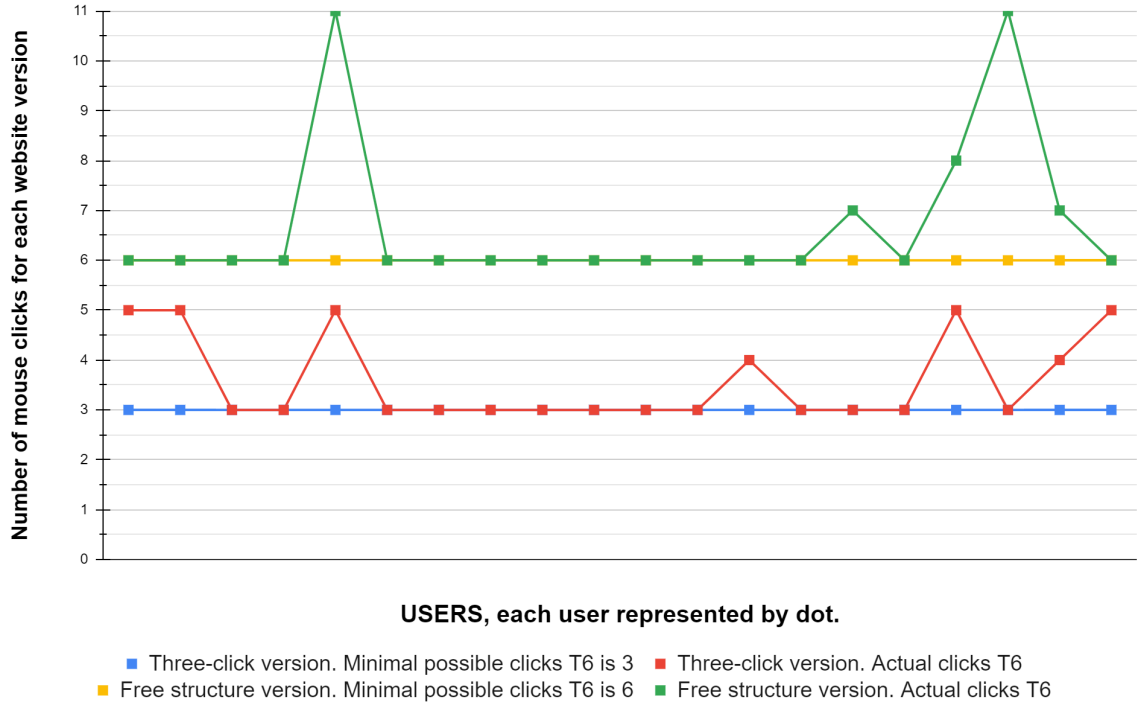
two users made 4 clicks and five mede 5 clicks (Figure 4.3.6)

Website with free structure. Minimal amount of clicks: 6.

15 users from 20 have finished the task without any mistake and within 6 clicks,

two users finished the task with 7 clicks, one with 8 and two with 11 (Figure 4.3.6).

Figure 4.3.6. Minimal clicks VS actual clicks Task 6, both website versions.



4.3.7. Task 7.

Website based on “Three-clicks rule”. Minimal amount of clicks: 3.

8 users from 20 have finished the task without any mistake - within 3 clicks.

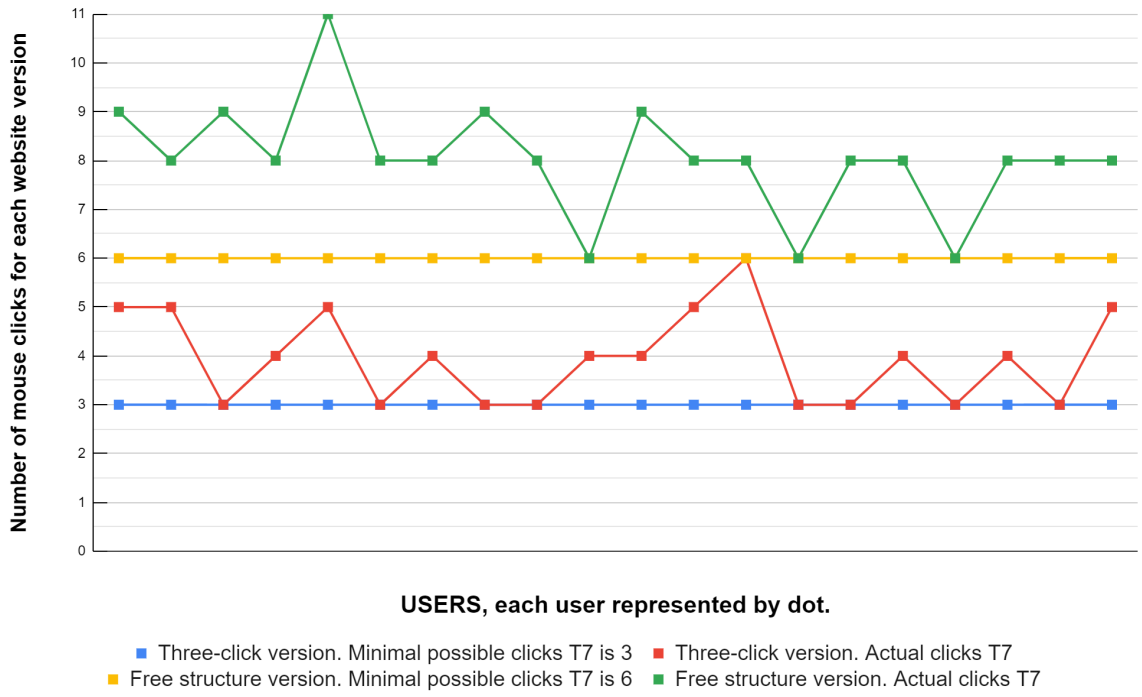
six users made 4 clicks, five made 5 clicks and one made 6 clicks (Figure 4.3.7)

Website with free structure. Minimal amount of clicks: 6.

3 users from 20 have finished the task without any mistake and within 6 clicks,

12 users finished the task with 8 clicks, three with 9 and two with 11 (Figure 4.3.7).

Figure 4.3.7. Minimal clicks VS actual clicks Task 7, both website versions.



4.3.8. Task 8.

Website based on “Three-click rule”. Minimal amount of clicks: 3.

14 users from 20 have finished the task without any mistake - within 3 clicks.

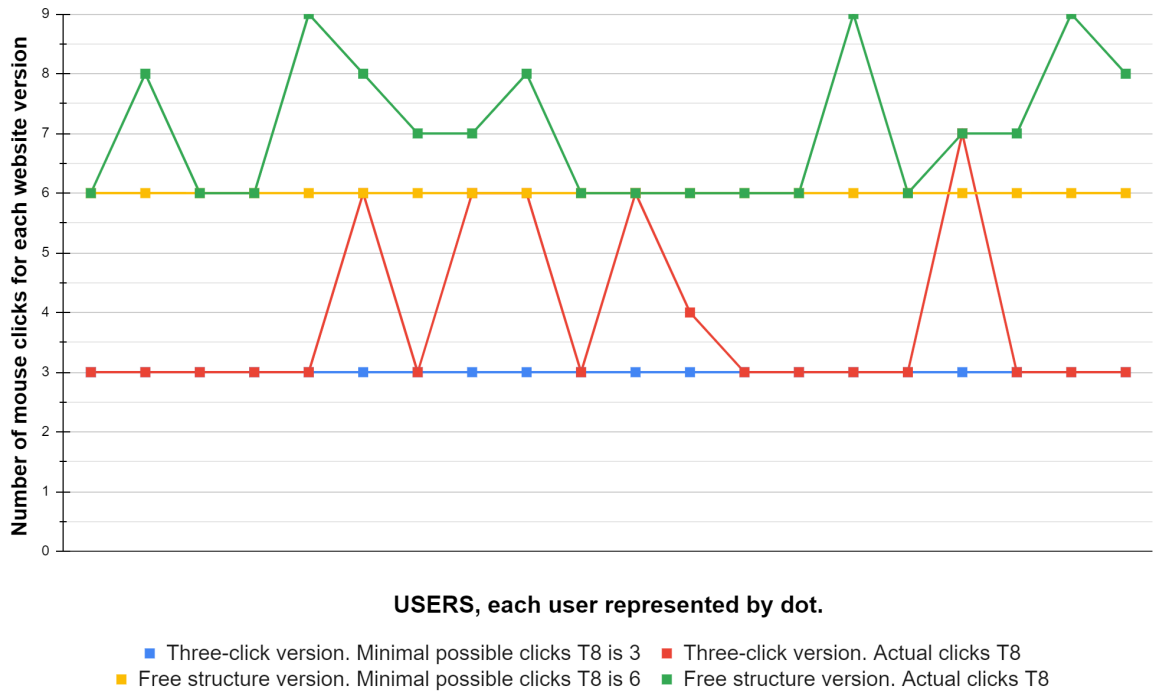
one with 4 clicks, four users made 6 clicks and one made 7 clicks (Figure 4.3.8)

Website with free structure. Minimal amount of clicks: 6.

9 users from 20 have finished the task without any mistake and within 6 clicks,

4 users finished the task with 7 clicks, 4 with 8 clicks and three with 9 (Figure 4.3.8).

Figure 4.3.8. Minimal clicks VS actual clicks Task 8, both website versions.



4.3.9. Task 9.

Website based on “Three-clicks rule”. Minimal amount of clicks: 3.

14 users from 20 have finished the task without any mistake - within 3 clicks.

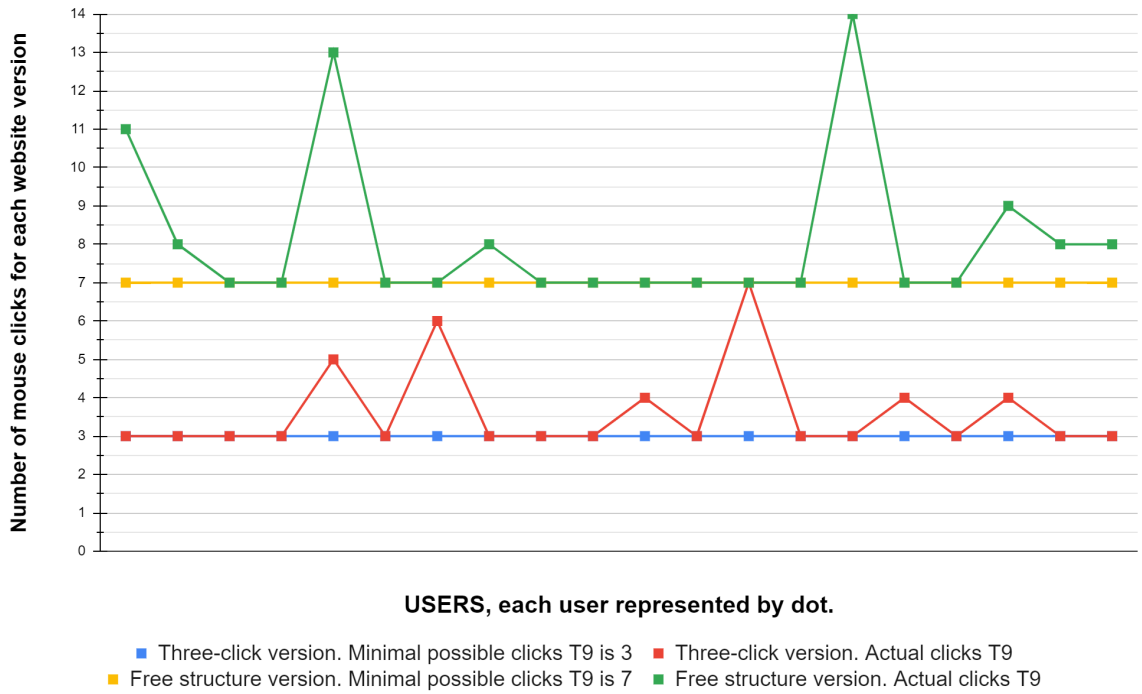
three with 4 clicks, one with 5, one with 6 and one made 7 clicks (Figure 4.3.9)

Website with free structure. Minimal amount of clicks: 7.

12 users from 20 have finished the task without any mistake and within 7 clicks,

4 users finished the task with 8 clicks, one with 9, one with 11, one with 13 and one with 14 clicks (Figure 4.3.9).

Figure 4.3.9. Minimal clicks VS actual clicks Task 9, both website versions.



4.3.10. Task 10.

Website based on “Three-clicks rule”. Minimal amount of clicks: 3.

13 users from 20 have finished the task without any mistake - within 3 clicks.

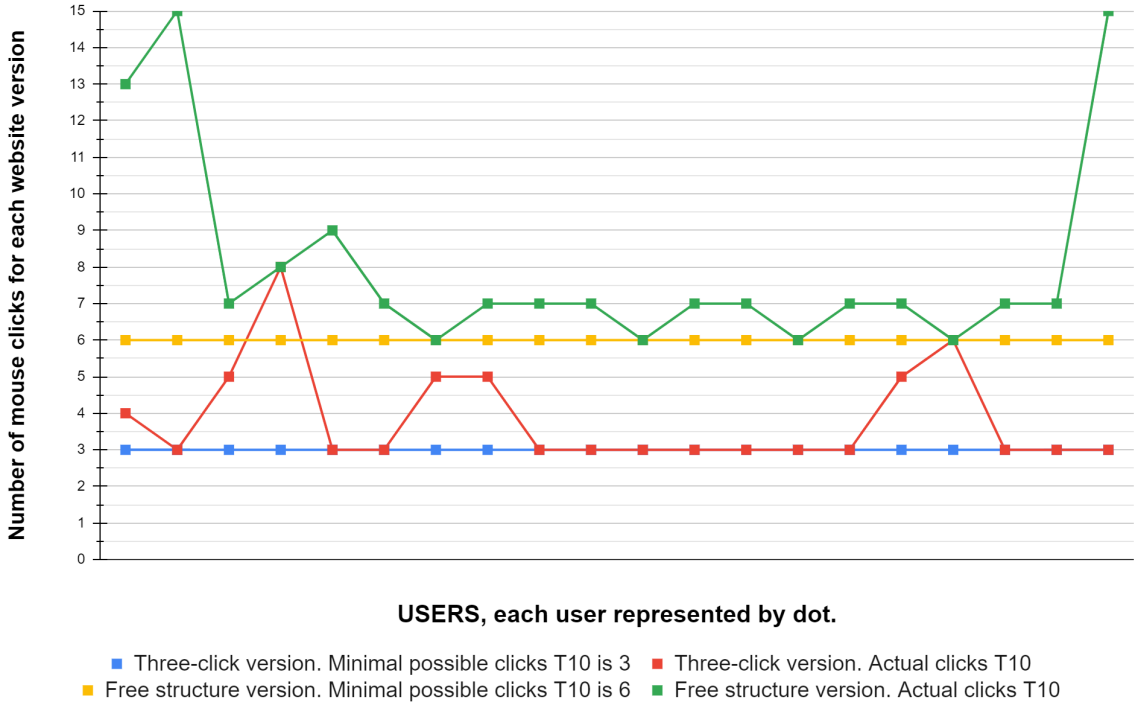
one made 4 clicks, four made 5, one 6 and one 8 clicks (Figure 4.3.10)

Website with free structure. Minimal amount of clicks: 6.

4 users from 20 have finished the task without any mistake and within 6 clicks,

11 users finished the task with 7 clicks, one with 8, one with 9, one with 13 and one with 15 clicks (Figure 4.3.10).

Figure 4.3.10. Minimal clicks VS actual clicks Task 10, both website versions.



CHAPTER 5. DISCUSSION.

The aim of the research was: an usability and Universal Design investigation of the three-click rule for navigation.

5.1 Participants.

To find the answers to the main questions described in the introduction chapter - real users were involved. Both - males and females in age from 16 to 59 years old have participated in this experimental study.
Participants have different occupations and could think of booking a flat instead of a hotel on their next trip. All of the participants understand English, are able to use smartphones, internet, have booked online previously, know how to install apps on smartphones and are familiar with WhatsUp. The detailed participants demography described in section 4.1.

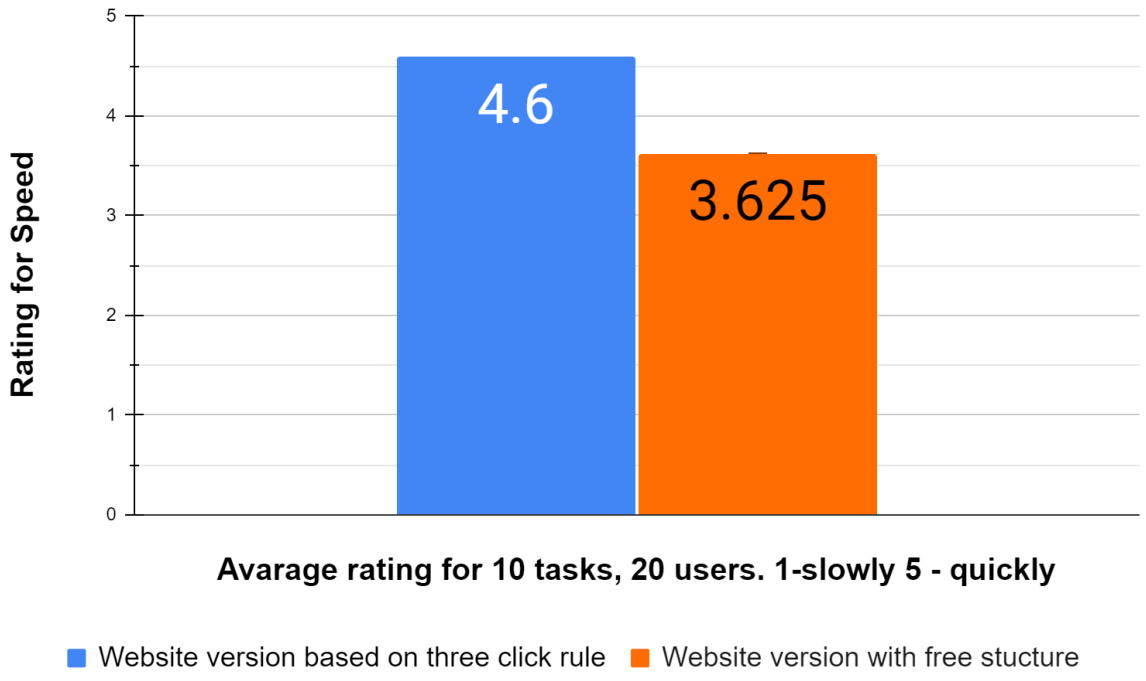
5.2 Hypotheses. True or False?

There are 4 hypotheses described in section 3.3.
Based on the results (sections 4.2 - 4.3), conclusions can be drawn about whether the hypotheses are true or false.

Hypothesis 1. Performance
It was hypothesised that the website version based on three clicks will perform better than the website version with free structure, in terms of number of clicks.

A website based on the “Three-clicks rule” has an overall speed rating of 4.6 out of a maximum of 5 and a website with free structure has an overall speed rating of 3.6 out of a maximum of 5 (Figure 5.2.1)

Figure 5.2.1. Website based on three-clicks rule VS website with free structure. Rating for speed.



To confirm or refute this hypothesis let's take a look at the results in chapter 4. Based on user ratings for each task and considering the results of the analysis in the SPSS (section 4.2) we can understand if the difference was significant.
Based on results (section 4.2) a table that gives a concise and clear overview of the ranking analysis of the two websites has been created (Table 5.2.1).
“Website 1” is a website based on the “Three-clicks rule” and “Website 2” is a website with free structure. The significance of the outcome has 2 meanings. Where meaning “1” - significant outcome, and meaning “0” is equal rating or not significant outcome.

Table 5.2.1. Website based on three-click rule VS website with free structure. Rating for speed, significance of outcome.

Task	Website 1	Website 2
Task 1	1	0
Task 2	1	0
Task 3	1	0
Task 4	1	0
Task 5	1	0
Task 6	1	0
Task 7	1	0
Task 8	0	0
Task 9	0	0
Task 10	1	0
TOTAL	**8**	**0**

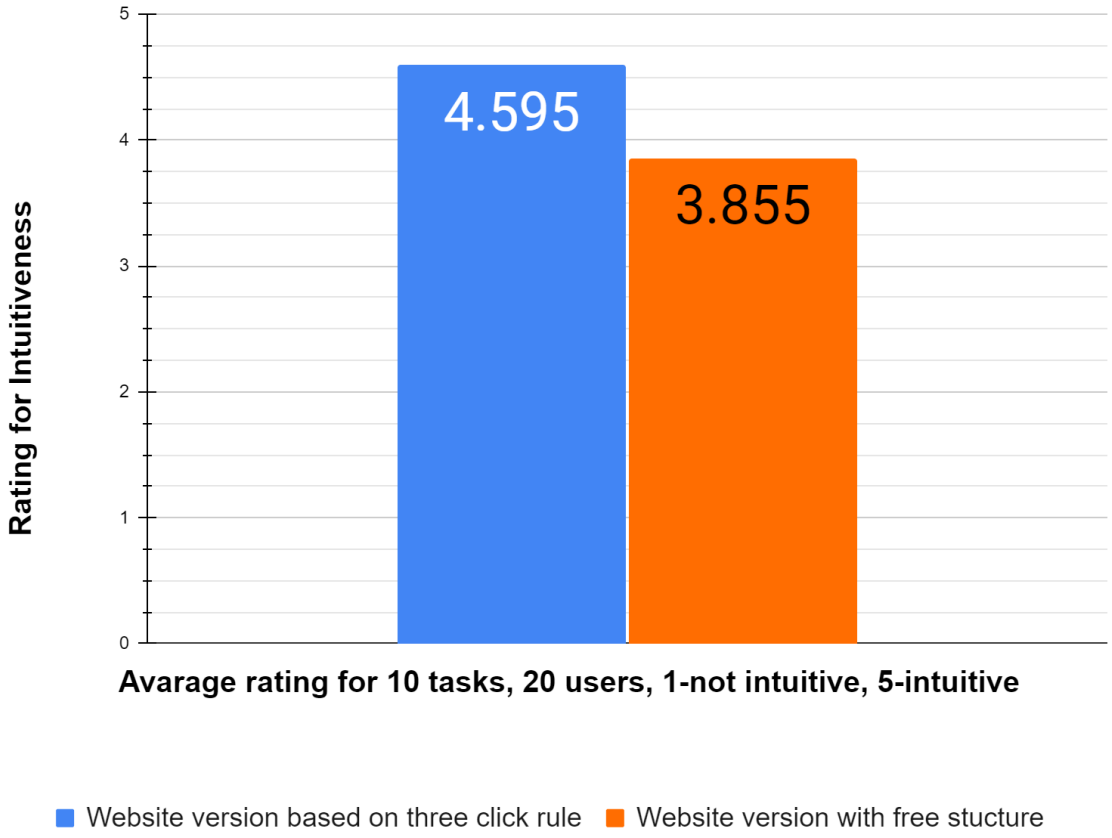
From this table we can understand that users gave significantly higher ratings for Speed for 8 tasks from total 10. This means that the website version based on three clicks performs better than the website version with free structure, in terms of number of clicks and Hypothesis 1 is true.

Hypothesis 2. Intuitiveness.

It was hypothesised that a three click version of the website will be more intuitive than the website version with free structure, it will be understandable where to go and therefore there will be less mistakes.

A website based on the “Three-clicks rule” has an overall intuitiveness rating of 4.6 out of a maximum of 5 and a website with free structure has an overall intuitiveness rating of 3.9 out of a maximum of 5 (Figure 5.2.2)

Figure 5.2.2. Website based on three-click rule VS website with free structure. Rating for intuitiveness.



To confirm or refute this hypothesis let's take a look at the results in chapter 4. Based on user ratings for each task and considering the results of the analysis in the SPSS (section 4.2) we can understand if the difference was significant.

Based on results (section 4.2) a table that gives a concise and clear overview of the ranking analysis of the two websites has been created (Table 5.2.2).

“Website 1” is a website based on the “Three-clicks rule” and “Website 2” is a website with free structure. The significance of the outcome has 2 meanings. Where meaning “1” - significant outcome, and meaning “0” is equal rating or not significant outcome.

Table 5.2.2. Website based on three-clicks rule VS website with free structure. Rating for intuitiveness, significance of outcome.

Task	Website 1	Website 2
Task 1	0	0
Task 2	1	0
Task 3	1	0
Task 4	1	0
Task 5	1	0
Task 6	1	0
Task 7	1	0
Task 8	0	0
Task 9	0	0
Task 10	1	0
TOTAL	**7**	**0**

From this table we can understand that users gave significantly higher ratings for Intuitiveness for 7 tasks from total 10.

This means that the website version based on three clicks is more intuitive and understandable than the website version with free structure.

Table 5.2.3 also shows that totally 67,5 % of users have finished tasks at the website based on the “Three-clicks rule” without mistakes and within a minimal amount of clicks.

If we compare the results with free structure website - the percentage of users who finished tasks without mistakes is 55% which is 12.5 % less than on the website based on the “Three-clicks rule”.

Based on this information, we can conclude that Hypothesis 2 is true.

Table 5.2.3. Amount of users who finished tasks without mistakes and with minimal amount of mouse clicks.

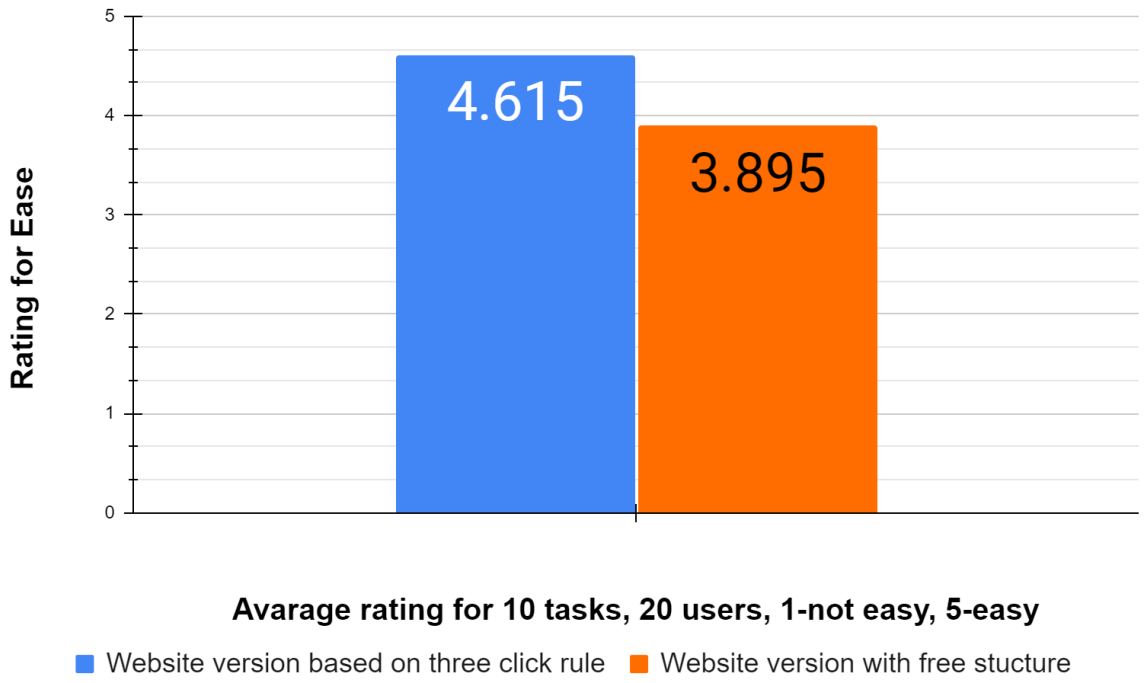
Task	Website 1	% of all users	Website 2	% of all users
Task 1	13	65	16	80
Task 2	15	75	11	55
Task 3	16	80	12	60
Task 4	16	80	10	50
Task 5	13	65	18	90
Task 6	13	65	15	75
Task 7	8	40	3	15
Task 8	14	70	9	45
Task 9	14	70	12	60
Task 10	13	65	4	20
TOTAL Users	**135**	67.5	**110**	55

Hypothesis 3. Ease.

It was hypothesised that a three click version of the website will be more easy to use for the users to find necessary information.

A website based on the “Three-clicks rule” has an overall ease rating of 4.6 out of a maximum of 5 and a website with free structure has an overall ease rating of 3.9 out of a maximum of 5 (Figure 5.2.4)

Figure 5.2.4. Website based on three-click rule VS website with free structure. Rating for intuitiveness.



To confirm or refute this hypothesis let's take a look at the results in chapter 4. Based on user ratings for each task and considering the results of the analysis in the SPSS (section 4.2) we can understand if the difference was significant.
Based on results (section 4.2) a table that gives a concise and clear overview of the ranking analysis of the two websites has been created (Table 5.2.2).
“Website 1” is a website based on the “Three-clicks rule” and “Website 2” is a website with free structure. The significance of the outcome has 2 meanings. Where meaning “1” - significant outcome, and meaning “0” is equal rating or not significant outcome.

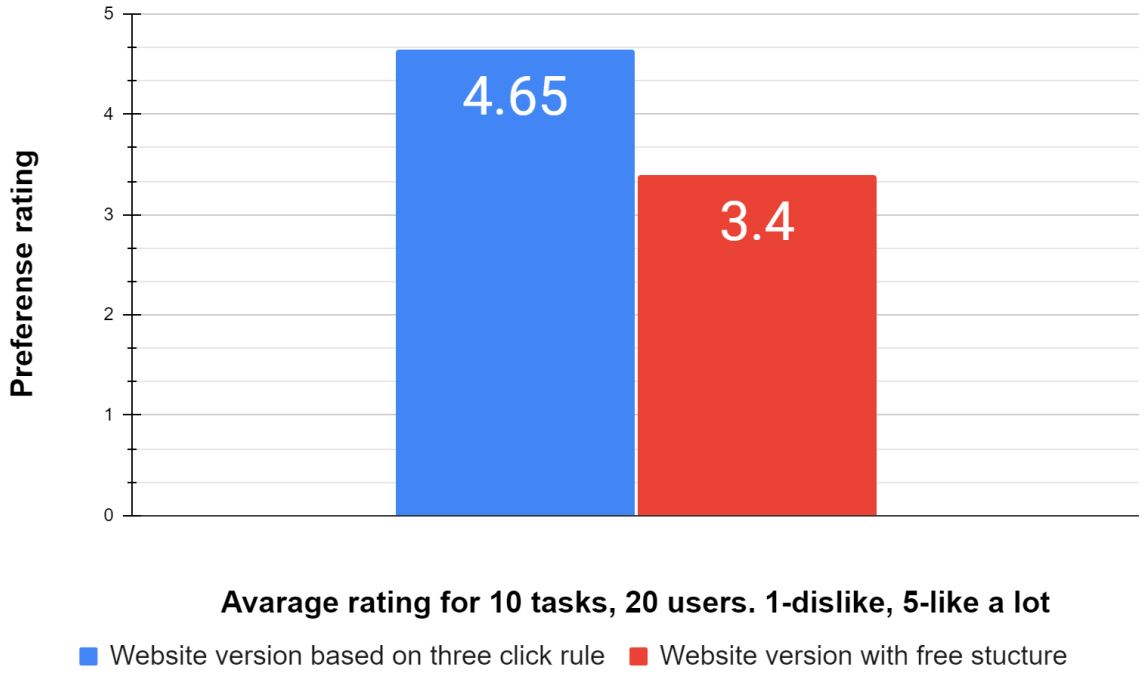
Table 5.2.4. Website based on three-clicks rule VS website with free structure. Rating for ease, significance of outcome.

Task	Website 1	Website 2
Task 1	1	0
Task 2	1	0
Task 3	1	0
Task 4	1	0
Task 5	1	0
Task 6	0	0
Task 7	1	0
Task 8	0	0
Task 9	0	0
Task 10	1	0
TOTAL	**7**	**0**

From this table we can understand that users gave significantly higher ratings for Ease for 7 tasks from total 10.
This means that the website version based on three clicks is more easy and understandable than the website version with free structure.
Table 5.2.3 also proves that users had less mistakes on the website based on the “Three-click rule” in comparison to website with free structure during execution of the tasks. Based on this information, we can conclude that Hypothesis 3 is true.

Hypothesis 4. Preference.
It was hypothesised that prefered version will be a website based on the “Three-clicks rule”.
A website based on the “Three-clicks rule” has an overall preference rating of 4.6 out of a maximum of 5 and a website with free structure has an overall rating of 3.4 out of a maximum of 5 (Figure 5.2.5)

Figure 5.2.5. Website based on three-clicks rule VS website with free structure. Rating for general liking or preference.



The results of analysis in SPSS in section 4.2.11 says to us that there is a significant outcome in users rating. The preferable website version is the version based on the “Three-click rule”. Therefore, Hypothesis 4 is true.

6. CONCLUSION.

All 4 hypotheses described in section 3.3 are true and a website based on “Three-clicks rule” vastly and unanimously wins.

6.1 Summary.

Surprisingly, website promotion is the main area where the “Three-clicks rule”, which many criticised, applies across the board (Joshua Porter, 2003).
The aim of this research paper, described in chapter 1-Introduction, was to understand the relationships between “Three-clicks rule”, users' experience and Universal Design.
Universal Design is based on 7 main principles (Story, 1998) which are: Equitable Use, Flexibility in Use, Simple and Intuitive Use, Perceptible Information, Tolerance for Error, Low Physical Effort, Size and Space for Approach and Use.

Users in general would prefer to avoid using a lot of time on the webpage, because they want to receive the information quickly (Nielsen, 2010).

Since the participants were diverse (Chapter 4. Demography of participants) and according to the analysis of results (chapter 4) all participants gave more preferation to website based on the “Three-clicks rule” - we can make a conclusion that **Universal Design is negatively affected if the “Three-clicks rule” is not implemented in the web design**. The performance aspects are higher in comparison to the websites without implementing the “Three clicks rule" and most of the users gave higher ratings to the website based on the “Three-clicks rule”.
The analysis of the average speed, intuitiveness, easiness and general rating (Figure 5.2.5) also shows that website based on the “Three-clicks rule” received much more positive responses in comparison with website based on free structure.

However it is difficult to make an exact conclusion based only on this experimental study. Human brain is able to accept and analyse information from website with any structure with good organised information, the most important is that information is organised as simple as possible (Brad Phillips, 2016)

6.2 Ethics.

During this research the prototypes were not available online, only from the observers PC. That is why the research is supposed to be executed either in real on the observers PC, or online, with help of remote connectivity software when the user was able to connect remotely to observers PC.
As it was necessary to follow up the participants during the execution of the tasks, the date and time for research was agreed with participants in advance and all the participants were more or less acquainted with the observer.

It was decided to make the research be executed with the help of remote connectivity software, because participants could be in a familiar environment during research, for example at their home or at office after working time.

Each research was planned carefully by an observer. The follow-up of the research was made with help of a phone call from the beginning of the research to its end, in addition an observer was following the screen while the user was connected remotely for execution of research and used a screen recorder for randomly chosen users.

Due to quite many tasks, the research itself needed at least 20 minutes, but in practice most of the participants finished the research in approximately half an hour and for some participants it took almost an hour.
2 gift cards, equivalent to 400 NOK each, were drawn between 20 users with the help of an online random number generator.

6.3 Limitations.

Some of the users did not show up for the agreed time, some of the users could not use the remote connectivity software, some of the users didn't have a mouse and since scrolling on the mouse pad on the laptop led to additional clicks, those participants therefore were not taken in this research.

Some participants expected to use their smartphones instead of PCs. Finally some of the participants had bad internet connection so it took more time to finish the tasks with interruptions.

During the execution of the tasks, not all the users used the drop-down menu on the website based on the three-click rule, which means that there were more than three clicks to get to the necessary information.

Some participants have made double clicks when internet connection was slowlier or when users have been impatient.

Some participants were confused and unsure in the beginning of research or felt tired at the end of research, because of this they have used more time to finish a task and made more mistakes, more mouse clicks than supposed to do.

In general users preferred the website version which seemed to be easier and took them less time to deal and to think…Most of the participants stated that it was easy and handy to have all information on one page, as it was on the 3-click version website. Website with free structure demanded more clicks, more time and more thinking while choosing the right category. However the prototypes were quite simple and there were not many components on the page, in case of more complex prototypes the results of rating could be different.

6.4 Future work

Regarding the above discussions about unknown origin and plenty of critics around the “Three-click rule", it is logically one can think that this rule is not worth attention and a waste of time. However, there should be reasons why the “three-click rule” is quite popular and still followed by many designers and marketologs and often these projects are very successful (Leigh Gallagher, 2017; Jonson, 2003; Jared, 2002). Therefore this rule is worth attention and more studies around it.

There is a low psychological entry barrier for the simple things and most of us are able to use simple things without any additional training (The heart of Tech, 2015).

There has never been a study before where a user could rate a website on the “Three-click rule” and compare it to another free structure website. The experiment described in this paper, of course, is not ideal, but it clearly showed the preferences of users.

Studies of the three-click rule are needed to study the behaviour of users when using the mobile Internet, as of April 2022, mobile internet users around the world make up approximately 63% of the world's population (Statista, Jonson, 2022).

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APPENDIXES

Appendix A. General questionnaire

(Presented to the users as google form). Available on the link: https://forms.gle/KuPmSvMHqzUpSGGe6)

Can you read and understand the English language?
☐ YES ☐ NO

Gender :
☐ Male ☐ Female

Occupation
☐ Studying ☐ Home ☐ Employed ☐ Retired

Age:
☐ 16-26 ☐ 27-37 ☐ 38-48 ☐ 49-59 ☐ 60-70 ☐ 71+

Internet user :
☐ No Experience ☐ At least Moderate user ☐ Experienced user

Have you used an online booking service before?
☐ YES ☐ NO

Could you think of booking a flat instead of a hotel on your next trip?
☐ YES ☐ MAYBE ☐ NO

Which type of communication would you choose to ask a question before making a reservation ? (can choose more then 1 answer)
☐ Email ☐ Live chat ☐ Phone to call

Did you use WhatsUp before?
☐ YES ☐ NO

Do you use a smartphone ?
☐ YES ☐ NO

If you use a smartphone, do you have mobile internet on it ?
☐ YES ☐ NO

If you use a smartphone, do you know how to install apps on it ?
☐ YES ☐ NO

Apendix A

General questionnaire

sevenechka@gmail.com (not shared) Switch accounts

*Required

Can you read and understand the English language? *

- Yes
- No

Gender : *

- Male
- Female
- Prefer not to say

Occupation *

- Studying
- Home
- Employed
- Retired

Age: *

- ◯ 16-26
- ◯ 27-37
- ◯ 38-48
- ◯ 49-59
- ◯ 60-70
- ◯ 71+

Internet user : *

- ◯ No Experience
- ◯ At least Moderate user
- ◯ Experienced user

Have you used an online booking service before? *

- ◯ Yes
- ◯ No

Could you think of booking a flat instead of a hotel on your next trip? *

- ◯ Yes
- ◯ No
- ◯ Maybe

Which type of communication would you choose to ask a question before making a reservation ? (can choose more then 1 answer) *

- ☐ Email
- ☐ Phone
- ☐ Live chat

Did you use WhatsUp before? *

- ◯ Yes
- ◯ No

Do you use a smartphone ? *

- ◯ Yes
- ◯ No

If you use a smartphone, do you have mobile internet on it ? *

- ◯ Yes
- ◯ No

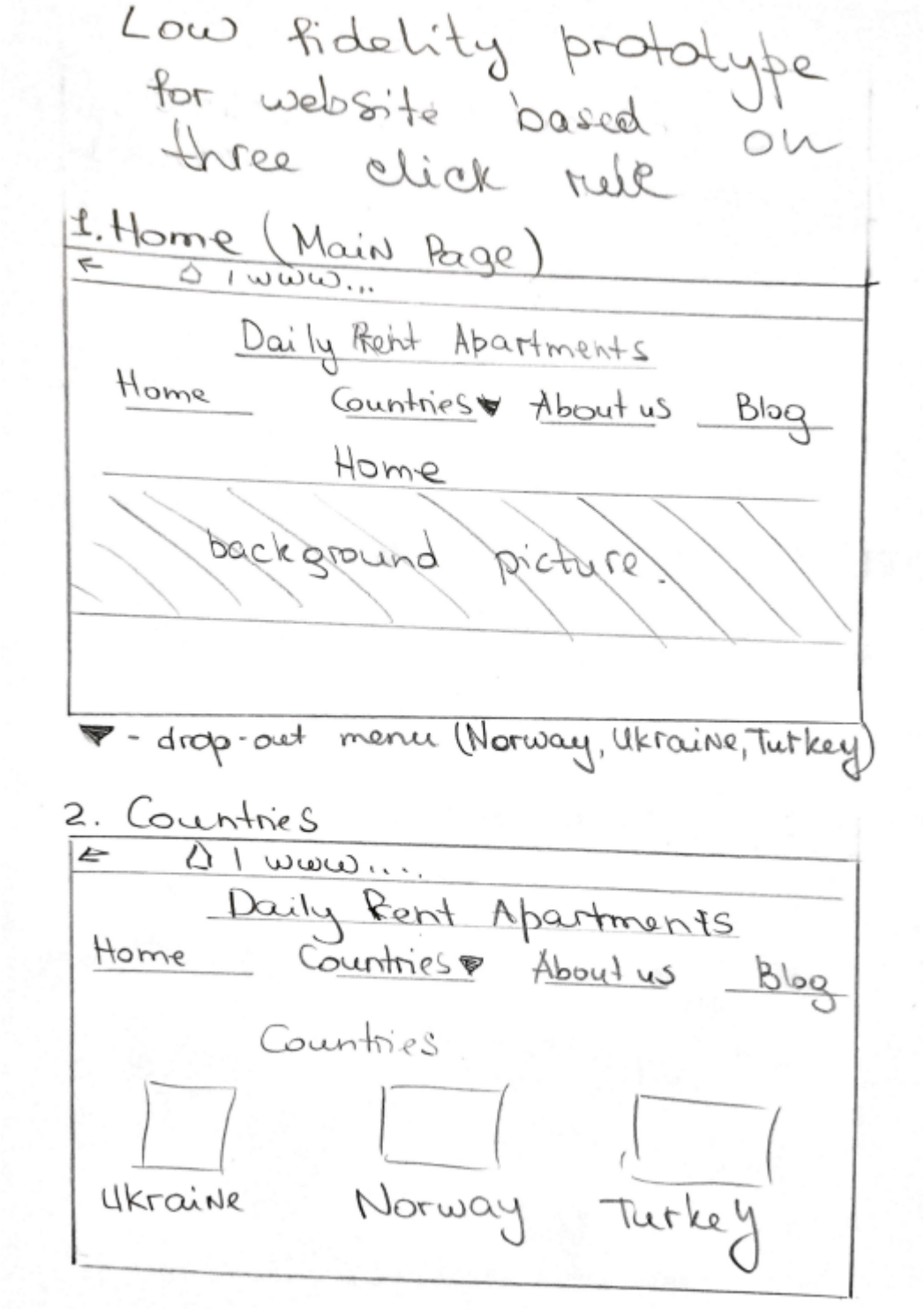
If you use a smartphone, do you know how to install apps on it ? *

- ◯ Yes
- ◯ No

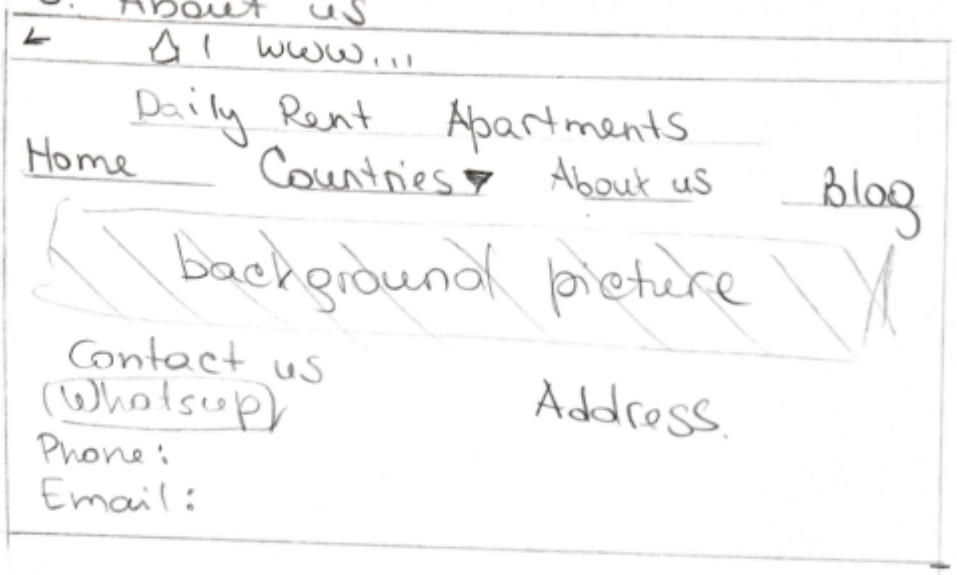
Submit Clear form

Appendix A1. Low fidelity Prototypes. Sketches.

Website based on “Three-click rule”.

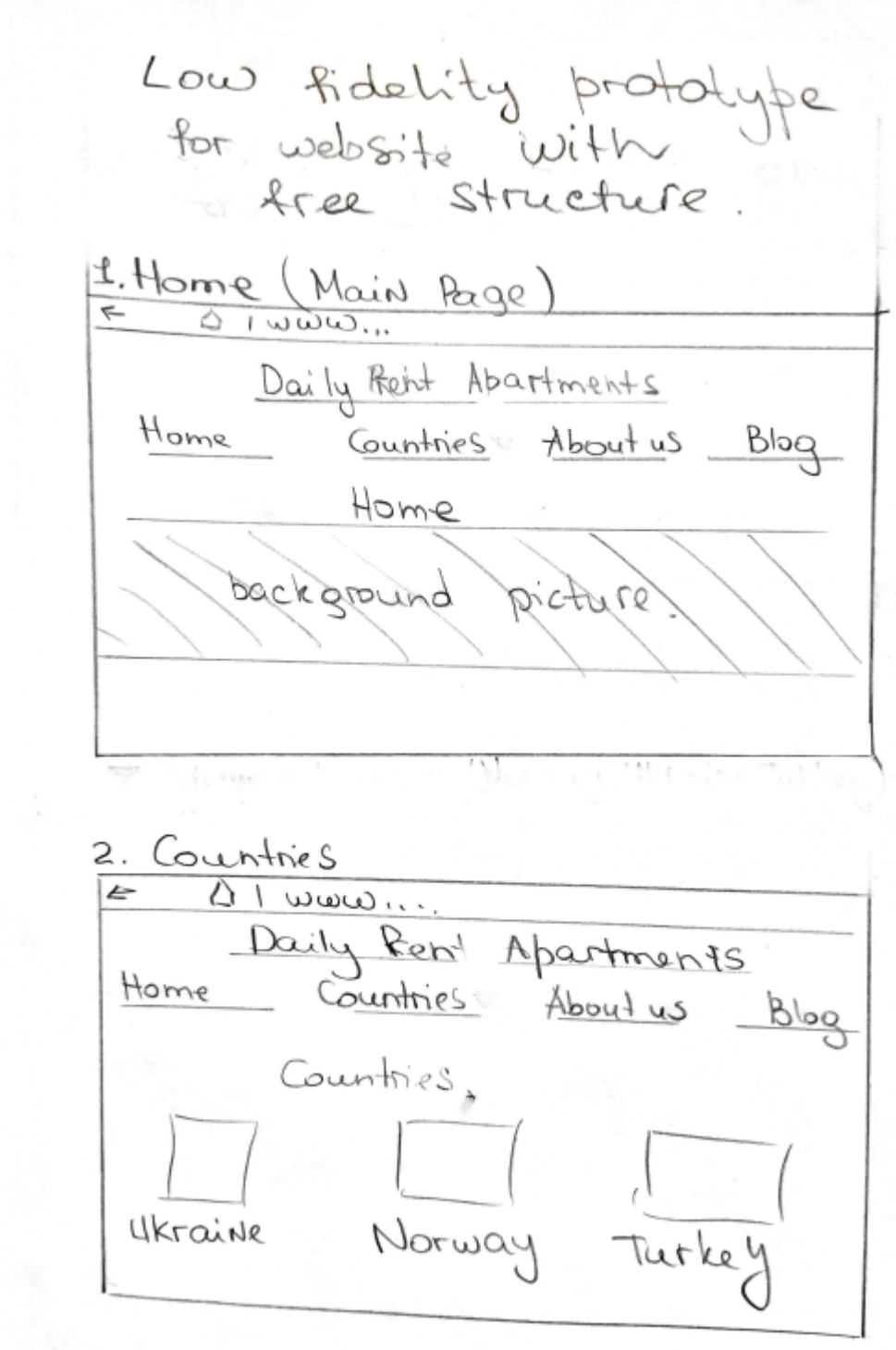


3. About us



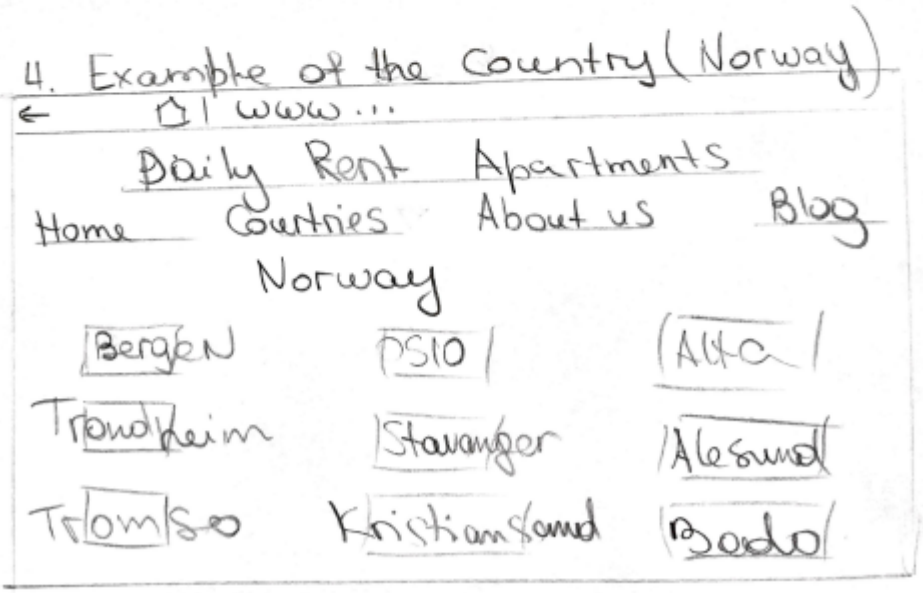
4. Example of the Country (Norway)

Website with free structure.



3. About us

4. Example of the Country (Norway)

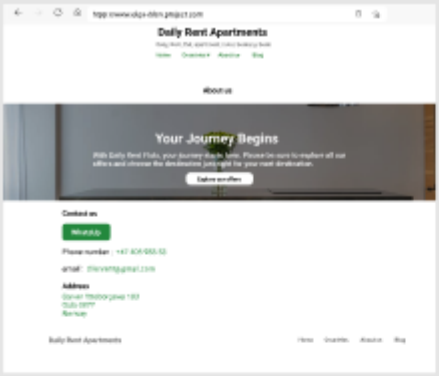


Appendix A2. High fidelity Prototypes in Figma.

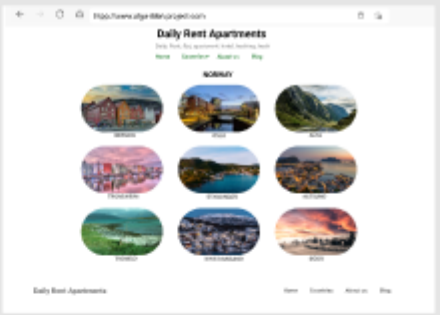
1. Website based on “Three-clicks rule”. Screenshots of pages.

Full design is available online in Figma. Link: https://www.figma.com/file/X4BikQhW9uk8qqObHPOv1D/Study-about-3-click-rule.-PROTOTYPE?node-id=4%3A2

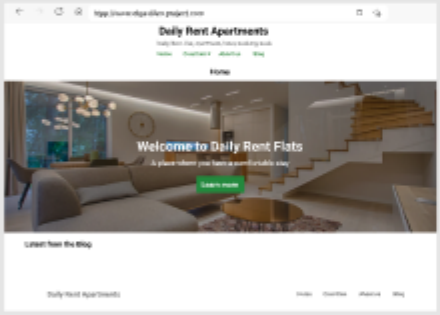
ABOUT US



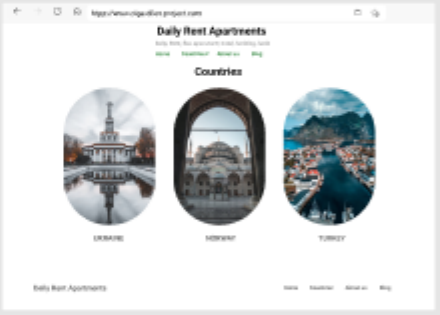
NORWAY



MAIN PAGE



COUNTRIES



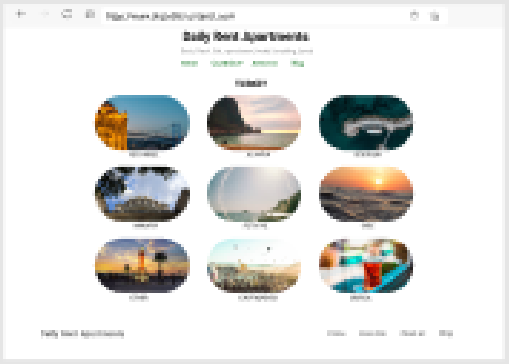
MAIN PAGE with menu

UKRAINE

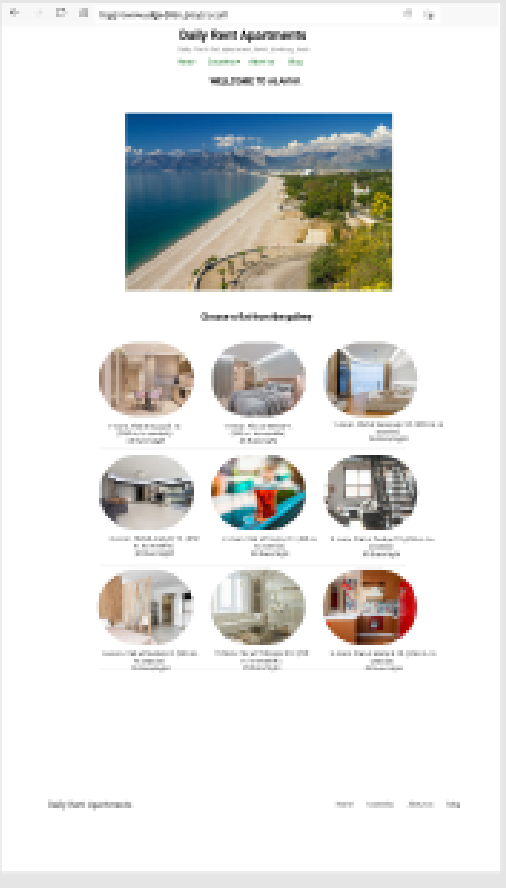
OSLO

ALESUND

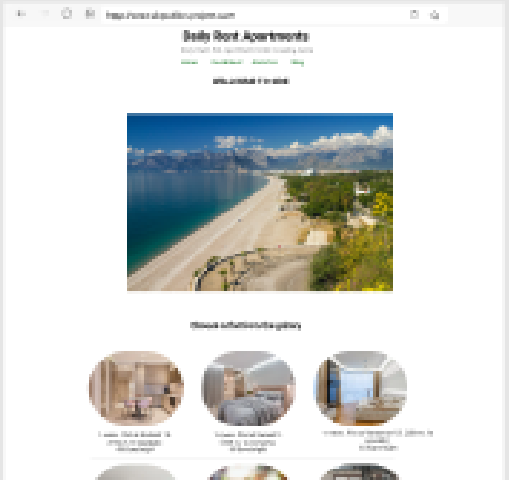
TURKEY



ALANYA



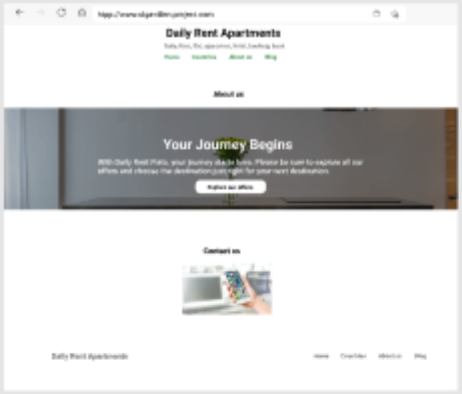
SIDE



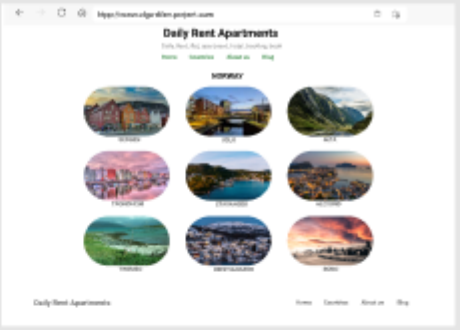
2. Website with free structure. Screenshots of pages.

Full design is available online in Figma. Link: https://www.figma.com/file/X4BikQhW9uk8qqObHPOv1D/Study-about-3-click-rule.-PROTOTYPE?node-id=87%3A2

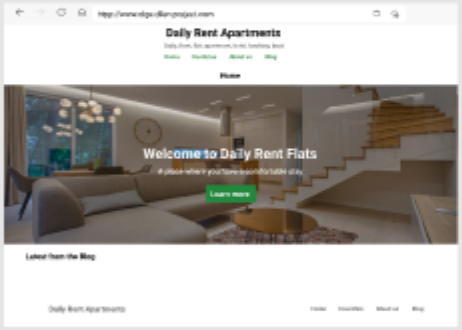
ABOUT US



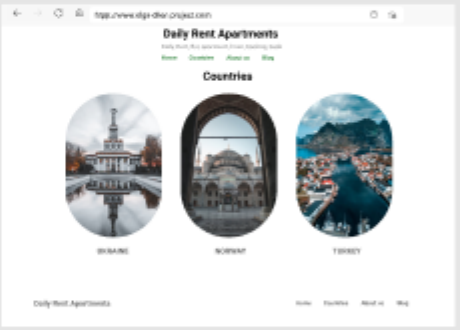
NORWAY



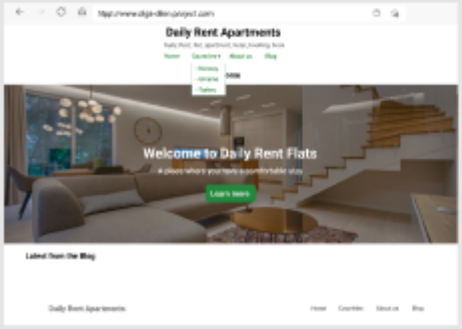
MAIN PAGE



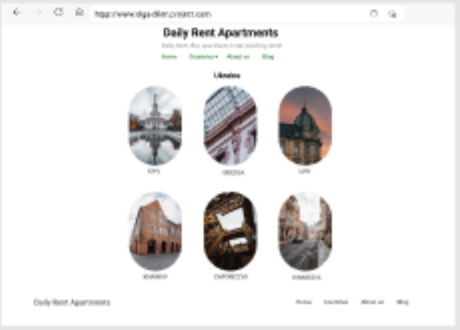
COUNTRIES



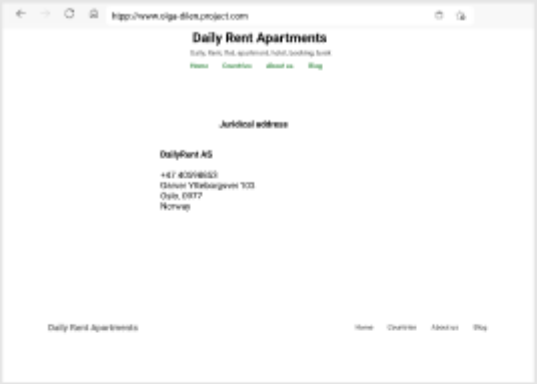
MAIN PAGE with menu



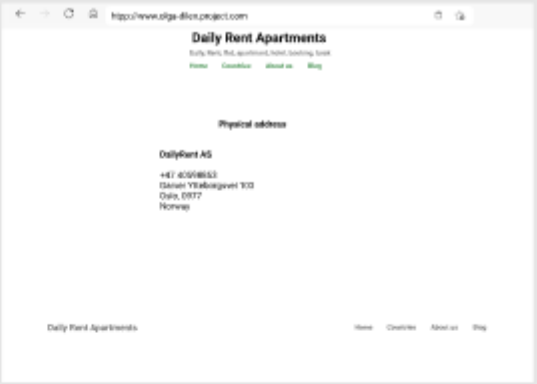
UKRAINE



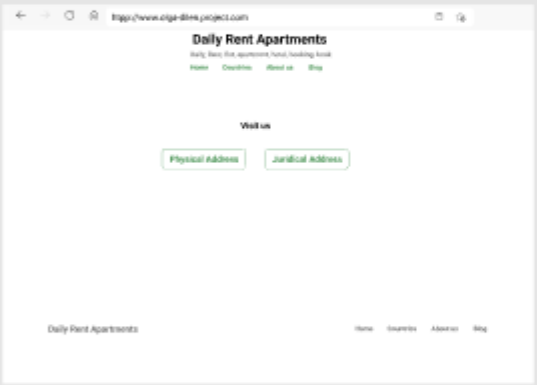
Juridical Address



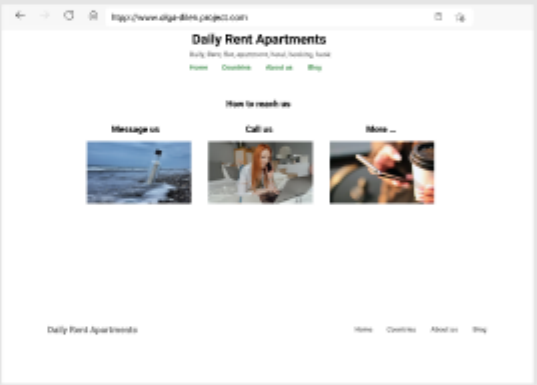
Physical Address



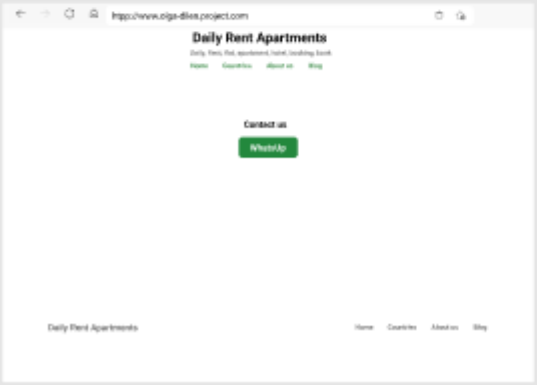
VISIT US



HOW TO REACH US



CONTACT WHATSUP

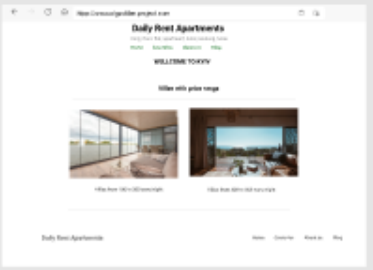


CHAT_VISIT_US

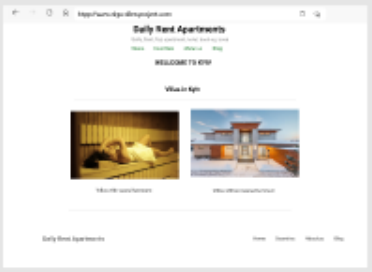
KYIV

KYIV_Apartments

KYIV_Villas



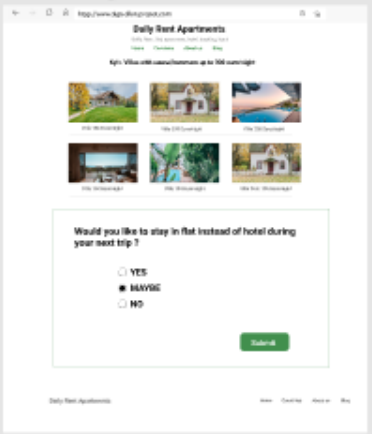
KYIV_Villas from 100 t...



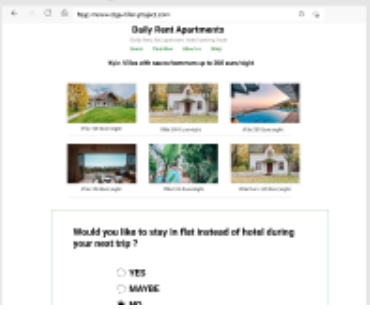
KYIV_Kyiv. Villas saun...

KYIV_Kyiv. Villas with ...

KYIV_Kyiv. Villas saun...



KYIV_Kyiv. Villas saun...



KYIV_Kyiv. Villas saun...

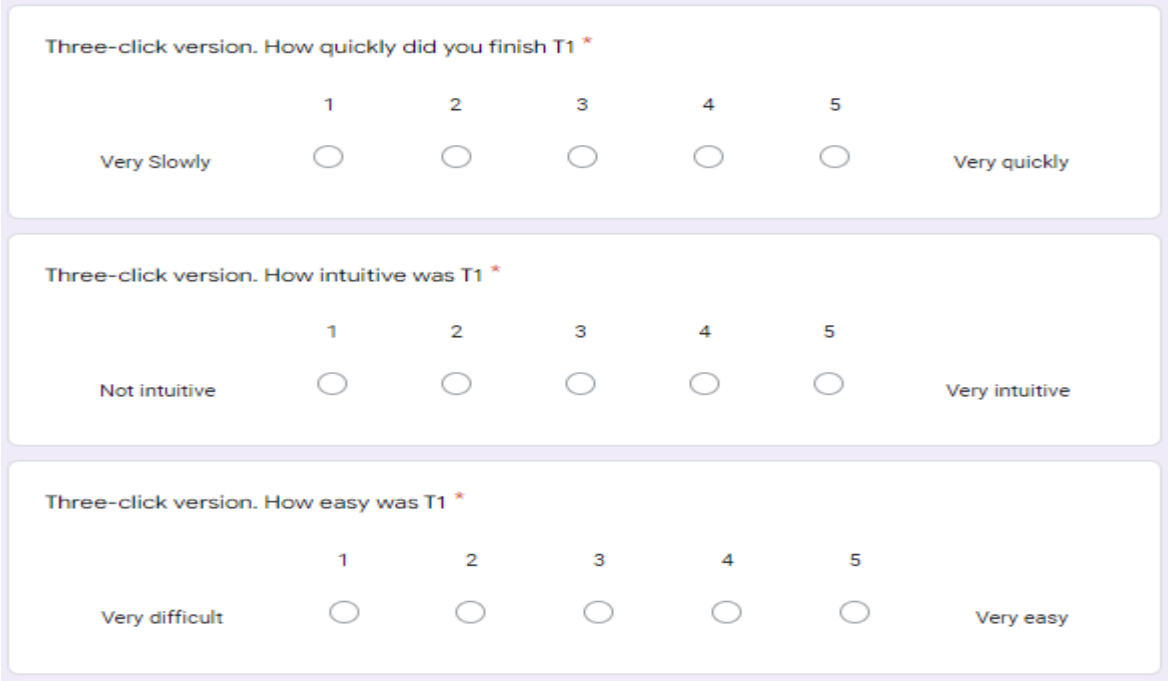
Appendix B. Evaluation

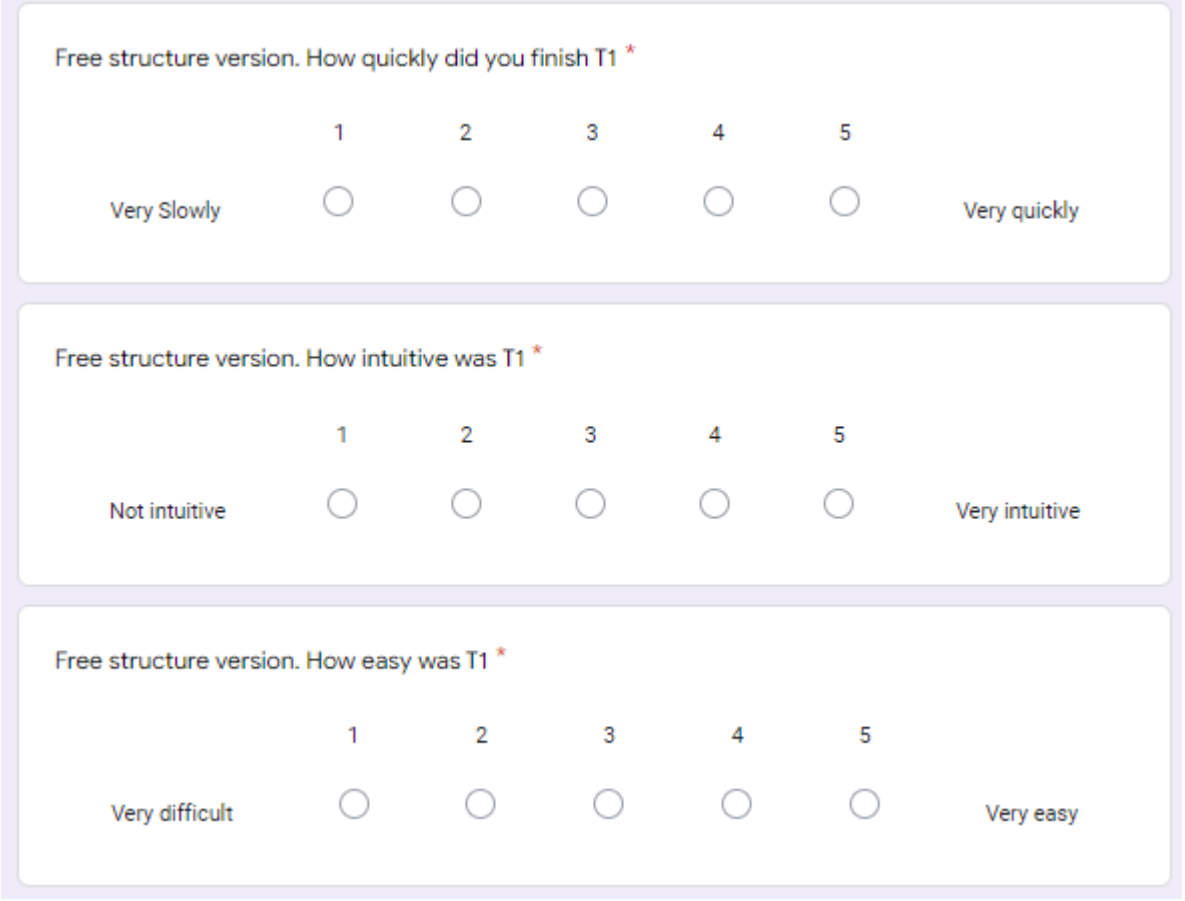
10 tasks and their evaluation for comparing two versions of a website.

Presented to the users as google form and available on the link:
https://forms.gle/mfB293MEwi27PVE97

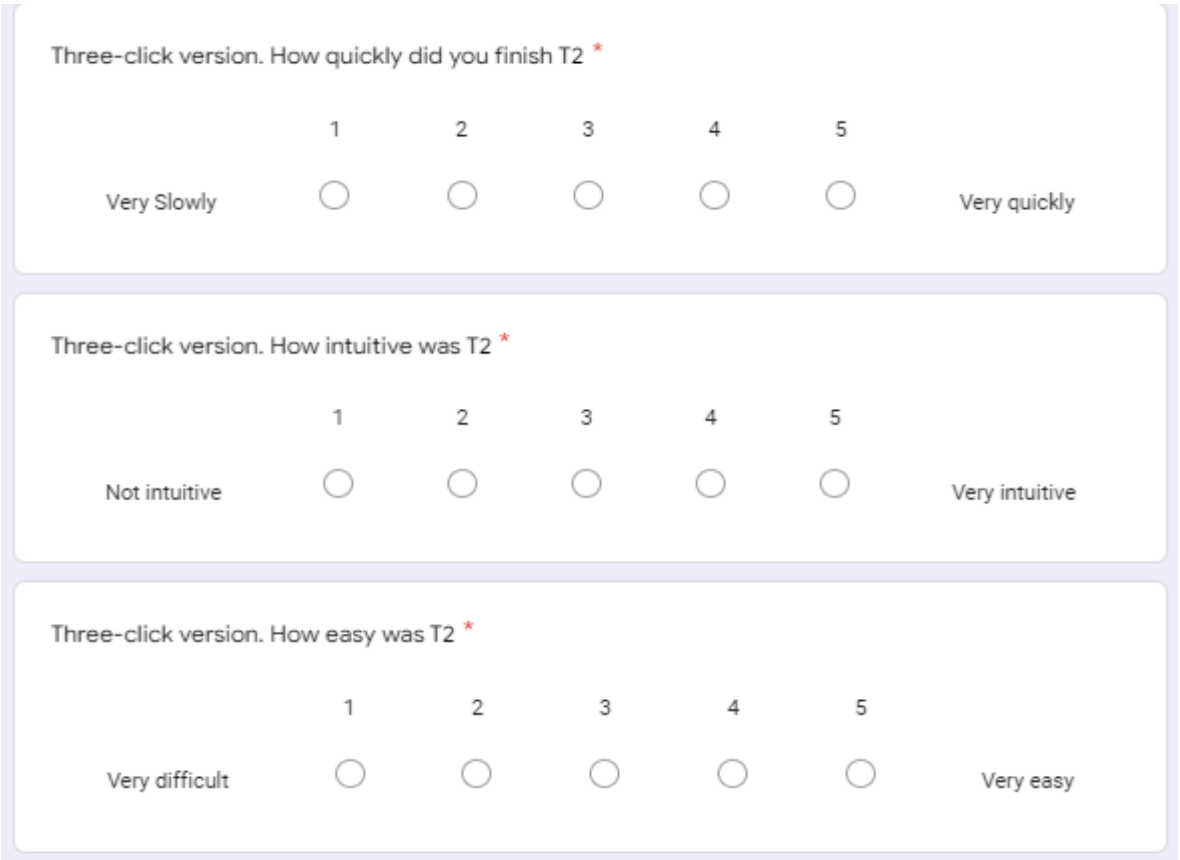
Below there are screenshots of the basic questions.

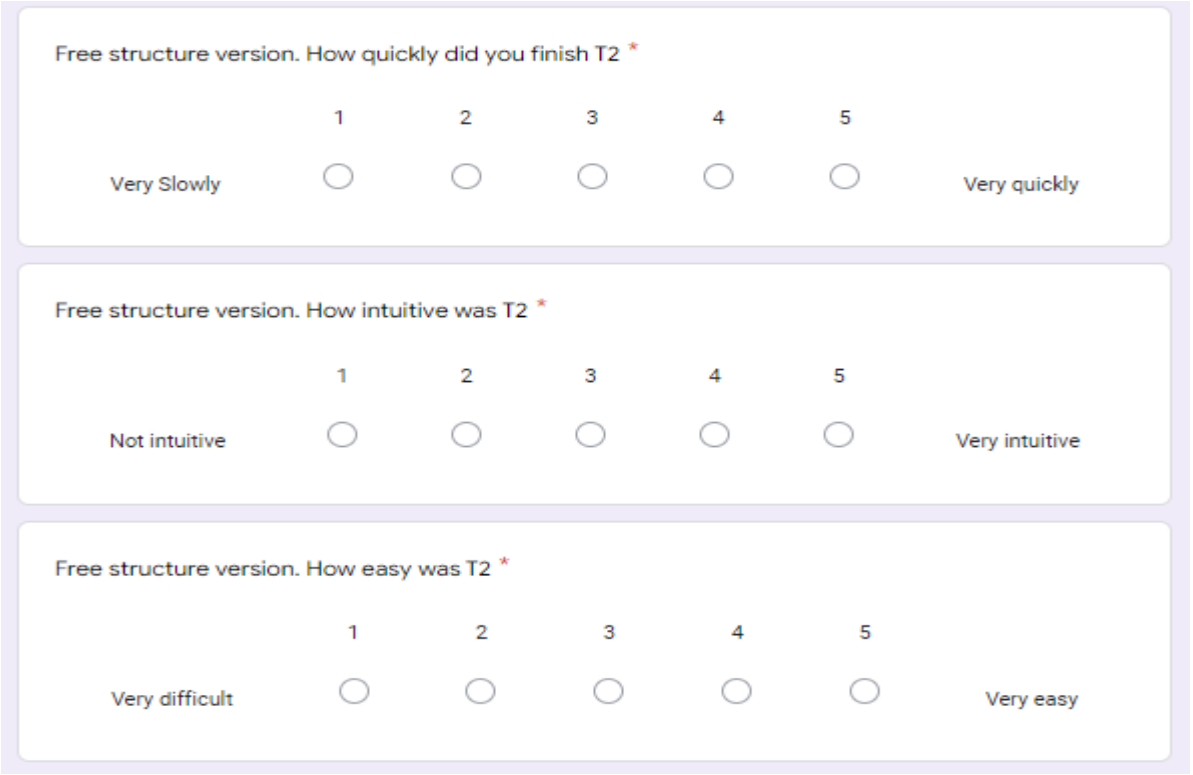
Task 1. Find a description of the cheapest flat in Norway, Oslo.



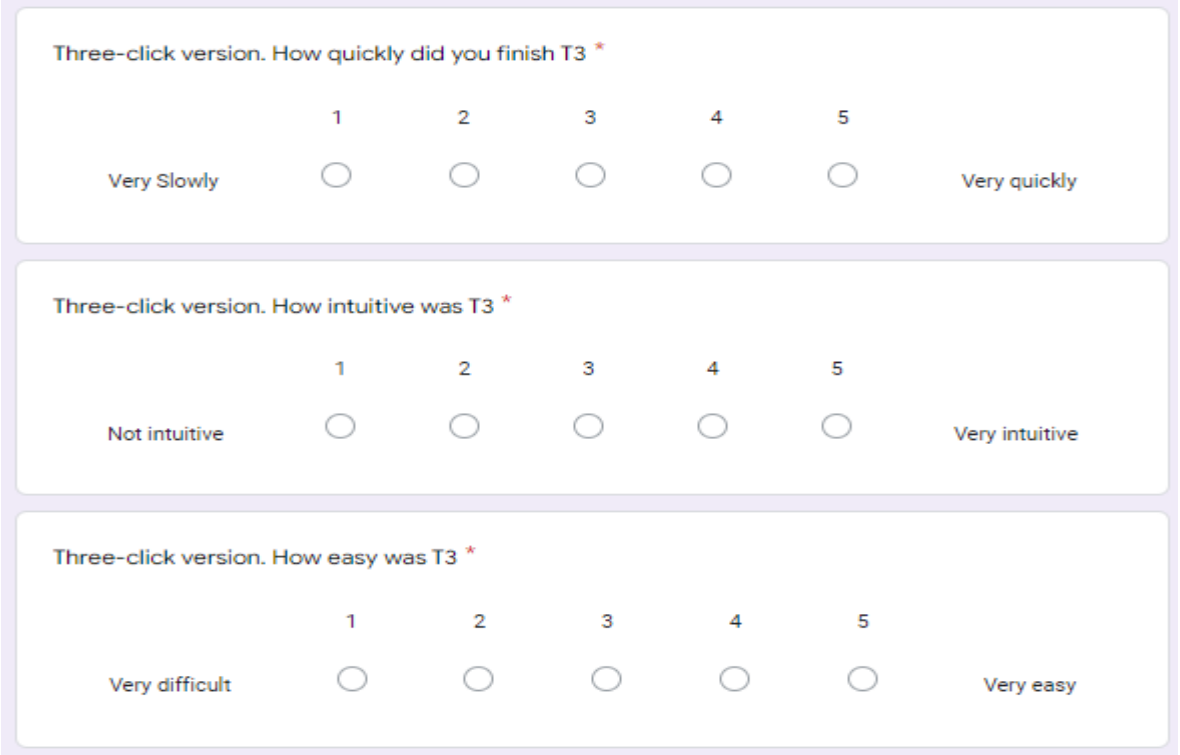


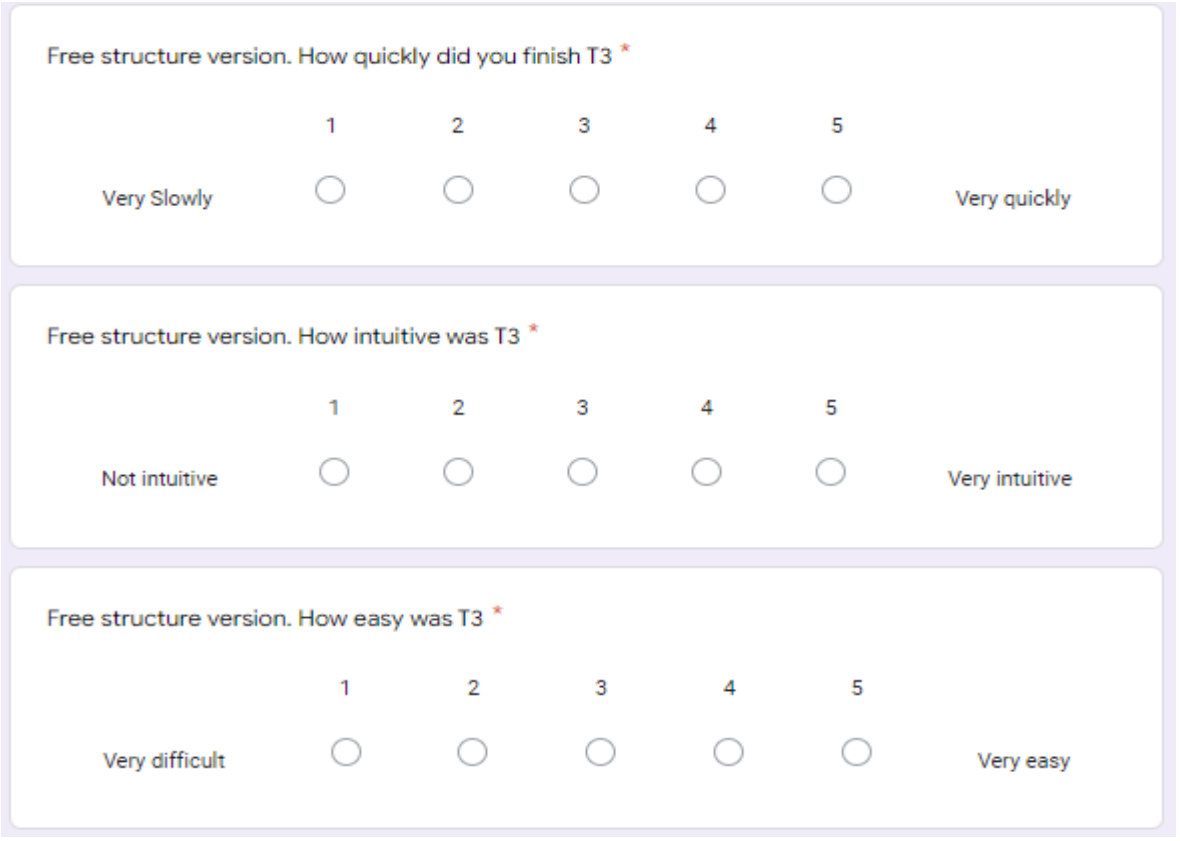
Task 2. Write a message to the company via WhatsUp, you can find WhatsUp in contacts, about us.



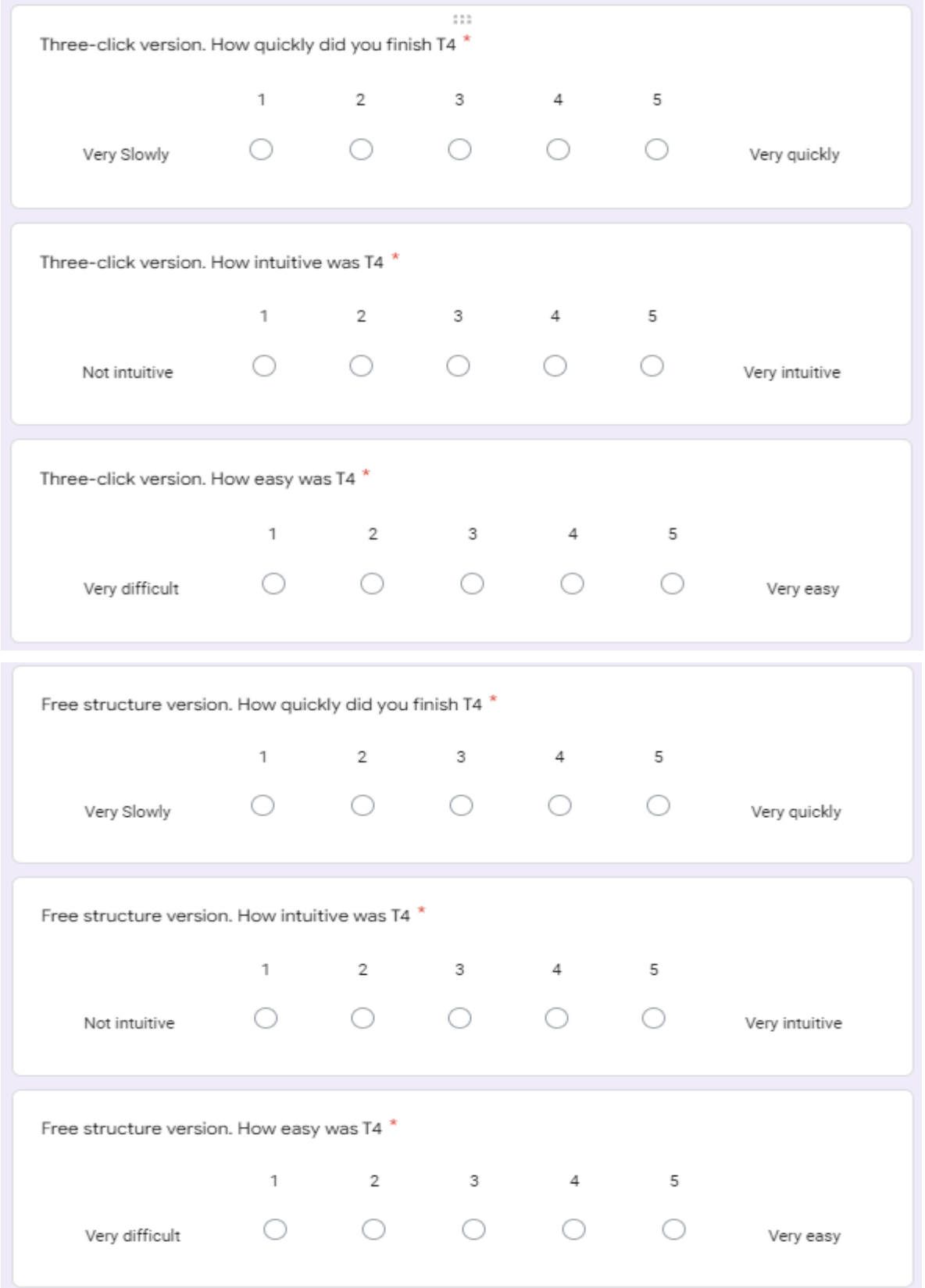


Task 3. Find the description of a 3 bedroom flat in Turkey, Alanya for daily rent, up to 550 meters to the seaside.





Task 4. Find physical address of the company



Task 5. Find the description of a 2-bedroom flat in Norway, Alesund, at Stueveien 5, for daily rent.

Three-click version. How quickly did you finish T5 *

	1	2	3	4	5	
Very Slowly	◯	◯	◯	◯	◯	Very quickly

Three-click version. How intuitive was T5 *

	1	2	3	4	5	
Not intuitive	◯	◯	◯	◯	◯	Very intuitive

Three-click version. How easy was T5 *

	1	2	3	4	5	
Very difficult	◯	◯	◯	◯	◯	Very easy

Free structure version. How quickly did you finish T5 *

	1	2	3	4	5	
Very Slowly	◯	◯	◯	◯	◯	Very quickly

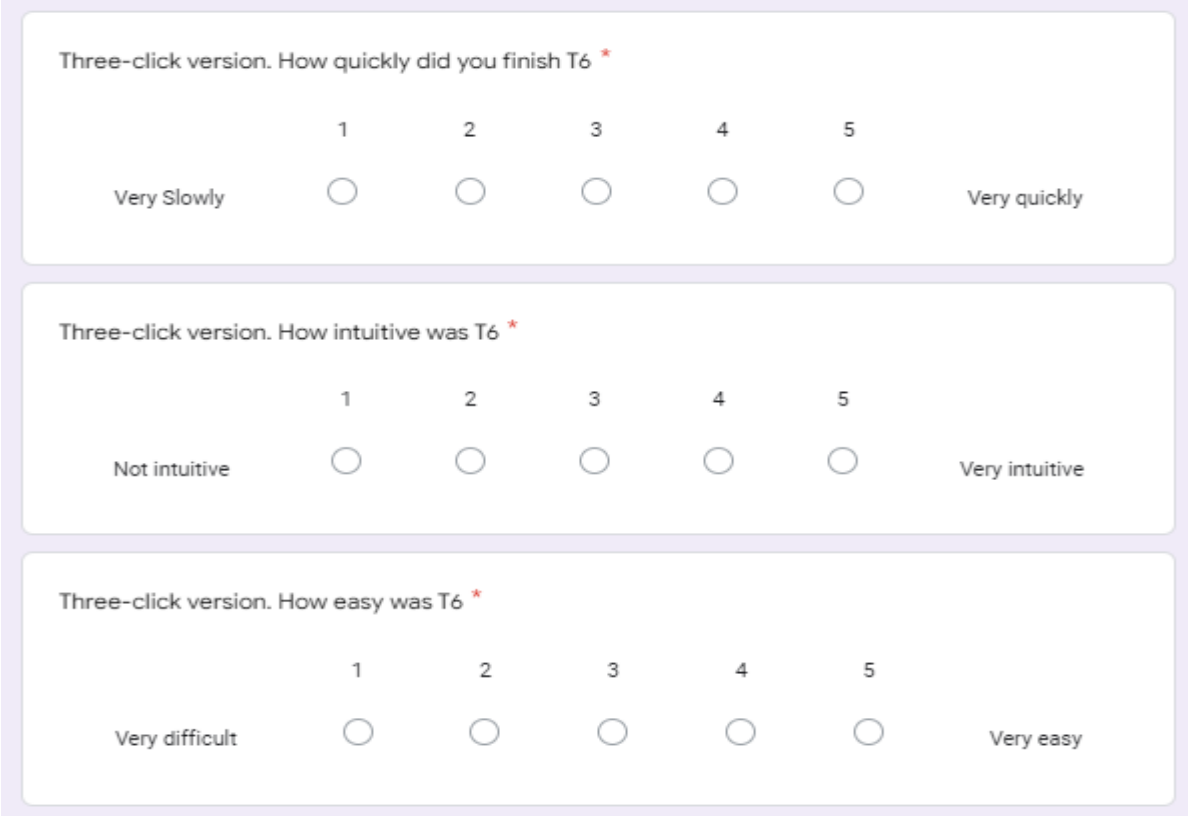
Free structure version. How intuitive was T5 *

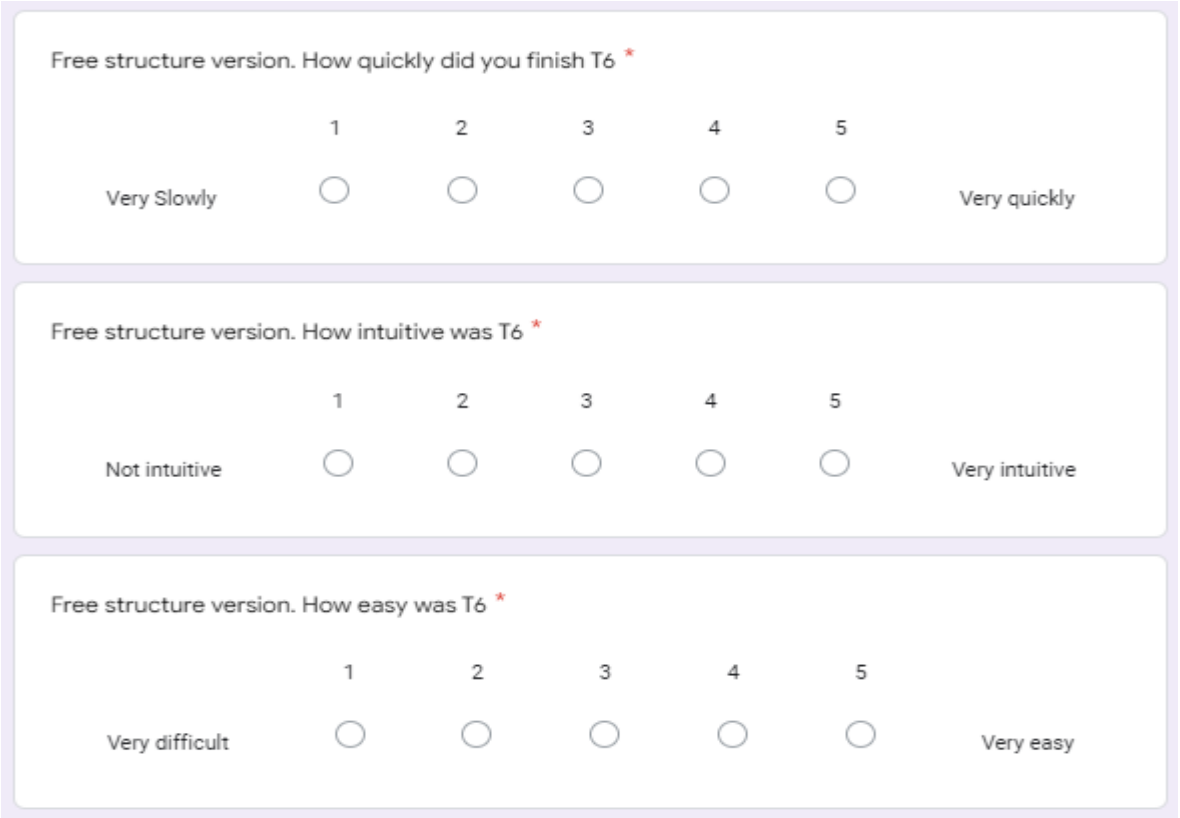
	1	2	3	4	5	
Not intuitive	◯	◯	◯	◯	◯	Very intuitive

Free structure version. How easy was T5 *

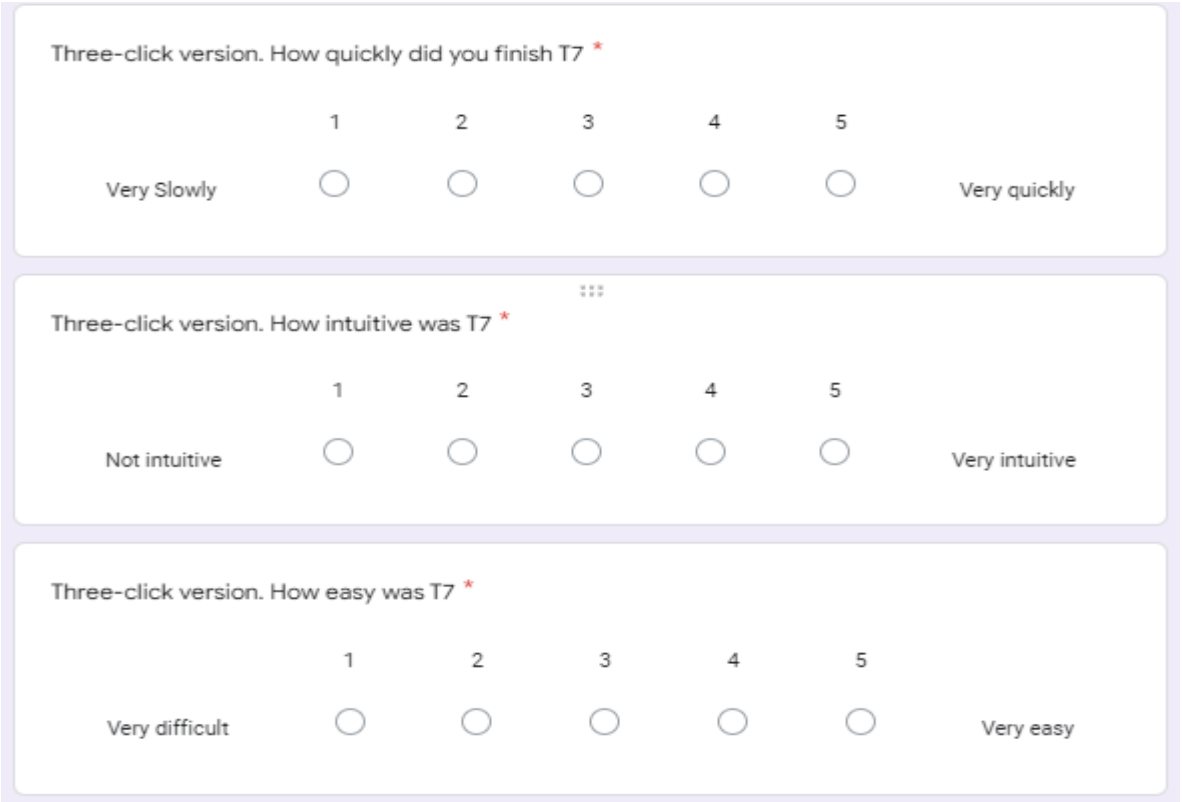
	1	2	3	4	5	
Very difficult	◯	◯	◯	◯	◯	Very easy

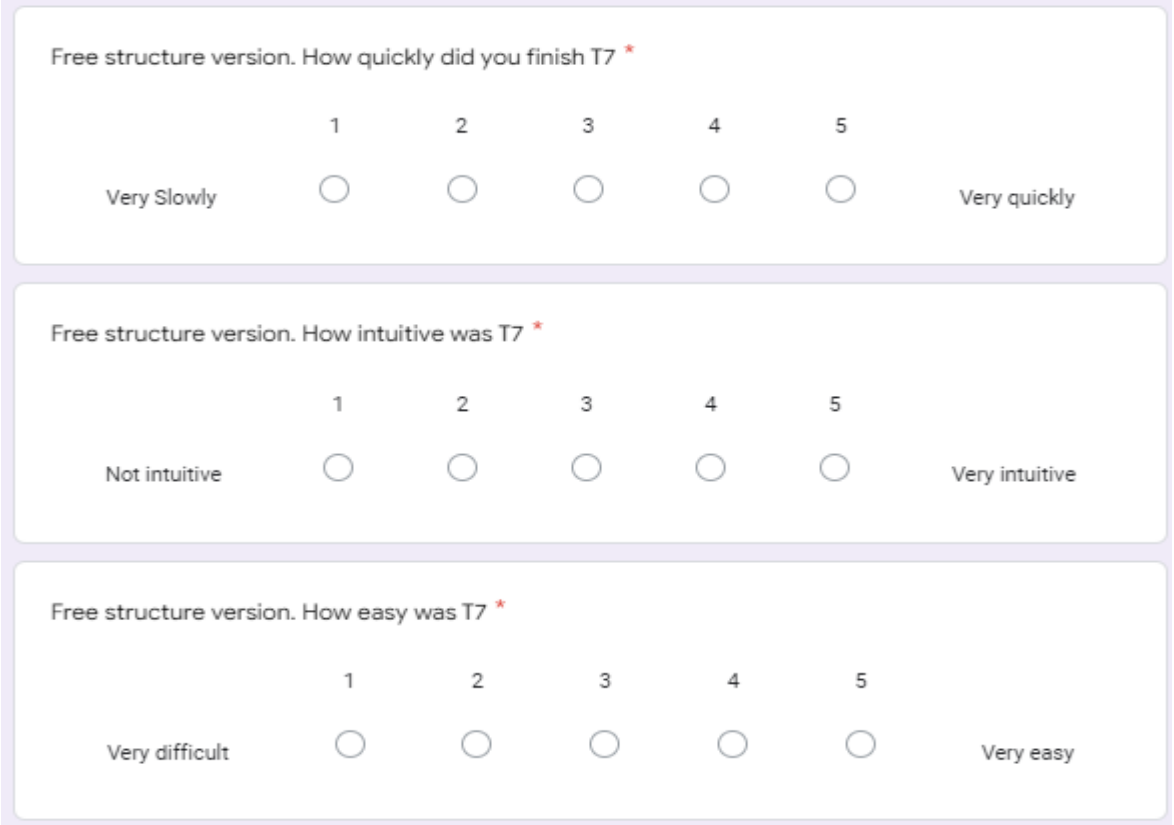
Task 6. Find the description of the flat for daily rent which is 150 meters to the beach in Turkey, Side



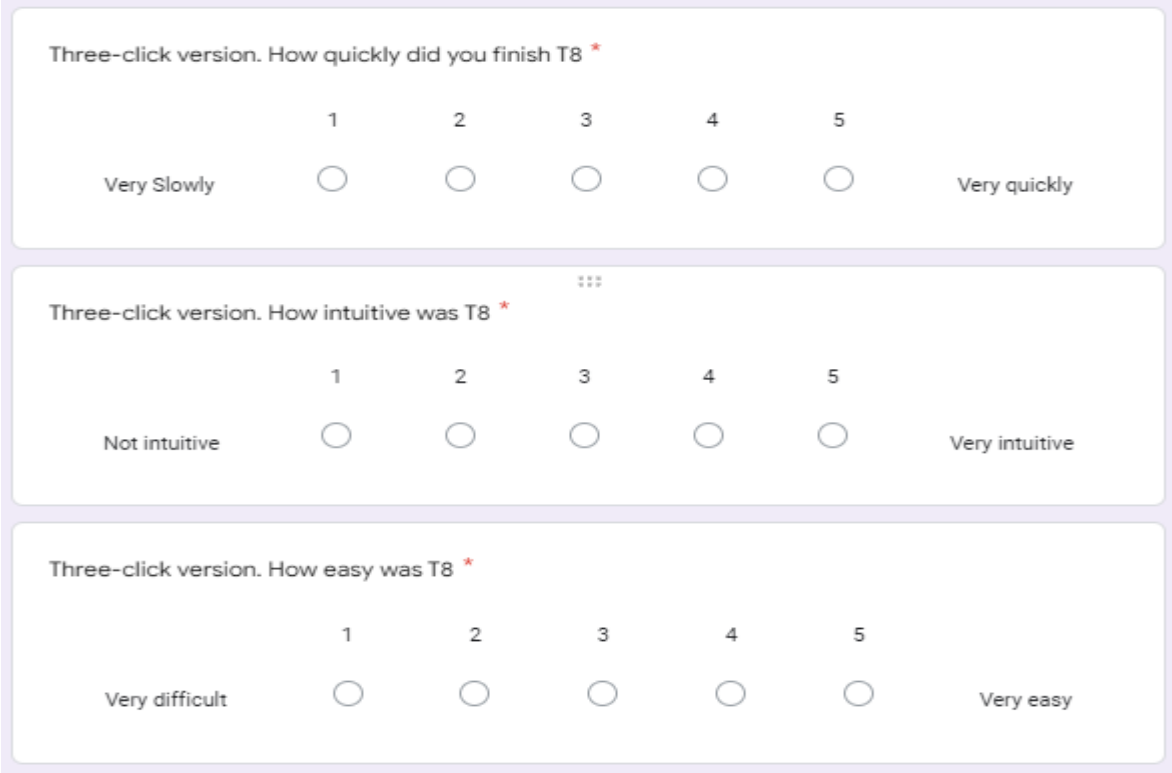


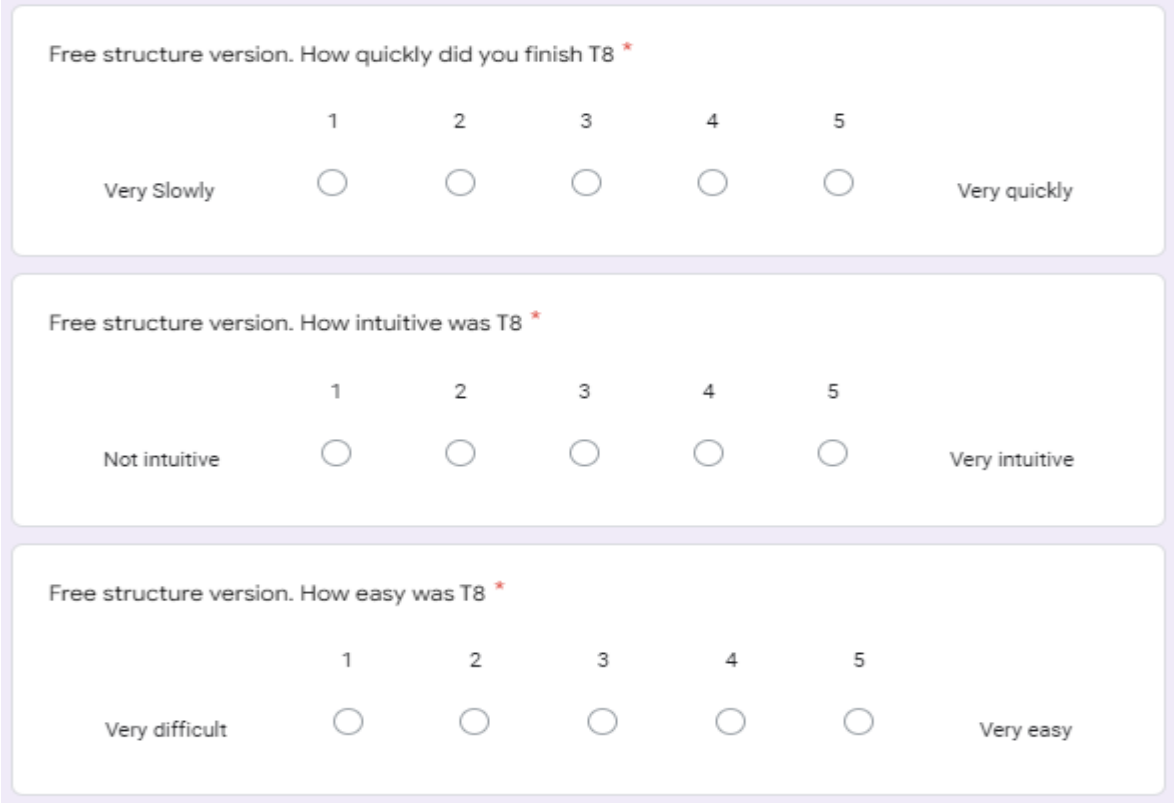
Task 7. Submit one answer on the questionnaire/poll situated under the cheapest villas of the page of Ukraine, Kiev





Task 8. Find the description of 2 floors flat in Turkey, Istanbul





Task 9. Find the description of the cheapest villa with hammam in Ukraine, Kiev

Three-click version. How quickly did you finish T9 *

	1	2	3	4	5	
Very Slowly	○	○	○	○	○	Very quickly

Three-click version. How intuitive was T9 *

	1	2	3	4	5	
Not intuitive	○	○	○	○	○	Very intuitive

Three-click version. How easy was T9 *

	1	2	3	4	5	
Very difficult	○	○	○	○	○	Very easy

Free structure version. How quickly did you finish T9 *

	1	2	3	4	5	
Very Slowly	○	○	○	○	○	Very quickly

Free structure version. How intuitive was T9 *

	1	2	3	4	5	
Not intuitive	○	○	○	○	○	Very intuitive

Free structure version. How easy was T9 *

	1	2	3	4	5	
Very difficult	○	○	○	○	○	Very easy

Task 10. Find the description of the cheapest villa with pool in Turkey, Cappadocia

Three-click version. How quickly did you finish T10 *

	1	2	3	4	5	
Very Slowly	○	○	○	○	○	Very quickly

Three-click version. How intuitive was T10 *

	1	2	3	4	5	
Not intuitive	○	○	○	○	○	Very intuitive

Three-click version. How easy was T10 *

	1	2	3	4	5	
Very difficult	○	○	○	○	○	Very easy

Free structure version. How quickly did you finish T10 *

	1	2	3	4	5	
Very Slowly	○	○	○	○	○	Very quickly

Free structure version. How intuitive was T10 *

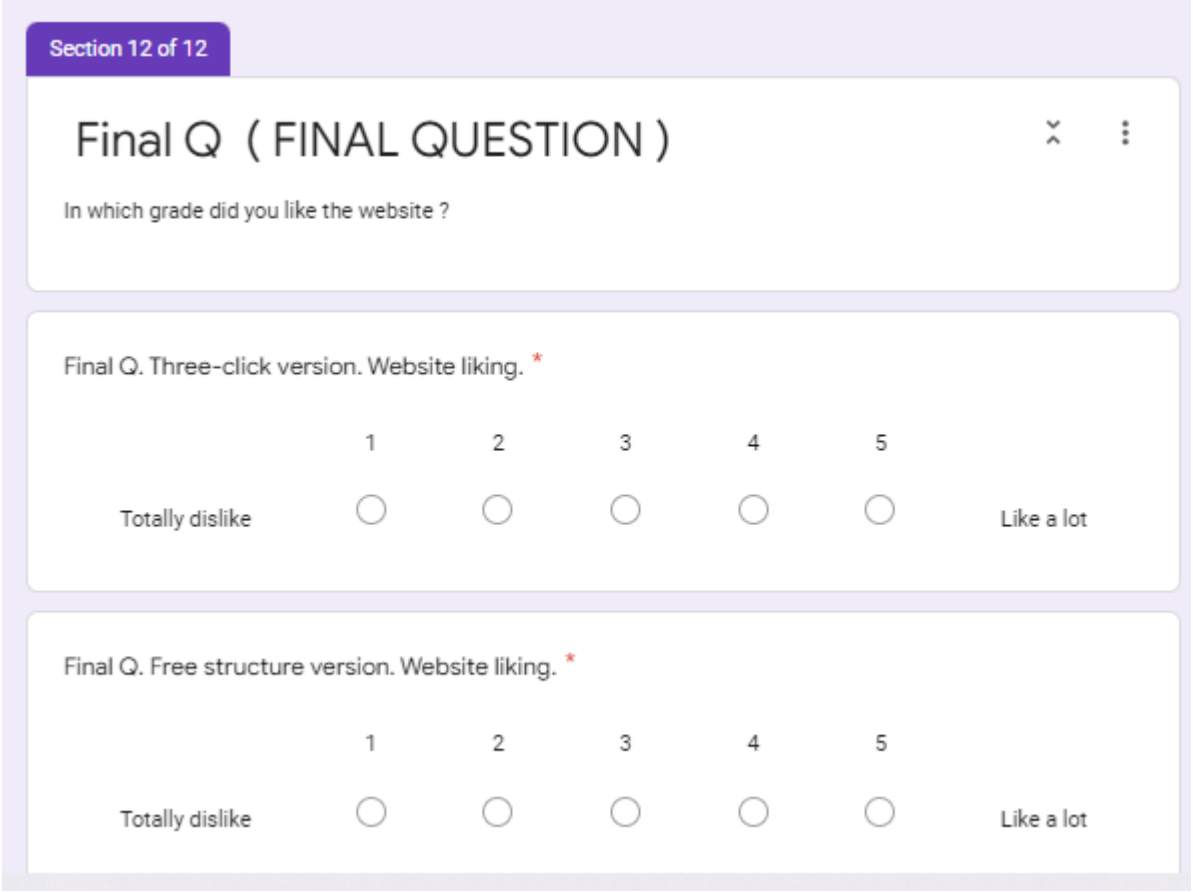
	1	2	3	4	5	
Not intuitive	○	○	○	○	○	Very intuitive

Free structure version. How easy was T10 *

	1	2	3	4	5	
Very difficult	○	○	○	○	○	Very easy

Appendix B1. Final Questions.

Final Questions. In which grade did you like the website ?



Appendix D. Remarks about mouse clicks.

Observers Remarks, registered data from mousotron for each user

Task 1.

WebSite (based on 3 -click rule)

	Clicks	2-clicks
Start		
Finish		

WebSite (Free structure)

Clicks	2-clicks

Task 2.

WebSite (based on 3 -click rule)

	Clicks	2-clicks
Start		
Finish		

WebSite (Free structure)

Clicks	2-clicks

Task 3.

*WebSite (based on 3 -click rule)**WebSite (based on 3 -click rule)*
WebSite (Free structure)

	Clicks	2-clicks
Start		
Finish		

Clicks	2-clicks

Task 4

WebSite (based on 3 -click rule)

	Clicks	2-clicks
Start		
Finish		

WebSite (Free structure)

Clicks	2-clicks

Task 5.

WebSite (based on 3 -click rule)

	Clicks	2-clicks

WebSite (Free structure)

Clicks	2-clicks

Start		
Finish		

Task 6.

WebSite (based on 3 -click rule)

	Clicks	2-clicks
Start		
Finish		

WebSite (Free structure)

Clicks	2-clicks

Task 7.

WebSite (based on 3 -click rule)

	Clicks	2-clicks
Start		
Finish		

WebSite (Free structure)

Clicks	2-clicks

Task 8.

WebSite (based on 3 -click rule)

	Clicks	2-clicks
Start		
Finish		

WebSite (Free structure)

Clicks	2-clicks

Task 9.

WebSite (based on 3 -click rule)

	Clicks	2-clicks
Start		
Finish		

WebSite (Free structure)

Clicks	2-clicks

Task 10.

WebSite (based on 3 -click rule)

	Clicks	2-clicks
Start		
Finish		

WebSite (Free structure)

Clicks	2-clicks

Appendix E. Quick tests for normal distribution executed with help of SPSS.

T1-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT 1	.363	20	.000	.726	20	.000
Freestructureversion. HowquicklydidyoufinishT 1	.177	20	.099	.893	20	.030

a. Lilliefors Significance Correction

T1-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT1	.358	20	.000	.609	20	.000
Freestructureversion. HowintuitivewasT1	.250	20	.002	.815	20	.001

a. Lilliefors Significance Correction

T1-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT1	.420	20	.000	.640	20	.000
Freestructureversion. HoweasywasT1	.219	20	.013	.858	20	.007

a. Lilliefors Significance Correction

T2-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT2	.383	20	.000	.524	20	.000
Freestructureversion. HowquicklydidyoufinishT2	.218	20	.013	.897	20	.035

a. Lilliefors Significance Correction

T2-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT2	.509	20	.000	.433	20	.000
Freestructureversion. HowintuitivewasT2	.181	20	.085	.877	20	.016

a. Lilliefors Significance Correction

T2-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT2	.509	20	.000	.433	20	.000
Freestructureversion. HoweasywasT2	.208	20	.023	.917	20	.089

a. Lilliefors Significance Correction

T3-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT3	.499	20	.000	.447	20	.000
Freestructureversion. HowquicklydidyoufinishT3	.184	20	.074	.881	20	.018

a. Lilliefors Significance Correction

T3-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT3	.487	20	.000	.495	20	.000
Freestructureversion. HowintuitivewasT3	.214	20	.017	.869	20	.011

a. Lilliefors Significance Correction

T3-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT3	.499	20	.000	.447	20	.000
Freestructureversion. HoweasywasT3	.237	20	.004	.819	20	.002

a. Lilliefors Significance Correction

T4-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT4	.538	20	.000	.236	20	.000
Freestructureversion. HowquicklydidyoufinishT4	.284	20	.000	.855	20	.007

a. Lilliefors Significance Correction

T4-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT4	.509	20	.000	.433	20	.000
Freestructureversion. HowintuitivewasT4	.201	20	.034	.914	20	.077

a. Lilliefors Significance Correction

T4-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT4	.527	20	.000	.351	20	.000
Freestructureversion. HoweasywasT4	.201	20	.033	.910	20	.065

a. Lilliefors Significance Correction

T5-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT5	.438	20	.000	.580	20	.000
Freestructureversion. HowquicklydidyoufinishT5	.309	20	.000	.842	20	.004

a. Lilliefors Significance Correction

T5-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT5	.450	20	.000	.583	20	.000
Freestructureversion. HowintuitivewasT5	.264	20	.001	.865	20	.010

a. Lilliefors Significance Correction

T5-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT5	.509	20	.000	.433	20	.000
Freestructureversion. HoweasywasT5	.322	20	.000	.811	20	.001

a. Lilliefors Significance Correction

T6-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT6	.502	20	.000	.440	20	.000
Freestructureversion. HowquicklydidyoufinishT6	.282	20	.000	.851	20	.005

a. Lilliefors Significance Correction

T6-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT6	.423	20	.000	.623	20	.000
Freestructureversion. HowintuitivewasT6	.309	20	.000	.753	20	.000

a. Lilliefors Significance Correction

T6-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT6	.427	20	.000	.612	20	.000
Freestructureversion. HoweasywasT6	.300	20	.000	.807	20	.001

a. Lilliefors Significance Correction

T7-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT7	.398	20	.000	.671	20	.000
Freestructureversion. HowquicklydidyoufinishT7	.241	20	.004	.867	20	.010

a. Lilliefors Significance Correction

T7-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT7	.450	20	.000	.583	20	.000
Freestructureversion. HowintuitivewasT7	.245	20	.003	.873	20	.013

a. Lilliefors Significance Correction

T7-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT7	.345	20	.000	.723	20	.000
Freestructureversion. HoweasywasT7	.286	20	.000	.867	20	.010

a. Lilliefors Significance Correction

T8-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT8	.311	20	.000	.760	20	.000
Freestructureversion. HowquicklydidyoufinishT8	.274	20	.000	.816	20	.002

a. Lilliefors Significance Correction

T8-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT8	.261	20	.001	.792	20	.001
Freestructureversion. HowintuitivewasT8	.291	20	.000	.774	20	.000

a. Lilliefors Significance Correction

T8-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT8	.284	20	.000	.773	20	.000
Freestructureversion. HoweasywasT8	.308	20	.000	.765	20	.000

a. Lilliefors Significance Correction

T9-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT9	.311	20	.000	.760	20	.000
Freestructureversion. HowquicklydidyoufinishT9	.303	20	.000	.794	20	.001

a. Lilliefors Significance Correction

T9-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT9	.388	20	.000	.686	20	.000
Freestructureversion. HowintuitivewasT9	.382	20	.000	.652	20	.000

a. Lilliefors Significance Correction

T9-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT9	.337	20	.000	.740	20	.000
Freestructureversion. HoweasywasT9	.281	20	.000	.745	20	.000

a. Lilliefors Significance Correction

T10-Q1. Rating for quickliness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowquicklydidyoufinishT10	.394	20	.000	.675	20	.000
Freestructureversion. HowquicklydidyoufinishT10	.279	20	.000	.830	20	.002

a. Lilliefors Significance Correction

T10-Q2. Rating for intuitiveness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HowintuitivewasT10	.347	20	.000	.696	20	.000
Freestructureversion. HowintuitivewasT10	.247	20	.002	.827	20	.002

a. Lilliefors Significance Correction

T10-Q3. Rating for easiness TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Threeclickversion. HoweasywasT10	.394	20	.000	.675	20	.000
Freestructureversion. HoweasywasT10	.200	20	.035	.813	20	.001

a. Lilliefors Significance Correction

FQ - Final Question TC vs FS. Kolmogorov-Smirnov / Shapiro-Wilk test.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
FinalQ.Threeclickversion. Websiteliking	.449	20	.000	.578	20	.000
FinalQ. Freestructureversion. Websiteliking	.288	20	.000	.848	20	.005

a. Lilliefors Significance Correction

Appendix F. Non parametric Wilcoxon signed-rank tests, descriptive statistics and parametric T-Tests.

T1-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowquicklydidyoufinishT 1 - Threeclickversion. HowquicklydidyoufinishT 1	Negative Ranks	8[a]	7.13	57.00
	Positive Ranks	3[b]	3.00	9.00
	Ties	9[c]		
	Total	20		

a. Freestructureversion.HowquicklydidyoufinishT1 < Threeclickversion. HowquicklydidyoufinishT1

b. Freestructureversion.HowquicklydidyoufinishT1 > Threeclickversion. HowquicklydidyoufinishT1

c. Freestructureversion.HowquicklydidyoufinishT1 = Threeclickversion. HowquicklydidyoufinishT1

Test Statistics[a]

	Freestructure version. HowquicklydidyoufinishT1 - Threeclickversion. HowquicklydidyoufinishT1
Z	-2.164[b]
Asymp. Sig. (2-tailed)	.030

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

Descriptives

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT 1	Mean		4.30	.219
	95% Confidence Interval for Mean	Lower Bound	3.84	
		Upper Bound	4.76	
	5% Trimmed Mean		4.39	
	Median		5.00	
	Variance		.958	
	Std. Deviation		.979	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		2	
	Skewness		-1.055	.512
	Kurtosis		-.208	.992
Freestructureversion. HowquicklydidyoufinishT 1	Mean		3.60	.275
	95% Confidence Interval for Mean	Lower Bound	3.02	
		Upper Bound	4.18	
	5% Trimmed Mean		3.67	
	Median		4.00	
	Variance		1.516	
	Std. Deviation		1.231	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		-.444	.512

T1-Q2. Rating for intuitiveness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowintuitivewasT1 - Threeclickversion. HowintuitivewasT1	Negative Ranks	8[a]	4.63	37.00
	Positive Ranks	1[b]	8.00	8.00
	Ties	11[c]		
	Total	20		

a. Freestructureversion.HowintuitivewasT1 < Threeclickversion.HowintuitivewasT1

b. Freestructureversion.HowintuitivewasT1 > Threeclickversion.HowintuitivewasT1

c. Freestructureversion.HowintuitivewasT1 = Threeclickversion.HowintuitivewasT1

Test Statistics[a]

	Freestructureversion. HowintuitivewasT1 - Threeclickversion. HowintuitivewasT1
Z	-1.780[b]
Asymp. Sig. (2-tailed)	.075

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

Threeclickversion. HowintuitivewasT1	Mean		4.40	.245
	95% Confidence Interval for Mean	Lower Bound	3.89	
		Upper Bound	4.91	
	5% Trimmed Mean		4.56	
	Median		5.00	
	Variance		1.200	
	Std. Deviation		1.095	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		1	
	Skewness		-2.253	.512
	Kurtosis		4.920	.992
Freestructureversion. HowintuitivewasT1	Mean		4.00	.229
	95% Confidence Interval for Mean	Lower Bound	3.52	
		Upper Bound	4.48	
	5% Trimmed Mean		4.11	
	Median		4.00	
	Variance		1.053	
	Std. Deviation		1.026	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		-1.300	.512
	Kurtosis		2.459	.992

T1-Q3. Rating for easiness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HoweasywasT1 - Threeclickversion. HoweasywasT1	Negative Ranks	9[a]	6.11	55.00
	Positive Ranks	2[b]	5.50	11.00
	Ties	9[c]		
	Total	20		

a. Freestructureversion.HoweasywasT1 < Threeclickversion.HoweasywasT1

b. Freestructureversion.HoweasywasT1 > Threeclickversion.HoweasywasT1

c. Freestructureversion.HoweasywasT1 = Threeclickversion.HoweasywasT1

Test Statistics[a]

	Freestructure version. Howeasywas T1 - Threeclickver sion. Howeasywas T1
Z	-1.996[b]
Asymp. Sig. (2-tailed)	.046

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HoweasywasT1	Mean		4.45	.211
	95% Confidence Interval for Mean	Lower Bound	4.01	
		Upper Bound	4.89	
	5% Trimmed Mean		4.56	
	Median		5.00	
	Variance		.892	
	Std. Deviation		.945	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-1.506	.512
	Kurtosis		1.059	.992
Freestructureversion. HoweasywasT1	Mean		3.85	.209
	95% Confidence Interval for Mean	Lower Bound	3.41	
		Upper Bound	4.29	
	5% Trimmed Mean		3.89	
	Median		4.00	
	Variance		.871	
	Std. Deviation		.933	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		2	
	Skewness		-.107	.512
	Kurtosis		-1.077	.992

T2-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowquicklydidyoufinishT 2 - Threeclickversion. HowquicklydidyoufinishT 2	Negative Ranks	15[a]	8.83	132.50
	Positive Ranks	1[b]	3.50	3.50
	Ties	4[c]		
	Total	20		

a. Freestructureversion.HowquicklydidyoufinishT2 < Threeclickversion. HowquicklydidyoufinishT2

b. Freestructureversion.HowquicklydidyoufinishT2 > Threeclickversion. HowquicklydidyoufinishT2

c. Freestructureversion.HowquicklydidyoufinishT2 = Threeclickversion. HowquicklydidyoufinishT2

Test Statistics[a]

	Freestructure version. Howquicklydi dyoufinishT2 - Threeclickver sion. Howquicklydi dyoufinishT2
Z	-3.377[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT2	Mean		4.55	.211
	95% Confidence Interval for Mean	Lower Bound	4.11	
		Upper Bound	4.99	
	5% Trimmed Mean		4.72	
	Median		5.00	
	Variance		.892	
	Std. Deviation		.945	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		1	
	Skewness		-3.074	.512
	Kurtosis		10.971	.992
Freestructureversion. HowquicklydidyoufinishT2	Mean		3.10	.270
	95% Confidence Interval for Mean	Lower Bound	2.53	
		Upper Bound	3.67	
	5% Trimmed Mean		3.11	
	Median		3.00	
	Variance		1.463	
	Std. Deviation		1.210	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		.186	.512
	Kurtosis		-1.107	.992

T2-Q2. Rating for intuitiveness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowintuitivewasT2 - Threeclickversion. HowintuitivewasT2	Negative Ranks	13[a]	7.00	91.00
	Positive Ranks	0[b]	.00	.00
	Ties	7[c]		
	Total	20		

a. Freestructureversion.HowintuitivewasT2 < Threeclickversion.HowintuitivewasT2

b. Freestructureversion.HowintuitivewasT2 > Threeclickversion.HowintuitivewasT2

c. Freestructureversion.HowintuitivewasT2 = Threeclickversion.HowintuitivewasT2

Test Statistics[a]

	Freestructureversion. HowintuitivewasT2 - Threeclickversion. HowintuitivewasT2
Z	-3.204[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowintuitivewasT2	Mean		4.85	.082
	95% Confidence Interval for Mean	Lower Bound	4.68	
		Upper Bound	5.02	
	5% Trimmed Mean		4.89	
	Median		5.00	
	Variance		.134	
	Std. Deviation		.366	
	Minimum		4	
	Maximum		5	
	Range		1	
	Interquartile Range		0	
	Skewness		-2.123	.512
	Kurtosis		2.776	.992
Freestructureversion. HowintuitivewasT2	Mean		3.25	.331
	95% Confidence Interval for Mean	Lower Bound	2.56	
		Upper Bound	3.94	
	5% Trimmed Mean		3.28	
	Median		3.00	
	Variance		2.197	
	Std. Deviation		1.482	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		3	
	Skewness		-.155	.512
	Kurtosis		-1.386	.992

T2-Q3. Rating for easiness. T-TEST

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Threeclickversion. HoweasywasT2	4.85	20	.366	.082
	Freestructureversion. HoweasywasT2	3.40	20	1.095	.245

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Threeclickversion. HoweasywasT2 & Freestructureversion. HoweasywasT2	20	-.105	.660

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Threeclickversion. HoweasywasT2 - Freestructureversion. HoweasywasT2	1.450	1.191	.266	.893	2.007	5.445	19	.000

Paired Samples Effect Size

			Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
Pair 1	Threeclickversion. HoweasywasT2 - Freestructureversion. HoweasywasT2	Cohen's d	1.191	1.217	.625	1.791
		Hedges' correction	1.215	1.193	.613	1.756

a. The denominator used in estimating the effect size.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

T3-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowquicklydidyoufinishT3 - Threeclickversion. HowquicklydidyoufinishT3	Negative Ranks	14[a]	7.50	105.00
	Positive Ranks	0[b]	.00	.00
	Ties	6[c]		
	Total	20		

a. Freestructureversion.HowquicklydidyoufinishT3 < Threeclickversion. HowquicklydidyoufinishT3

b. Freestructureversion.HowquicklydidyoufinishT3 > Threeclickversion. HowquicklydidyoufinishT3

c. Freestructureversion.HowquicklydidyoufinishT3 = Threeclickversion. HowquicklydidyoufinishT3

Test Statistics[a]

	Freestructureversion. HowquicklydidyoufinishT3 - Threeclickversion. HowquicklydidyoufinishT3
Z	-3.373[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT3	Mean		4.80	.117
	95% Confidence Interval for Mean	Lower Bound	4.56	
		Upper Bound	5.04	
	5% Trimmed Mean		4.89	
	Median		5.00	
	Variance		.274	
	Std. Deviation		.523	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		0	
	Skewness		-2.745	.512
	Kurtosis		7.401	.992
Freestructureversion. HowquicklydidyoufinishT3	Mean		3.65	.233
	95% Confidence Interval for Mean	Lower Bound	3.16	
		Upper Bound	4.14	
	5% Trimmed Mean		3.67	
	Median		4.00	
	Variance		1.082	
	Std. Deviation		1.040	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		2	
	Skewness		-.133	.512
	Kurtosis		-1.069	.992

T3-Q2. Rating for intuitiveness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowintuitivewasT3 - Threeclickversion. HowintuitivewasT3	Negative Ranks	14[a]	7.50	105.00
	Positive Ranks	0[b]	.00	.00
	Ties	6[c]		
	Total	20		

a. Freestructureversion.HowintuitivewasT3 < Threeclickversion.HowintuitivewasT3

b. Freestructureversion.HowintuitivewasT3 > Threeclickversion.HowintuitivewasT3

c. Freestructureversion.HowintuitivewasT3 = Threeclickversion.HowintuitivewasT3

Test Statistics[a]

	Freestructure version. Howintuitivew asT3 - Threeclickver sion. Howintuitivew asT3
Z	-3.407[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowintuitivewasT3	Mean		4.80	.092
	95% Confidence Interval for Mean	Lower Bound	4.61	
		Upper Bound	4.99	
	5% Trimmed Mean		4.83	
	Median		5.00	
	Variance		.168	
	Std. Deviation		.410	
	Minimum		4	
	Maximum		5	
	Range		1	
	Interquartile Range		0	
	Skewness		-1.624	.512
	Kurtosis		.699	.992
Freestructureversion. HowintuitivewasT3	Mean		3.80	.200
	95% Confidence Interval for Mean	Lower Bound	3.38	
		Upper Bound	4.22	
	5% Trimmed Mean		3.83	
	Median		4.00	
	Variance		.800	
	Std. Deviation		.894	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		2	
	Skewness		-.059	.512
	Kurtosis		-.859	.992

T3-Q3. Rating for easiness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HoweasywasT3 - Threeclickversion. HoweasywasT3	Negative Ranks	11[a]	6.00	66.00
	Positive Ranks	0[b]	.00	.00
	Ties	9[c]		
	Total	20		

a. Freestructureversion.HoweasywasT3 < Threeclickversion.HoweasywasT3

b. Freestructureversion.HoweasywasT3 > Threeclickversion.HoweasywasT3

c. Freestructureversion.HoweasywasT3 = Threeclickversion.HoweasywasT3

Test Statistics[a]

	Freestructureversion. HoweasywasT3 - Threeclickversion. HoweasywasT3
Z	-3.002[b]
Asymp. Sig. (2-tailed)	.003

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HoweasywasT3	Mean		4.80	.117
	95% Confidence Interval for Mean	Lower Bound	4.56	
		Upper Bound	5.04	
	5% Trimmed Mean		4.89	
	Median		5.00	
	Variance		.274	
	Std. Deviation		.523	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		0	
	Skewness		-2.745	.512
	Kurtosis		7.401	.992
Freestructureversion. HoweasywasT3	Mean		3.90	.250
	95% Confidence Interval for Mean	Lower Bound	3.38	
		Upper Bound	4.42	
	5% Trimmed Mean		4.00	
	Median		4.00	
	Variance		1.253	
	Std. Deviation		1.119	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		-.786	.512
	Kurtosis		.468	.992

T4-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion.HowquicklydidyoufinishT4 - Threeclickversion.HowquicklydidyoufinishT4	Negative Ranks	18[a]	9.50	171.00
	Positive Ranks	0[b]	.00	.00
	Ties	2[c]		
	Total	20		

a. Freestructureversion.HowquicklydidyoufinishT4 < Threeclickversion.HowquicklydidyoufinishT4

b. Freestructureversion.HowquicklydidyoufinishT4 > Threeclickversion.HowquicklydidyoufinishT4

c. Freestructureversion.HowquicklydidyoufinishT4 = Threeclickversion.HowquicklydidyoufinishT4

Test Statistics[a]

	Freestructureversion.HowquicklydidyoufinishT4 - Threeclickversion.HowquicklydidyoufinishT4
Z	-3.782[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT 4	Mean		4.95	.050
	95% Confidence Interval for Mean	Lower Bound	4.85	
		Upper Bound	5.05	
	5% Trimmed Mean		5.00	
	Median		5.00	
	Variance		.050	
	Std. Deviation		.224	
	Minimum		4	
	Maximum		5	
	Range		1	
	Interquartile Range		0	
	Skewness		-4.472	.512
	Kurtosis		20.000	.992
Freestructureversion. HowquicklydidyoufinishT 4	Mean		3.05	.276
	95% Confidence Interval for Mean	Lower Bound	2.47	
		Upper Bound	3.63	
	5% Trimmed Mean		3.06	
	Median		3.00	
	Variance		1.524	
	Std. Deviation		1.234	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		1	
	Skewness		-.477	.512
	Kurtosis		-.315	.992

T4-Q2. Rating for intuitiveness. T-TEST

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Threeclickversion. HowintuitivewasT4	4.85	20	.366	.082
	Freestructureversion. HowintuitivewasT4	3.30	20	1.174	.263

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Threeclickversion. HowintuitivewasT4 & Freestructureversion. HowintuitivewasT4	20	.477	.033

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Threeclickversion. HowintuitivewasT4 - Freestructureversion. HowintuitivewasT4	1.550	1.050	.235	1.059	2.041	6.601	19	.000

Paired Samples Effect Size

			Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
Pair 1	Threeclickversion. HowintuitivewasT4 - Freestructureversion. HowintuitivewasT4	Cohen's d	1.050	1.476	.827	2.106
		Hedges' correction	1.071	1.447	.811	2.065

a. The denominator used in estimating the effect size.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

T4-Q3. Rating for easiness. T-TEST

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Threeclickversion. HoweasywasT4	4.90	20	.308	.069
	Freestructureversion. HoweasywasT4	3.40	20	1.046	.234

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Threeclickversion. HoweasywasT4 & Freestructureversion. HoweasywasT4	20	.294	.208

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Threeclickversion. HoweasywasT4 - Freestructureversion. HoweasywasT4	1.500	1.000	.224	1.032	1.968	6.708	19	.000

Paired Samples Effect Size

			Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
Pair 1	Threeclickversion. HoweasywasT4 - Freestructureversion. HoweasywasT4	Cohen's d	1.000	1.500	.846	2.136
		Hedges' correction	1.020	1.470	.829	2.093

a. The denominator used in estimating the effect size.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

T5-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowquicklydidyoufinishT5 - Threeclickversion. HowquicklydidyoufinishT5	Negative Ranks	16[a]	9.13	146.00
	Positive Ranks	1[b]	7.00	7.00
	Ties	3[c]		
	Total	20		

a. Freestructureversion.HowquicklydidyoufinishT5 < Threeclickversion. HowquicklydidyoufinishT5

b. Freestructureversion.HowquicklydidyoufinishT5 > Threeclickversion. HowquicklydidyoufinishT5

c. Freestructureversion.HowquicklydidyoufinishT5 = Threeclickversion. HowquicklydidyoufinishT5

Test Statistics[a]

	Freestructureversion. HowquicklydidyoufinishT5 - Threeclickversion. HowquicklydidyoufinishT5
Z	-3.474[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT5	Mean		4.70	.105
	95% Confidence Interval for Mean	Lower Bound	4.48	
		Upper Bound	4.92	
	5% Trimmed Mean		4.72	
	Median		5.00	
	Variance		.221	
	Std. Deviation		.470	
	Minimum		4	
	Maximum		5	
	Range		1	
	Interquartile Range		1	
	Skewness		-.945	.512
	Kurtosis		-1.242	.992
Freestructureversion. HowquicklydidyoufinishT5	Mean		3.70	.164
	95% Confidence Interval for Mean	Lower Bound	3.36	
		Upper Bound	4.04	
	5% Trimmed Mean		3.72	
	Median		4.00	
	Variance		.537	
	Std. Deviation		.733	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-.339	.512
	Kurtosis		.370	.992

T5-Q2. Rating for intuitiveness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowintuitivewasT5 - Threeclickversion. HowintuitivewasT5	Negative Ranks	14[a]	8.11	113.50
	Positive Ranks	1[b]	6.50	6.50
	Ties	5[c]		
	Total	20		

a. Freestructureversion.HowintuitivewasT5 < Threeclickversion.HowintuitivewasT5

b. Freestructureversion.HowintuitivewasT5 > Threeclickversion.HowintuitivewasT5

c. Freestructureversion.HowintuitivewasT5 = Threeclickversion.HowintuitivewasT5

Test Statistics[a]

	Freestructure version. Howintuitivew asT5 - Threeclickver sion. Howintuitivew asT5
Z	-3.231[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowintuitivewasT5	Mean		4.70	.128
	95% Confidence Interval for Mean	Lower Bound	4.43	
		Upper Bound	4.97	
	5% Trimmed Mean		4.78	
	Median		5.00	
	Variance		.326	
	Std. Deviation		.571	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-1.845	.512
	Kurtosis		2.861	.992
Freestructureversion. HowintuitivewasT5	Mean		3.85	.209
	95% Confidence Interval for Mean	Lower Bound	3.41	
		Upper Bound	4.29	
	5% Trimmed Mean		3.89	
	Median		4.00	
	Variance		.871	
	Std. Deviation		.933	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		2	
	Skewness		-.538	.512
	Kurtosis		-.277	.992

T5-Q3. Rating for easiness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HoweasywasT5 - Threeclickversion. HoweasywasT5	Negative Ranks	14[a]	8.14	114.00
	Positive Ranks	1[b]	6.00	6.00
	Ties	5[c]		
	Total	20		

a. Freestructureversion.HoweasywasT5 < Threeclickversion.HoweasywasT5

b. Freestructureversion.HoweasywasT5 > Threeclickversion.HoweasywasT5

c. Freestructureversion.HoweasywasT5 = Threeclickversion.HoweasywasT5

Test Statistics[a]

	Freestructure version. Howeasywas T5 - Threeclickver sion. Howeasywas T5
Z	-3.216[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HoweasywasT5	Mean		4.85	.082
	95% Confidence Interval for Mean	Lower Bound	4.68	
		Upper Bound	5.02	
	5% Trimmed Mean		4.89	
	Median		5.00	
	Variance		.134	
	Std. Deviation		.366	
	Minimum		4	
	Maximum		5	
	Range		1	
	Interquartile Range		0	
	Skewness		-2.123	.512
	Kurtosis		2.776	.992
Freestructureversion. HoweasywasT5	Mean		3.95	.198
	95% Confidence Interval for Mean	Lower Bound	3.53	
		Upper Bound	4.37	
	5% Trimmed Mean		4.00	
	Median		4.00	
	Variance		.787	
	Std. Deviation		.887	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-.901	.512
	Kurtosis		.734	.992

T6-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowquicklydidyoufinishT6 - Threeclickversion. HowquicklydidyoufinishT6	Negative Ranks	14[a]	8.21	115.00
	Positive Ranks	1[b]	5.00	5.00
	Ties	5[c]		
	Total	20		

a. Freestructureversion.HowquicklydidyoufinishT6 < Threeclickversion. HowquicklydidyoufinishT6

b. Freestructureversion.HowquicklydidyoufinishT6 > Threeclickversion. HowquicklydidyoufinishT6

c. Freestructureversion.HowquicklydidyoufinishT6 = Threeclickversion. HowquicklydidyoufinishT6

Test Statistics[a]

	Freestructureversion. HowquicklydidyoufinishT6 - Threeclickversion. HowquicklydidyoufinishT6
Z	-3.208[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT6	Mean		4.75	.143
	95% Confidence Interval for Mean	Lower Bound	4.45	
		Upper Bound	5.05	
	5% Trimmed Mean		4.83	
	Median		5.00	
	Variance		.408	
	Std. Deviation		.639	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		0	
	Skewness		-2.441	.512
	Kurtosis		4.771	.992
Freestructureversion. HowquicklydidyoufinishT6	Mean		3.65	.233
	95% Confidence Interval for Mean	Lower Bound	3.16	
		Upper Bound	4.14	
	5% Trimmed Mean		3.67	
	Median		4.00	
	Variance		1.082	
	Std. Deviation		1.040	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-.445	.512
	Kurtosis		-.847	.992

T6-Q2. Rating for intuitiveness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowintuitivewasT6 - Threeclickversion. HowintuitivewasT6	Negative Ranks	9[a]	6.11	55.00
	Positive Ranks	2[b]	5.50	11.00
	Ties	9[c]		
	Total	20		

a. Freestructureversion.HowintuitivewasT6 < Threeclickversion.HowintuitivewasT6

b. Freestructureversion.HowintuitivewasT6 > Threeclickversion.HowintuitivewasT6

c. Freestructureversion.HowintuitivewasT6 = Threeclickversion.HowintuitivewasT6

Test Statistics[a]

	Freestructure version. Howintuitivew asT6 - Threeclickver sion. Howintuitivew asT6
Z	-2.138[b]
Asymp. Sig. (2-tailed)	.033

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowintuitivewasT6	Mean		4.55	.170
	95% Confidence Interval for Mean	Lower Bound	4.19	
		Upper Bound	4.91	
	5% Trimmed Mean		4.61	
	Median		5.00	
	Variance		.576	
	Std. Deviation		.759	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-1.389	.512
	Kurtosis		.412	.992
Freestructureversion. HowintuitivewasT6	Mean		4.10	.216
	95% Confidence Interval for Mean	Lower Bound	3.65	
		Upper Bound	4.55	
	5% Trimmed Mean		4.22	
	Median		4.00	
	Variance		.937	
	Std. Deviation		.968	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		1	
	Skewness		-1.764	.512
	Kurtosis		4.681	.992

T6-Q3. Rating for easiness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HoweasywasT6 - Threeclickversion. HoweasywasT6	Negative Ranks	9[a]	6.83	61.50
	Positive Ranks	3[b]	5.50	16.50
	Ties	8[c]		
	Total	20		

a. Freestructureversion.HoweasywasT6 < Threeclickversion.HoweasywasT6

b. Freestructureversion.HoweasywasT6 > Threeclickversion.HoweasywasT6

c. Freestructureversion.HoweasywasT6 = Threeclickversion.HoweasywasT6

Test Statistics[a]

	Freestructure version. Howeasywas T6 - Threeclickver sion. Howeasywas T6
Z	-1.890[b]
Asymp. Sig. (2-tailed)	.059

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HoweasywasT6	Mean		4.50	.185
	95% Confidence Interval for Mean	Lower Bound	4.11	
		Upper Bound	4.89	
	5% Trimmed Mean		4.56	
	Median		5.00	
	Variance		.684	
	Std. Deviation		.827	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-1.240	.512
	Kurtosis		-.260	.992
Freestructureversion. HoweasywasT6	Mean		4.10	.176
	95% Confidence Interval for Mean	Lower Bound	3.73	
		Upper Bound	4.47	
	5% Trimmed Mean		4.17	
	Median		4.00	
	Variance		.621	
	Std. Deviation		.788	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-.903	.512
	Kurtosis		1.389	.992

T7-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowquicklydidyoufinishT7 - Threeclickversion. HowquicklydidyoufinishT7	Negative Ranks	13[a]	7.73	100.50
	Positive Ranks	1[b]	4.50	4.50
	Ties	6[c]		
	Total	20		

a. Freestructureversion.HowquicklydidyoufinishT7 < Threeclickversion. HowquicklydidyoufinishT7

b. Freestructureversion.HowquicklydidyoufinishT7 > Threeclickversion. HowquicklydidyoufinishT7

c. Freestructureversion.HowquicklydidyoufinishT7 = Threeclickversion. HowquicklydidyoufinishT7

Test Statistics[a]

	Freestructureversion. HowquicklydidyoufinishT7 - Threeclickversion. HowquicklydidyoufinishT7
Z	-3.106[b]
Asymp. Sig. (2-tailed)	.002

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT7	Mean		4.60	.134
	95% Confidence Interval for Mean	Lower Bound	4.32	
		Upper Bound	4.88	
	5% Trimmed Mean		4.67	
	Median		5.00	
	Variance		.358	
	Std. Deviation		.598	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-1.245	.512
	Kurtosis		.783	.992
Freestructureversion. HowquicklydidyoufinishT7	Mean		3.70	.193
	95% Confidence Interval for Mean	Lower Bound	3.30	
		Upper Bound	4.10	
	5% Trimmed Mean		3.72	
	Median		4.00	
	Variance		.747	
	Std. Deviation		.865	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		.119	.512
	Kurtosis		-.726	.992

T7-Q2. Rating for intuitiveness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowintuitivewasT7 - Threeclickversion. HowintuitivewasT7	Negative Ranks	12[a]	7.25	87.00
	Positive Ranks	1[b]	4.00	4.00
	Ties	7[c]		
	Total	20		

a. Freestructureversion.HowintuitivewasT7 < Threeclickversion.HowintuitivewasT7

b. Freestructureversion.HowintuitivewasT7 > Threeclickversion.HowintuitivewasT7

c. Freestructureversion.HowintuitivewasT7 = Threeclickversion.HowintuitivewasT7

Test Statistics[a]

	Freestructure version. Howintuitivew asT7 - Threeclickver sion. Howintuitivew asT7
Z	-2.970[b]
Asymp. Sig. (2-tailed)	.003

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowintuitivewasT7	Mean		4.70	.128
	95% Confidence Interval for Mean	Lower Bound	4.43	
		Upper Bound	4.97	
	5% Trimmed Mean		4.78	
	Median		5.00	
	Variance		.326	
	Std. Deviation		.571	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-1.845	.512
	Kurtosis		2.861	.992
Freestructureversion. HowintuitivewasT7	Mean		3.80	.186
	95% Confidence Interval for Mean	Lower Bound	3.41	
		Upper Bound	4.19	
	5% Trimmed Mean		3.83	
	Median		4.00	
	Variance		.695	
	Std. Deviation		.834	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-.194	.512
	Kurtosis		-.357	.992

T7-Q3. Rating for easiness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HoweasywasT7 - Threeclickversion. HoweasywasT7	Negative Ranks	11[a]	6.00	66.00
	Positive Ranks	0[b]	.00	.00
	Ties	9[c]		
	Total	20		

a. Freestructureversion.HoweasywasT7 < Threeclickversion.HoweasywasT7

b. Freestructureversion.HoweasywasT7 > Threeclickversion.HoweasywasT7

c. Freestructureversion.HoweasywasT7 = Threeclickversion.HoweasywasT7

Test Statistics[a]

	Freestructureversion. HoweasywasT7 - Threeclickversion. HoweasywasT7
Z	-3.025[b]
Asymp. Sig. (2-tailed)	.002

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HoweasywasT7	Mean		4.50	.136
	95% Confidence Interval for Mean	Lower Bound	4.22	
		Upper Bound	4.78	
	5% Trimmed Mean		4.56	
	Median		5.00	
	Variance		.368	
	Std. Deviation		.607	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-.785	.512
	Kurtosis		-.213	.992
Freestructureversion. HoweasywasT7	Mean		3.70	.193
	95% Confidence Interval for Mean	Lower Bound	3.30	
		Upper Bound	4.10	
	5% Trimmed Mean		3.72	
	Median		4.00	
	Variance		.747	
	Std. Deviation		.865	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-.424	.512
	Kurtosis		-.105	.992

T8-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Threeclickversion. HowquicklydidyoufinishT9 - Freestructureversion. HowquicklydidyoufinishT8	Negative Ranks	3[a]	5.50	16.50
	Positive Ranks	8[b]	6.19	49.50
	Ties	9[c]		
	Total	20		

a. Threeclickversion.HowquicklydidyoufinishT9 < Freestructureversion. HowquicklydidyoufinishT8

b. Threeclickversion.HowquicklydidyoufinishT9 > Freestructureversion. HowquicklydidyoufinishT8

c. Threeclickversion.HowquicklydidyoufinishT9 = Freestructureversion. HowquicklydidyoufinishT8

Test Statistics[a]

	Threeclickversion. HowquicklydidyoufinishT9 - Freestructureversion. HowquicklydidyoufinishT8
Z	-1.604[b]
Asymp. Sig. (2-tailed)	.109

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT8	Mean		4.40	.152
	95% Confidence Interval for Mean	Lower Bound	4.08	
		Upper Bound	4.72	
	5% Trimmed Mean		4.44	
	Median		4.50	
	Variance		.463	
	Std. Deviation		.681	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-.712	.512
	Kurtosis		-.446	.992
Freestructureversion. HowquicklydidyoufinishT8	Mean		4.10	.216
	95% Confidence Interval for Mean	Lower Bound	3.65	
		Upper Bound	4.55	
	5% Trimmed Mean		4.17	
	Median		4.00	
	Variance		.937	
	Std. Deviation		.968	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		2	
	Skewness		-.604	.512
	Kurtosis		-.850	.992

T8-Q2. Rating for intuitiveness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowintuitivewasT8 - Threeclickversion. HowintuitivewasT8	Negative Ranks	3[a]	4.00	12.00
	Positive Ranks	4[b]	4.00	16.00
	Ties	13[c]		
	Total	20		

a. Freestructureversion.HowintuitivewasT8 < Threeclickversion.HowintuitivewasT8

b. Freestructureversion.HowintuitivewasT8 > Threeclickversion.HowintuitivewasT8

c. Freestructureversion.HowintuitivewasT8 = Threeclickversion.HowintuitivewasT8

Test Statistics[a]

	Freestructure version. Howintuitivew asT8 - Threeclickver sion. Howintuitivew asT8
Z	-.378[b]
Asymp. Sig. (2-tailed)	.705

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowintuitivewasT8	Mean		4.25	.190
	95% Confidence Interval for Mean	Lower Bound	3.85	
		Upper Bound	4.65	
	5% Trimmed Mean		4.33	
	Median		4.00	
	Variance		.724	
	Std. Deviation		.851	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-1.104	.512
	Kurtosis		1.067	.992
Freestructureversion. HowintuitivewasT8	Mean		4.30	.193
	95% Confidence Interval for Mean	Lower Bound	3.90	
		Upper Bound	4.70	
	5% Trimmed Mean		4.39	
	Median		4.50	
	Variance		.747	
	Std. Deviation		.865	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-1.206	.512
	Kurtosis		1.137	.992

T8-Q3. Rating for easiness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HoweasywasT8 - Threeclickversion. HoweasywasT8	Negative Ranks	3[a]	3.50	10.50
	Positive Ranks	3[b]	3.50	10.50
	Ties	14[c]		
	Total	20		

a. Freestructureversion.HoweasywasT8 < Threeclickversion.HoweasywasT8

b. Freestructureversion.HoweasywasT8 > Threeclickversion.HoweasywasT8

c. Freestructureversion.HoweasywasT8 = Threeclickversion.HoweasywasT8

Test Statistics[a]

	Freestructureversion. HoweasywasT8 - Threeclickversion. HoweasywasT8
Z	.000[b]
Asymp. Sig. (2-tailed)	1.000

a. Wilcoxon Signed Ranks Test

b. The sum of negative ranks equals the sum of positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HoweasywasT8	Mean		4.35	.150
	95% Confidence Interval for Mean	Lower Bound	4.04	
		Upper Bound	4.66	
	5% Trimmed Mean		4.39	
	Median		4.00	
	Variance		.450	
	Std. Deviation		.671	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-.549	.512
	Kurtosis		-.548	.992
Freestructureversion. HoweasywasT8	Mean		4.35	.167
	95% Confidence Interval for Mean	Lower Bound	4.00	
		Upper Bound	4.70	
	5% Trimmed Mean		4.39	
	Median		4.50	
	Variance		.555	
	Std. Deviation		.745	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-.697	.512
	Kurtosis		-.762	.992

T9-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowquicklydidyoufinishT9 - Threeclickversion. HowquicklydidyoufinishT9	Negative Ranks	7[a]	6.14	43.00
	Positive Ranks	3[b]	4.00	12.00
	Ties	10[c]		
	Total	20		

a. Freestructureversion.HowquicklydidyoufinishT9 < Threeclickversion. HowquicklydidyoufinishT9

b. Freestructureversion.HowquicklydidyoufinishT9 > Threeclickversion. HowquicklydidyoufinishT9

c. Freestructureversion.HowquicklydidyoufinishT9 = Threeclickversion. HowquicklydidyoufinishT9

Test Statistics[a]

	Freestructureversion. HowquicklydidyoufinishT9 - Threeclickversion. HowquicklydidyoufinishT9
Z	-1.642[b]
Asymp. Sig. (2-tailed)	.101

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT9	Mean		4.40	.152
	95% Confidence Interval for Mean	Lower Bound	4.08	
		Upper Bound	4.72	
	5% Trimmed Mean		4.44	
	Median		4.50	
	Variance		.463	
	Std. Deviation		.681	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-.712	.512
	Kurtosis		-.446	.992
Freestructureversion. HowquicklydidyoufinishT9	Mean		3.95	.276
	95% Confidence Interval for Mean	Lower Bound	3.37	
		Upper Bound	4.53	
	5% Trimmed Mean		4.06	
	Median		4.50	
	Variance		1.524	
	Std. Deviation		1.234	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		-.829	.512
	Kurtosis		-.202	.992

T9-Q2. Rating for intuitiveness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowintuitivewasT9 - Threeclickversion. HowintuitivewasT9	Negative Ranks	4[a]	5.00	20.00
	Positive Ranks	4[b]	4.00	16.00
	Ties	12[c]		
	Total	20		

a. Freestructureversion.HowintuitivewasT9 < Threeclickversion.HowintuitivewasT9

b. Freestructureversion.HowintuitivewasT9 > Threeclickversion.HowintuitivewasT9

c. Freestructureversion.HowintuitivewasT9 = Threeclickversion.HowintuitivewasT9

Test Statistics[a]

	Freestructureversion. HowintuitivewasT9 - Threeclickversion. HowintuitivewasT9
Z	-.284[b]
Asymp. Sig. (2-tailed)	.776

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowintuitivewasT9	Mean		4.40	.210
	95% Confidence Interval for Mean	Lower Bound	3.96	
		Upper Bound	4.84	
	5% Trimmed Mean		4.50	
	Median		5.00	
	Variance		.884	
	Std. Deviation		.940	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-1.367	.512
	Kurtosis		.754	.992
Freestructureversion. HowintuitivewasT9	Mean		4.30	.252
	95% Confidence Interval for Mean	Lower Bound	3.77	
		Upper Bound	4.83	
	5% Trimmed Mean		4.39	
	Median		5.00	
	Variance		1.274	
	Std. Deviation		1.129	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-1.396	.512
	Kurtosis		.466	.992

T9-Q3. Rating for easiness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HoweasywasT9 - Threeclickversion. HoweasywasT9	Negative Ranks	5[a]	6.50	32.50
	Positive Ranks	5[b]	4.50	22.50
	Ties	10[c]		
	Total	20		

a. Freestructureversion.HoweasywasT9 < Threeclickversion.HoweasywasT9

b. Freestructureversion.HoweasywasT9 > Threeclickversion.HoweasywasT9

c. Freestructureversion.HoweasywasT9 = Threeclickversion.HoweasywasT9

Test Statistics[a]

	Freestructureversion. HoweasywasT9 - Threeclickversion. HoweasywasT9
Z	-.540[b]
Asymp. Sig. (2-tailed)	.589

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HoweasywasT9	Mean		4.40	.169
	95% Confidence Interval for Mean	Lower Bound	4.05	
		Upper Bound	4.75	
	5% Trimmed Mean		4.44	
	Median		5.00	
	Variance		.568	
	Std. Deviation		.754	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-.851	.512
	Kurtosis		-.609	.992
Freestructureversion. HoweasywasT9	Mean		4.25	.216
	95% Confidence Interval for Mean	Lower Bound	3.80	
		Upper Bound	4.70	
	5% Trimmed Mean		4.33	
	Median		4.50	
	Variance		.934	
	Std. Deviation		.967	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-1.336	.512
	Kurtosis		1.170	.992

T10-Q1. Rating for quickliness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowquicklydidyoufinishT10 - Threeclickversion. HowquicklydidyoufinishT10	Negative Ranks	11[a]	7.36	81.00
	Positive Ranks	2[b]	5.00	10.00
	Ties	7[c]		
	Total	20		

a. Freestructureversion.HowquicklydidyoufinishT10 < Threeclickversion. HowquicklydidyoufinishT10

b. Freestructureversion.HowquicklydidyoufinishT10 > Threeclickversion. HowquicklydidyoufinishT10

c. Freestructureversion.HowquicklydidyoufinishT10 = Threeclickversion. HowquicklydidyoufinishT10

Test Statistics[a]

	Freestructureversion. HowquicklydidyoufinishT10 - Threeclickversion. HowquicklydidyoufinishT10
Z	-2.578[b]
Asymp. Sig. (2-tailed)	.010

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowquicklydidyoufinishT10	Mean		4.55	.153
	95% Confidence Interval for Mean	Lower Bound	4.23	
		Upper Bound	4.87	
	5% Trimmed Mean		4.61	
	Median		5.00	
	Variance		.471	
	Std. Deviation		.686	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-1.283	.512
	Kurtosis		.542	.992
Freestructureversion. HowquicklydidyoufinishT10	Mean		3.75	.280
	95% Confidence Interval for Mean	Lower Bound	3.16	
		Upper Bound	4.34	
	5% Trimmed Mean		3.83	
	Median		4.00	
	Variance		1.566	
	Std. Deviation		1.251	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		-1.086	.512
	Kurtosis		.568	.992

T10-Q2. Rating for intuitiveness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HowintuitivewasT10 - Threeclickversion. HowintuitivewasT10	Negative Ranks	9[a]	7.17	64.50
	Positive Ranks	3[b]	4.50	13.50
	Ties	8[c]		
	Total	20		

a. Freestructureversion.HowintuitivewasT10 < Threeclickversion.HowintuitivewasT10

b. Freestructureversion.HowintuitivewasT10 > Threeclickversion.HowintuitivewasT10

c. Freestructureversion.HowintuitivewasT10 = Threeclickversion.HowintuitivewasT10

Test Statistics[a]

	Freestructureversion. HowintuitivewasT10 - Threeclickversion. HowintuitivewasT10
Z	-2.070[b]
Asymp. Sig. (2-tailed)	.038

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HowintuitivewasT10	Mean		4.45	.185
	95% Confidence Interval for Mean	Lower Bound	4.06	
		Upper Bound	4.84	
	5% Trimmed Mean		4.56	
	Median		5.00	
	Variance		.682	
	Std. Deviation		.826	
	Minimum		2	
	Maximum		5	
	Range		3	
	Interquartile Range		1	
	Skewness		-1.695	.512
	Kurtosis		2.960	.992
Freestructureversion. HowintuitivewasT10	Mean		3.85	.284
	95% Confidence Interval for Mean	Lower Bound	3.26	
		Upper Bound	4.44	
	5% Trimmed Mean		3.94	
	Median		4.00	
	Variance		1.608	
	Std. Deviation		1.268	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		-.894	.512
	Kurtosis		-.294	.992

T10-Q3. Rating for easiness. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
Freestructureversion. HoweasywasT10 - Threeclickversion. HoweasywasT10	Negative Ranks	10[a]	6.80	68.00
	Positive Ranks	2[b]	5.00	10.00
	Ties	8[c]		
	Total	20		

a. Freestructureversion.HoweasywasT10 < Threeclickversion.HoweasywasT10

b. Freestructureversion.HoweasywasT10 > Threeclickversion.HoweasywasT10

c. Freestructureversion.HoweasywasT10 = Threeclickversion.HoweasywasT10

Test Statistics[a]

	Freestructureversion. HoweasywasT10 - Threeclickversion. HoweasywasT10
Z	-2.392[b]
Asymp. Sig. (2-tailed)	.017

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
Threeclickversion. HoweasywasT10	Mean		4.55	.153
	95% Confidence Interval for Mean	Lower Bound	4.23	
		Upper Bound	4.87	
	5% Trimmed Mean		4.61	
	Median		5.00	
	Variance		.471	
	Std. Deviation		.686	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-1.283	.512
	Kurtosis		.542	.992
Freestructureversion. HoweasywasT10	Mean		4.00	.178
	95% Confidence Interval for Mean	Lower Bound	3.63	
		Upper Bound	4.37	
	5% Trimmed Mean		4.00	
	Median		4.00	
	Variance		.632	
	Std. Deviation		.795	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		2	
	Skewness		.000	.512
	Kurtosis		-1.366	.992

FQ - Final Question. Wilcoxon signed-rank test.

Ranks

		N	Mean Rank	Sum of Ranks
FinalQ. Freestructureversion. Websiteliking - FinalQ. Threeclickversion. Websiteliking	Negative Ranks	15[a]	8.73	131.00
	Positive Ranks	1[b]	5.00	5.00
	Ties	4[c]		
	Total	20		

a. FinalQ.Freestructureversion.Websiteliking < FinalQ.Threeclickversion. Websiteliking

b. FinalQ.Freestructureversion.Websiteliking > FinalQ.Threeclickversion. Websiteliking

c. FinalQ.Freestructureversion.Websiteliking = FinalQ.Threeclickversion. Websiteliking

Test Statistics[a]

	FinalQ. Freestructure version. Websiteliking - FinalQ. Threeclickver sion. Websiteliking
Z	-3.331[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Descriptive statistics.

			Statistic	Std. Error
FinalQ.Threeclickversion. Websiteliking	Mean		4.65	.150
	95% Confidence Interval for Mean	Lower Bound	4.34	
		Upper Bound	4.96	
	5% Trimmed Mean		4.72	
	Median		5.00	
	Variance		.450	
	Std. Deviation		.671	
	Minimum		3	
	Maximum		5	
	Range		2	
	Interquartile Range		1	
	Skewness		-1.775	.512
	Kurtosis		2.020	.992
FinalQ. Freestructureversion. Websiteliking	Mean		3.40	.210
	95% Confidence Interval for Mean	Lower Bound	2.96	
		Upper Bound	3.84	
	5% Trimmed Mean		3.44	
	Median		4.00	
	Variance		.884	
	Std. Deviation		.940	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		1	
	Skewness		-.945	.512
	Kurtosis		.976	.992