UNIVERSITY OF TWENTE.

USABILITY AND USER EXPERIENCE DESIGN ANALYSIS ON A UNIVERSITY WEBSITE

A usability and user experience design analysis of an internationally oriented university website; explaining the different click through rates of different studies

> Jeroen G. Mombarg <u>i.g.mombarg@student.utwente.nl</u> 11-03-2021 Master of Science in Business Administration University of Twente, The Netherlands Supervisors: E. Constantinides, S.A. De Vries

Abstract

This study investigates relationship between the user experience design, usability and the click through rate of an international oriented university website. These relationships are identified based on online patterns and the user behaviour on the university website. The high-converting pages of two similar studies have been identified. Top pages of the high-converting study are more focused on broad-information, whereas the pages of the low-converting study are more focused on the in-depth-information. These pages formed the basis of the user experience design and usability analysis. With the analysis of these pages, relationship have been identified and marked as relevant or irrelevant. The internal navigability of a website has been identified as the major relevant relationship between the user experience design, usability and the click through rate. The usability of webpages is a good auxiliary for graphic design and the navigability. The main reason of the discrepancies in the different click through rates is the lack of usability and a less user-friendly design of the high converting pages of the less-converting study. With the analysis and the practical implications, valuable information is given to improve these pages. Also, an integrated model is presented which can be used in the future.

Acknowledgements

Firstly, I would like to thank my supervisors, E. Constantinides & S.A. De Vries for their professional support throughout this research. Secondly, I want to thank the Marketing and Communication department, and F. Metzner in particular, for providing me access to the data analytic tool and giving me guidelines to retrieve the most valuable data.

Keywords

Usability, User Experience, University Marketing, Student Admission, Online Student Behaviour, Click Through Rate, User Design, Website Design, Digital Marketing

1. Introduction

Over the past couple of decades, the online presence of companies and organizations has been extensively grown. The number of online users has grown simultaneously. All these millions of users are: looking for online information, entertainment, shopping and are doing many things more. In general, all companies and organizations benefit from the number of users visiting and interacting with their webpages. The quality of information makes the visitor stay longer, and studies have to identify what concepts do influence the behaviour of the visitor of the website (Kim et al., (2008); Lemon & Verhoef, (2016); Tseng et al., (1999)). The metrics used by the authors and concepts have been grouped as 'usability'. Usability has many different definitions, but in general is usability, according to ISO9241 'The effectiveness, efficiency and satisfaction with which specified users achieve specified goals in particular environments' (*Usability: Definitions and concepts*, 2018). Usability may increase the number of transactions on a website, due to the ease of reaching the goal set in the perspective of the visitor.

The percentage of website visitors that reach a goal set, is known as the conversion rate of that specific goal. When that specific goal is to click to another page or website, this is known as the 'Click through Rate' (CTR). A conversion can be a physical or online purchase, but also a PDF-download for example. Conversion rates and goals are different per website. Websites with a low conversion rate may not be fully interested in making as many transactions as possible. For example, e-commerce websites are interested in making a lot of purchases, because that is their business model. There are also websites, university websites, that have a more informative function. At the end, university websites are not only informative. Potential university students need to gather information and apply to the university, via the university website. For these types of websites conversion rates are important, but not as important as for e-commerce websites. Improving the conversion rate means that more visitors are reaching a certain goal on the website (Di Fatta et al., 2018).

For potential university students, the website of the university may be the first interaction with the university. The competition between universities is very high, especially in The Netherlands, where there are many universities available which are located close to each other. This makes it easy for potential Dutch university students to choose a university of their preference which meets their requirements. In general, online presence is vital for companies and organizations, which is the same for universities. According to (Kalia et al., 2014), B2C firms that are not present online, they do not appear to exist. Traditional firms that are expanding their business online, should deliver a high quality of the online experience. Poorly designed and dysfunctional websites are a potential threat for the online experience, but also for the offline activities (Constantinides, 2004). Universities should invest in a website that is of good quality and which looks professional. Strategic brand management has been changed over the past couple of years for universities. Traditional university marketing models are not eligible anymore. According to Lim et al., (2020), online promotion is a vital aspect of the new university marketing mix.

Currently, there is a lack of online information about the admission processes of (potential) university students. The majority of the studies , for example the study of (Sternberg et al., 2012), are focused on the internal admission process (the registration systems of the university itself) or the university choice of students (Azzone & Soncin, 2020).

The majority of articles about this subject (students and its university choice) is about (under) graduate selection of students (Guney, 2009; Hardgrave et al., 1994; Rolfe et al., 1995). Another well represented focus of study about interviewing and testing potential university students (Cameron & MacKeigan, 2012; Lemon & Verhoef, 2016; Lobb et al., 2006; Patrick et al., 2001). In contrast, available studies and available information about customer journeys and decision-making processes has grown a lot. All these different researchers are focusing on a retail-online customer. Potential university students, online searching for information, should also be treated as a customer. A regular 'online shopper' is going through the same process as a potential university student. The online visitors are taking the same 'journey steps', regardless of the type of website. These steps are also known as the decision-making process (Miklosik, 2015), which is applicable to all online visitors. The exact determination of the steps differs per individual website. So even though the number of studies that have been conducted in the field of the customer journey and the decision-making process have grown, the focus on university students is lagging behind.

Before the students send their admission (purchase) to the university, the potential students retrieved information about their study of preference and the university of their preference. This information is gathered via online and offline channels. According to Moogan & Baron (2003), all of the potential university students are gathering online information about the study of their choice. On average, these students use nine different sources. Not every potential university student takes the time to find the perfect study of their choice. It differs between 1 month and 1.5 years of gathering online information and making a choice.

With the use of Google Analytics (online tracker of visitor data) universities can analyze the online behaviour of their visitors. A Dutch international-oriented university makes intensive use of the online analytic tools. The faculty 'behavioral, management and social sciences', is even making use of neuroscience and eye tracking mechanisms for analyzing the behaviour of online visitors. The faculty strives to play a pivotal role in understanding, coengineering and evaluating innovation in society. Two studies have been selected for this research, partly because the writer of this research has good connections and experience within the faculty. Also, the marketing and communication department of the university has good connections with the faculty and invokes each other multiple times over the academic year.

The marketing and communication department has identified big differences in the number of yearly admissions between the two studies. When looking at the click through rates of the studies (bachelor and master of both studies), some large discrepancies have been identified. The click through rate of the bachelor study A is 2.29%, whereas the click through rate of the master study B only 0.68% is. This is also the lowest rate of the four studies in the faculty. In a broader sense, the average click through rate of the pages belonging to 'Study A' (bachelor and master) is 1.27%, whereas the average of 'Study B' (bachelor and master) only 0.94% is. The average of all the studies in the faculty is 1.16%. See appendix 1 for results. The click through rate is measured by the number of visitors on the specific pages in a time range, divided by the number of visitors that reached a goal, forwarding to the registration system of the university.

According to Alba-María et al., (2020), Martínez- Sala (2015) and Davis & Shipman, (2011), usability, user experience and user experience design are vital for the conversion rate or the click through rate of a website or page. This study will assess the usability and user experience design of critical pages, followed by finding relevant relationships between the two models and the click through rate. Critical pages are the pages that are the most visited prior to admission. This will allow the marketing department of the university to increase the usability and/or the user experience design which might lead to a better click through rate. The objective is to fill the gaps in the current existing literature regarding click through rates and usability on university websites, as well as finding patterns and relationships between the relations that can be explained in a causal way, parameters that enforce and strengthen each other. By findings these relevant relations, websites can be optimized using this data. Therefore, the main research question of this research is:

What are relevant relationships between the User Experience Design and Usability parameters and the click through rate on an international oriented university website?

In the next chapter, important literature will be discussed which is vital for this research. Several definitions and models will be discussed and their usefulness for answering the research questions will be evaluated. The first subchapter will give some general knowledge about online behaviour of website visitors. The second subchapter will explain something about the concept of usability, which is one of the main topics in this research. The third subchapter will be about the concept of User Experience, with focus on the 'design' part of the experience. The characteristics of the models will be combined together, and both will be seen as standards which are related to each other. The models explained in the second and third subchapter will be re-introduced in the methodology chapter. After the literature review, a methodology will be presented which is going to be used for answering the main research question. The methodology. The results will be analyzed, presented and discussed in the chapters thereafter. At last, but not least, some indications for further research will be given.

2. Literature Review

2.1 Online (Consumer) Behaviour

The university is able to retrieve online information about its visitors. This is accomplished due to technologies which involves tracking by cookies. These cookies are stored by the browser used by the visitor. By synchronizing these cookies with real-time visitors, the university website is able to collect viewing, clicking, searching and conversion behaviour. These data can be combined under the term 'online behaviour' (Herdiana, 2013). These cookies and its behavioural attributes can be analyzed via Google Analytics.

The American Marketing Association (AMA) defines consumer behaviour as 'The dynamic interaction of affect and cognition, behaviour and the environment by which human beings conduct the exchange aspects of their lives. The definition of the AMA is in line with the definition from Kotler (2004); 'the behaviour of individuals or households which buy

goods and services for the final consumption'. There are other researchers, for example Solomon et al., (2019) and Hawkins (2007), that define consumer behaviour as 'the study of all the processes involved in the individuals or groups of individuals' activity which choose, buy, use or dispose of products, services or ideas that lead to satisfying the needs or wishes of consumers.

The decision making of students when considering their education is a complex interactive process. The average student searches his information in less than 3 months, whereas 60% spend more than 3 months retrieving information from their study. The average student is using 9 different sources for its information, both online and offline. (Moogan & Baron, 2003). The decision-making process is known as the process of consumers buying a product or a service (Miklosik, 2015). Many studies have been executed which covers the topic of the decision-making process. Some of these studies are involving the customer decision-making process to buy a product. There are no studies that covered the decisionmaking process of potential university students. Therefore, the study of Moogan & Baron (2003) shares vital information about the process of selecting a study at universities. Since every decision-making process is strictly individual, it is not possible to identify only one process that represents (and is valid) for all the visitors of the website. Different segments need to be created, representing a portion of the total visitors. According to Engel et al., (1968) and Haines et al., (1970), authors of traditional models of decision-making, the process includes five stages; problem recognition, information search, evaluation of alternatives, purchase decision and post-purchase behaviour.

Behaviour in the offline world is explicit and thus it has been studied extensively with various aspects. Behaviour is becoming more complex as it does not include the explicit form of digital information. The complexity can be in the way of individual search for information. Digital behaviours are referred to as 'Behaviour Informatics' or 'Behaviour Computing'. These behaviours are consisting of methodologies and techniques to represent human and virtual behaviours (Cao, 2010 and Cao & Yu, 2012). Behaviours can also be defined as 'activities that represent actions and operations that happen in a sequence and are conducted by humans. Therefore, behavioural patterns are a critical object when analyzing and trying to understand the behaviour. These patterns can be identified by analyzing the online behaviour of (potential) university students.

Organizations can benefit from well-designed websites. According to Hasan (2016), Visual Design, Navigation Design and Information design, the three pillars of website design, can have a negative impact on the online behaviour when executed insufficiently. For organizations it is important to design the webpages correctly to benefit from the positive online user behaviour. Visual design of a website concerns the consistency, aesthetic and the attractiveness, including images, colors and fonts. Navigation Design refers to the organization and its structural impact on the web pages, including the content. The navigation impacts the amount of effort that a user requires for reaching their goal. The informational design of the website refers to the ability to deliver relevant and easy to understand information that the visitor is looking for. The availability of necessary information and the ease of finding this information contributes positively to the online consumer behaviour. When not having these pillars set up correctly, this might end up with negative aspects in the online consumer behaviour.

2.2 Website Usability

Usability is one of the most important characteristics of any user interface and measures how easy the interface is to use. Usability not only evaluates the quality of a website, it also provides managers with insights into potential problem areas . Usability has been defined as "the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use" (L. Hasan, 2012).

According to Beri & Parminder (2013), there are several web analytics metrics which can be used to analyze the website's usability like: page views, time on site and internal searches. Another statement of Beri & Parminder (2013) is that the characteristics and the usability of a website is gaining trust towards its visitor. Therefore, studying and optimizing the usability of a website will ensure that the visitors will receive more valuable information from the website. Behavioural patterns can be identified to learn more about the visitors and the way they are behaving throughout their visit of the website. This information can be used for improving the webpages to improve the experience of the visitors.

Davis & Shipman (2011) suggested to use web metrics as a tool for usability assessment. An approach for different learning types about the assessment of usability of webpages was developed. These approaches do not only score the usability, but also indicate different concerns based on the developed methods. By identifying and scoring different variables on basis of web data, the model can indicate which topics or subjects can be improved on websites. It measures the quality of the website that is statistically supported and experienced by visitors. The proposed model of Davis & Shipman (2011) regarding statistical usability assessment based on metrics, is one of the only in the field, which is fully metric based, thus without any subjective construct in it. Therefore, it is perfectly aligned with the goals of this research. There are many other ways to study the emotional side of usability. This is often done with eye-tracking, heat-maps, mouse-tracking and even retrospective think aloud methods (B. Kim et al., 2007).

The concepts usability, graphic design and navigability are considered in different website evaluation models, but they have never been evaluated in the perspective of the connection between graphic design and navigability on usability. The choice of these parameters was based upon the conclusion of the research of Martinez-Sala et al. (2015). The research showed evidence of the correlation between graphic design and navigability, which belongs to usability, the great importance in the context of Web 2.0 (Agag & El-Masry, 2017; Hornbæk, 2006).

Graphic design is a reoccurring criterion in the website evaluation of different models. It has also been identified as one of the factors of the websites' success. The indicators for evaluating the parameters of graphic design are varying across different research studies and evaluation models. Park & Gretzel (2007) defined 9 different factors which are leading to a website success: Information Quality, Ease of Use, Responsiveness, Security/privacy, Visual appearance, trust, interactivity, personalization and fulfilment.

Usability is one of the most important characteristics of any user interface and measures how easy the interface is to use. Usability not only evaluates the quality of a website, it also provides managers with insights into potential problem areas, the bottlenecks of a website. Usability has been defined as 'the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use' (Hasan, 2012).

Surfing the internet has become a fundamental part of the current modern life of users. Therefore, it is unavoidable for universities to be present on the world wide web. Websites can gain strategic advantages such as attracting prospective students, building a community and sharing knowledge. The achievement of these goals is dependent upon the usability of the website. The 'International Standard Organizations' (ISO9141) describes usability as 'Effectiveness, efficiency and satisfaction with which specified users achieve specified goals in particular environments". The usability of a website is the measure of the ease of use on a website by its visitors.

The usability of a website and its conversion rate, or click through rate, are highly blended into each other. The conversion rate is measured by the number of users performing a desired action on the website. According to the Web Analytics Association (WAA), web analytics is the measurement, analysis, collection and reporting of website data for the purposes of understanding and analyzing the usage of the website by its users. Web analytics can be used to measure the usability and conversion rate of the website. Google Analytics is a good analytic tool for performing these actions.

2.3 User Experience (Design)

There are many different definitions available on the web and in the academic field about User Experience and the elements of it. Many UX-research papers have focused on 'assessment of learning'. Designers of websites need to know how User Interface (UI), or User Experience Design (UXD) features might have an influence on UX. Interestingly, some authors tend to eschew defining UX, while elaborating the significance of designing webpages according to UX and obstacles attaining it. UX is associated with a broad range of concepts, including emotional and affective variables. In/exclusion of some variables in studies seems arbitrary, depending on the different authors. The analysis for UX impressionable. The range is between an individual end-user with a standalone application toward multiple end-users' interaction with merging services from multiple disciplines (Law et al., 2009).

One of the biggest challenges about online marketing departments are facing today, is how to encourage visitors to act. Only usability, a widely known term in the online marketing world, is not enough. Marketing department should take the whole User Experience into account. The UX is a person's emotion, attitude and behavior about using a website. The study of Drossos et al., (2019) gives an idea in what way improving the user experience leads to a higher conversion rate or click through rate..

The concept of UX consists of multiple elements. Many online marketers use these concepts to improve the general user experience of the website. The biggest reason user experience should matter, is that it matters to the users. If the users are not provided with a positive experience, they will not use the product or service. They would find the product or service somewhere else (Garrett, 2010). Usually, UX consists of the look (design), the feel and the usability (Hartson, R; Pardha, 2012). This statement is also identified by Hasan (2016). The combination of these elements combined is the perceived user experience of the

user of a website or page. The user interface design, also known as User Design, User Experience Design or Web Design is an area that always has been emphasized by many researchers and online marketers. Researchers have started since the upcoming trend of the internet in the late nineties, studying web design. It requires understanding of different disciplines, for example computer science, engineering, graphic design and sociological context. An effective user interface design results in a better total experience of the user (Punchoojit & Hongwarittorrn, 2017).



Visual concept of User Experience; Consisting of Look, Feel and Usability (Babich, 2017)

Martinez-Sala et al., (2020) introduced the term 'UUX' (User Usable Experience). The concept of UUX has been chosen due to its close relation between usability and user experience satisfactions since the basic premises of usability; ease of use, effectiveness etc. has to be fulfilled by the user. The is actually a 'user experience design' (UXD) model.

Another aspect of user experience is the navigation and the awareness of the users' location of the website. Since the university website uses the same lay-out and structure of its website. Even though the lay-out and navigation is for a big part similar, this aspect will be taken into account when analyzing the model. The model does not completely cover all the aspects of user experience. The rational side ('feel') and the customers' feelings have not been assessed. The model actually only assesses the design choices and partially the usability of the total User Experience. The name itself explains it, it is the way the customer uses the website and not per se the feeling that comes with it.

The goal of the website of the university website is to provide information about different programmes to (potential) students. These students (users) can use the information retrieved to make a choice of their study of choice. Lu et al. (2002) concluded that the information (in online terms defined as; content) is the most important factor for the online visitors. The content can be used to retrieve information but referring to the research of Lu et al. (2002), the users are using the content to determine the quality of the website. Codina (2007), M^a et al., (2006), Paz et al., (2018) are concluding that the usability of a website is a parameter in relation to the transactional aspects of the web. That means that the usability of a website has a positive relation with the amount and worth of certain online transactions. The type of the online transaction depends on the type of website the users are visiting.

Another aspect of user usable experience is the navigation and the awareness of the users' location of the website. Even though this aspect is almost the same on every page of the University Website, it will still be taken into account when assessing the model. The proposed

model of Martinez-Sala et al. (2020) integrates three parameters of the analysis of a website. The parameters are Graphic Design, Navigability and Usability. The parameters represent a certain aspect of study on which observation is necessary. The parameters were selected by an extensive literature review of Martinez-Sala et al. (2020). The 43 different parameters are divided as follows: Navigability (11), Graphic Design (4) and the most important for this research, Usability (28). Navigability and Design are part of the 'Look', whereas Usability is part of 'usability' in the UX conceptual model. The usability parameter comprises different indicators that can relate to specific field of usability analysis, for example, content, ergonomics, processes, interactivity etc. Content is one of the most important parameters, if we refer back to other studies described in this theory section. The content on the university website can give the (potential) students a lot of information to determine the study of their choice. Even though some sections are quite similar (since they are part of the same website), all the sections will be evaluated.

Summarized from this literature review, it is known that improving the total user experience is vital for websites and have a positive influence on the conversion rate, click through rate and the total satisfaction of the website visitors. For this research, it is interesting to find out what individual characteristics have a relevant relationship with the behaviour of the visitor. A new integrated model will be presented at the conclusion, based on the results of this research. This model is created out of relationship and not just combined through literature.

Both models will be used in the theoretical model to answer the research question. Referring back to the concept of the 'User Experience' (Babich, 2017), the 'look' and 'usability' part of the concept will be analyzed to find relevant relationships between these two and the behaviour of the visitors. The 'feel' part of the UX concept will not be analyzed due to time constraints and lack of resources and will not be available in the theoretical model. In this research, behaviour is actually described as the 'click through rate'. Due to limitations of the Google Analytics tool, available data and the GDPR regulations, it is not possible to describe behaviour in a different manner in this research.

User Experience					
	UXD		Usability		
Indicator	Description	Parameter	Indicator	Description	
Main_Navigation	Permanent main navigation menu	Navigability	CLU	Number of text areas with a non-white background, with borders, with horizontal rule or in a list	
Expressiveness	Capacity to express with a limited number of options the main contents in the main menu (constant navigation).		NFL	Number of times blocks of text are not positioned flush left	
Identification	Basic identification of the different contents based on title, source and date.		LNK	Number of internal and external hypertext links	
Structural_navigation	Possibility of making effective non- sequential navigation.				
Orientation	Indications of context				
Hierarchy	Direct or indirect indication of the relevance of the different sections and subsections.				
Local_Navigation	Specific navigation system for some sections of the website.				
Remote_navigation	Remote navigation elements, and supplemental navigation systems, such as tables of content, indexes and website maps.				
Semantic_or_hypertext_ navigation	Links from some sections and subsections to other non-structurally related sections and subsections.				

Tags	Set of terms or icons used to name the different sections of the resource			
Search Engine	Offers the possibility of searching and/or		<u> </u>	1
_ 0	retrieving information through questions or keywords.			
Brand_image	Implementation of the functional and	Graphic Design		
	emotional elements of the brand, the brand		FW	Number of words emphasized by bold face or
	tone, as well as the role of images and		2.0	italics
A	graphics.	-		
Argumentative_analysis	Analysis of the expressive and visual language. The style of texts and images			Number of unique colors of fonts used for all
	should be uniform, coherent with the brand		EC	words
<u> </u>	image.	-		
Clarity	Adequate contrast between figure and background that fits the brand image and			
	current trends without compromising on		ING	Number of imaged embedded in a page
x 11.11.	usability.	-		
Legibility	Use of typography that fits the brand image and current trends, without affecting the		TIFS	Total sizes of files of images used in a web
	ease of reading.			page
			TAMFS	Total of web page file size, total of image file sizes and size of file of CSS for web page
			WDES	Size of file of web page only without
		-	wirs	including sizes of files of images or CSS
		-	PIWPFS	% of image file size to web page file size Size of file of web page only without
			WPFS	including sizes of files of images or CSS
Coherence	Clarity and coherence in the presentation of	Usability		
	the website's theme, target audience and objectives and between these three		TW	Number of words on a webpage
	elements.			
Interest	Interest of the website towards the target			
	audience, and opportunity of the subject		BW	Number of words in body of web page
Quantity	Volume of information.	-	NBW	Number of words not in body of web page
Rigor	Careful preparation and presentation of the			% of Body words emphasized by hold face or
	information with regard to its foundation		PEWB	italics
Editing	Monitoring and correction of materials and			
	contents for proper presentation.		PNWB	% of non-body words to total words
Updating	Update frequency of the resource.	-		
Ease	resource and tools, and the ease of access to			
Flexibility	Capacity offered to the user by the recourse			
	to perform the same action in different			
Multimedia resources	Ease of use and operation of multimedia	-		
-	resources.			
Speed	Appropriate loading speed of content,			
	etc.			
Display_of_status	Clear and precise display of the status of			
	the process that is taking place in the			
Conventions	Information about the status through	-		
	common language and familiar conventions			
Correction of errors	for typical users of the website.	-		
Terms and Policies	Easily accessible information about the	-		
	policies and terms of service from the point			
	of view of the obligations and rights of the			
	user.			
Contact_information	Inclusion of a channel for users to get in			
	touch with the people responsible for the website and provision of quick and			
	personalized responses.			
Customized_access	Possibility of customized access and			
	capacity of the resource to adapt to the			
	his/her registration and to the preferences			
Customi 1 1 1	recorded in previous visits.		1	
Customized_newsletter	Possibility given to users to receive an online-customized newsletter from the			
	website.			
Specific_applications	Applications and services characteristic of		I	
	website under analysis; search engine.			
	contact, RSS, mashups, etc.			
Blog_and_social_networ	Presence of links to the brand's own blog		I	
ks	and major social networks.			

3. Methodology:

In order to gain insight in the relevant relationships between user design, usability and the click through rate, a website evaluation model is necessary to verify the research question. The models will evaluate the UXD of the (sub-)pages of the program-specific part of the university website, as well as the usability of these pages, using the second model. The evaluation is conducted with a 2-dimensional approach. Data analysis is the primary methodology for this research. The data is extracted from Google Analytics account of the analyzed website. The data that is retrieved represent the user behaviour of the visitors of the website.

For the first explorative analysis, Microsoft Excel will be used. All the exports from Google Analytics are in Excel format. With these results, evaluations models will be used for the evaluation of the website of the university website.

The studies of Martinez-Sala et. al, (2020) and Davis & Shipman (2011) will be used for the assessment of the usability and the UXD of critical pages of the website. The two programme section pages, IBA and CS, will be scored according to the models. Therefore, the user experience will only be partially investigated. The 'feel' part of the user experience will not be assessed. See the final chapter for more information.

3.1 Data collection

For retrieving the data, the Google Analytics account of the university was being used. This account contains data concerning all the pages hosted by the university. Filters on the data were applied for receiving relevant information. A segment, which are combined conditions on the result data, was created for retrieving user information which resulted in an 'Event category label' or an 'Event action label'. The labels represent a certain goal that a visitor can reach on a website. These goals are set by the administrators (which are part of the marketing and communication team) of the website. These goals are integrated in the website code to retrieve the results. The date range being used for retrieving data was 1 September 2019 - 31 August 2020. Data was retrieved in a 2-month period to retrieve more quantitative data. When requesting data for a large date range, less data is retrieved, due to sampling restrictions.

The data about the pages can be classified per user or per session. In this research, the data will be classified for Users. By choosing this way, more personalized insights about the consumer behaviour can be retrieved. The data is summed up per page. Pages are registered by its URL (uniform resource location). The university has structured its URLs in a very logical way. After the domain name, it starts with the language of the page. For general pages, the university offers pages to be translated into Dutch or German. The pages concerning this research are only available in English. After the language, 'education' is displayed, followed by 'bachelor' or 'master'. This indicates whether the visitor is visiting a page concerning bachelor programmes or master programmes. After the type, the actual programme is displayed.

The data will be exported in an .xls file. The excel reports can be combined and merged into one data file. When succeeding, the most critical pages can be identified. The critical pages are the pages that have the largest share of users reaching the goals set, the highest click

through rate. The top pages will be used for the analysis and the answering of the main research question.

3.2 Model I: User Usable Experience model (UUX) ('Look')

Martinez-Sala (2020) proposed a model of UUX evaluation in websites. The model integrates three different parameters of analysis: graphic design, navigability and usability.

Each parameter represents an aspect of study on which observation focuses and comprises some indicators, as provided by Codina (2007). The parameters were selected by Martinez-Sala et al., (2020), based on the best interest of the study. Nineteen different studies have been revised and analyzed by Martinez-Sala et al. (2020) to create an adequate model that can be applied to different websites.

Not all the parameters are used for the evaluation according to this model. Since this model was created for websites focused on tourism, some transactional parameters are left out. Also, this model was used to compare different websites. In this research, different pages are analyzed according to this model. Therefore, some generic indicators are being left out for the analysis, because the score would be equal across all pages, or it was not possible to define a score for the indicator.

The scoring of the pages is as follows; Martinez-Sala et al. (2020) indicated a maximum score per indicator and a maximum average score per parameter as well. While looking at the original description of the indicator, the web page was analyzed. Every single time the description could not be met for a part of the website, the score was deducted with 1. If the scoring range is '0-1', a '0' indicates 'not present' and a '1' indicates 'present'. Please refer to appendix 24 for the detailed model with descriptions of each parameter.

3.3 Model II: WPMA ('Usability')

The quality of experience that visitors of a website have is a concern and hard to define. The challenge is to ensure the usability of the web pages. Pages are likely to have ratings for severity of issues with usability within ranges bounded by values. Website managers may apply different quantitative tools to the analysis of webpages. Davis & Shipman (2011) are using two different tools to analyze the usability of a webpage. The most useful tool for this research is the 'Web Page Metric Analyzer (WPMA). The process asks web site administrators to rate the usability of pages according to a few criteria. The assessed ratings and quantitative measurements are used to create context-specific usability models.

Examples of properties are number of words, number of hypertext links and number of images. In this approach, the method to study usability is independent of the quantitative properties. Since the metrics can be retrieved by anyone with an internet browser and an internet connection, the portion of the web site administrator is not needed. The metrics are defined as stated in table 2, including the way to measure the metric. The last column indicates in what way the metric is analyzed and how the score is calculated.

#	Metrics	Way to measure
1	Number of words on a webpage	Copy and paste the text into Word -> Count words
2	Number of words in body of web page	Count the words in the <body> part of the HTML</body>
		file
3	Number of words not in body of web page	Subtract Metric 1 from 2
4	Number of words emphasized by bold face or italics	Manually count
5	Number of text areas with a non-white background, with borders, with horizontal rule or	Manually count
	in a list	
6	Number of times blocks of text are not positioned flush left	Manually count
7	Number of unique colors of fonts used for all words	Manually count
8	Number of internal and external hypertext links	Manually count
9	Number of imaged embedded in a page	Manually count
10	% of Body words emphasized by bold face or italics	Metric number 3 divided by metric number 1
11	% of non-body words to total words	Metric number 3 divided by metric number 1
12	Total sizes of files of images used in a web page	Use the Google Developer Tool for retrieving the
		size of images
13	Total of web page file size, total of image file sizes and size of file of CSS for web page	Use the Google Developer Tool for retrieving web
		page file size
14	Size of file of web page only without including sizes of files of images or CSS	Metric 13 subtracted by metric 12 and the CSS file
		from the Google Developer Tool
15	% of image file size to web page file size	Metric number 13 divided by metric number 12

Table 2: Metrics and ways of measuring the Variables according to the WPMA-Model of Davis & Shipman (2011)

4. Results

In this section, the results that are retrieved by executing the plan sketched in the methodology will be analyzed and presented. The data was analyzed by using SPSS (v26) and Microsoft Excel.

4.1 Identifying critical pages

The first step in conducting this research was to identify top/critical pages that possibly led to admissions. The exports of the segments in GA were exported in periods of 2 months to retrieve the highest data coverage.

CS (CTR=0.68%)			IBA (CTR=2.29%)		
/communication-science/			/international/business-administration/		
Page	%	n	Page	%	n
/	27	1666	/	41	4185
/admission/	12	746	/enrolment/	27	2732
/eligibility-check/	10	646	/enrolment/admission/	9	958
/programme/	8	521	/study-programme/first-year/	5	467
/admission/admission-international/	7	423	/study-programme/	4	455
/programme/pre-master/	6	351	/study-programme/second-year/	3	282
/specializations/marketing-communication-design/	4	261	/study-programme/third-year/	2	242
/admission/hbo-degree/	3	186	/enrolment/application-deadline/	2	206
Miscellaneous	<3	1600	Miscellaneous	<2	700

Table 3: Critical pages that led to admission, based on data retrieved per individual user.

Since there are a lot of similar pages between the two programmes, a categorization will be made. The pages mentioned in table 3 and table 4 will be categorized into (1) Programme-specific pages and (2) general pages. A programme specific page can be identified by its information, especially information which refers to the programme itself, and not so much general information. Using the topic of 'admission' is a good example for the differences between a programme-specific page and a general page without programme-specific information. Across university-wide there are procedures to do an admission for registration for universities. Even though these types of information are stored on the programme section of the website. The way to do an admission is for every programme the same. These things are described on those pages. Interesting pages are the programme-specific pages. These pages contain information which is specifically for the programme itself. Therefore, only programme-specific pages will be in scope for this research.

Category		Page(s)
(1) Programme-	IBA	a. /study-programme/first-year
specific		b. /study-programme/second-year/
		c. /study-programme/
		d. /study-programme/third-year/
		e. /
	CS	f. /specializations/marketing-communication-design/
		g. /programme/
		h. /programme/pre-master/
		i. /specializations/organizational-communication-reputation/
		j. /specializations/technology-communication/
		k. /specializations/
		1. /
(2) General	IBA	/enrolment/
		/enrolment//admission/
		/enrolment/application-deadline/
		/admission-and-enrolment/admission/
		/enrolment/tuition-fees/
		/admission-and-enrolment/matching/
		/finance/
	CS	/admission/
		/eligibility-check/
		/admission/admission-international/
		/admission/hbo-degree/

Table 4: Categorization of the critical pages as described in table 5

4.2 Model I: UUX

In order to replicate the model as proposed in the theory, computed variables are created by grouping individual variables. 'Navigability, 'Graphic_Design', and 'Usability' are computed. After that, a combined average of all the variables is created. This new variable is called 'UUX_Total'. This is the total score according to the model of Martinez-Sala et. al (2020) per critical page. The click through rate per page (retrieved from the click through rate of 'Study A' and 'Study B' is added as well to the dataset. The scores of the pages that have been analyzed can be found in appendix 2.

All the critical pages per programme have been analyzed carefully. The model insisted a score between 0 and 1, 2 or 3. Every time an object was not present at the critical page, the maximum score of the parameter will be deducted by 1 point. After the scoring of the critical pages, the result has been imported into SPSS for further analysis.

Cooper and Schindler (2014) stated that reliability the overall consistency of the measure is. The Cronbach's alpha (α) is the measurement to test the consistency. The test is marked as acceptable when Cronbach's alpha (α) is higher than .7. If the number of variables is less than 10, a score close to 0.7 is also acceptable (Nunnally & Bernstein, 1994). The computed variables are taken into account since they represent the individual variables as

presented in chapter 3. For the following tables, please refer to appendices 3-9 for detailed results.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.630	.709	3

Table 5: Reliability statistics

The inter-item correlation matrix has been retrieved alongside the Reliability analysis with the alpha of Cronbach. The inter-item correlations examine the extent to which scores are related to scores on other items when using scale items. It provides the assessment of item redundancy. Item redundancy is the extent to which items on a scale are assessing the same content. The average of the inter-item correlation for a set of items should be between .20 and .40, assuming that the items are reasonably homogenous. They should contain sufficient unique variance so as to not be isomorphic with each other. If the values are below the proposed .20, the items may not be representative of the same content. If the values are higher than .40, the items may be only retrieving a small width of the construct (Piedmont, 2014).

	Graphic_Design	Navigability	Usability
Graphic_Design	1.000	.262	.324
Navigability	.262	1.000	.759
Usability	.324	.759	1.000

Table 6: Inter-Item correlation matrix

A linear regression was executed to find out if one of the computed scores had a relation on the click through rate, which is critical to know to answer the research question. The first computed variable to analyze is 'Graphic_Design' as the Independent Variable (IV) and the 'Click_Through_Rate' as dependent variable (DV). The linear regression is repeated with the computed variables as independent variables. See table 7 for the individual results combined in one table and appendices 5-9 for detailed results.

IV	DV	R-	Unstandardized	t	Sig.
		Square	Beta		
Grapic_Design	Click_Through_Rate	.115	.015	1.081	.308
Navigability	Click_Through_Rate	.42	.022	2.551	.031
Usability	Click_Through_Rate	.65	.02	1.789	.045

Table 7: Results of the Multiple Linear Regression test

Both Navigability and Usability do have a significant positive relationship with the click through rate. Respectively, the beta is 0.22 for Navigability and 0.2 for Usability, whereas the significance rates are 0.31 and 0.45 with a 95-percent confidence level. Hair et al., (2014) stated that R-Squared values of 0.75, 0.5 and 0.25 can be respectively described as

strong, moderate and weak. The R-Squared scores can be described as 'moderate', since the R-Squared is around .50 or even higher. The R-Squared of Graphic_Design can be marked as 'weak'. This is in line with the significance of .30.

IV	DV	R-Square	Unstandardized	t	Sig.
			Beta		
UUX_Score	Click_Through_Rate	.863	0.1	5.396	0.003

Table 8: Results of the Multiple Linear Regression test

Since the individual computed scores did not have all significant relationships with the click through rate, the total UUX will be taken into account for the linear regression test. The UUX_Total score is the independent variable whereas the Click_Through_Rate will be the dependent variable. This test has a statistically significant score of .01. This means that the UUX_Total score has a positive relationship with the Click_Through_Rate.

The previous analyses were conducted with the computed variables. The computed were used to indicate which computed variable (Graphic_Design, Navigability, Usability) has a positive relationship with the Click_Through_Rate. To go one level deeper, all the single variables are analyzed as well. The Bivariate Correlation analysis is conducted with Pearson's correlation coefficient. Seven out of the twenty-four variables show a significant correlation to the Click_Through_Rate, whereas only one has a negative influence/correlation to the Click_Through_Rate. The table has been modified in format to show only the interesting figures. Correlations between other variables than Click_Through_Rate have been removed from the output of the analysis.

The Bivariate Correlation Analysis shows a positive statistically significant correlation at the variables; Brand_image (.69*), Main_Navigation (.833**), Orientation (.828**), Hierarchy (.742**), Tags (.603*), Quantity (.719*). There is only one negative statistically significant correlation, namely Editing (-671*).

Pearson Correlation to Click_Through_Rate				
		Significance	Correlation	
Graphic_Design	Brand_image	.019	.690*	
	Argumentative_analysis	.438	261	
	Clarity	.900	043	
	Legibility	.428	.267	
Navigability	Main_Navigation	.001	.833**	
	Expressiveness	.438	.261	
	Structural_Navigation	.770	100	
	Orientation	.002	.828**	
	Hierarchy	.009	.742**	
	Local_Navigation	.297	346	
	Remote_Navigation	.378	.295	
	Sementic_or_Hypertext_Navigation	.166	.449	
	Tags	.050	.603*	

Usability	Interest	.407	.278
	Quantity	.013	.719*
	Rigor	.635	.161
	Editing	.024	671*
	Ease	.148	.467
	Flexibility	.186	.430
	Multimedia_resources	.880	052
	Speed	.900	043
	Display_Of_status	.353	.311
	Conventions	.389	.289
	Customized_Newsletter	.900	043

Table 9: Results of the Bivariate Correlation Analysis

** = Significance at the 0.05 level (2-tailed)

* = Significance at the 0.01 level (1-tailed)

4.3 Model II: WPMA

Cooper & Schindler (2014) stated that reliability the overall consistency of the measure is. The Cronbach's alpha (α) is the measurement to test the consistency. The test is marked as acceptable when Cronbach's alpha (α) is higher than .7. If the number of variables is less than 10, a score close to 0.7 is also acceptable (Nunnally & Bernstein, 1994). The reliability score is on the low side, but since there are not a large number of cases (only the webpages as case), the score of .595 is just acceptable for being reliable. The Cronbach's Alpha based on standardized Items is in contradiction above .7 (.709).

Cronbach's	Cronbach's	N of Items
Alpha	Alpha Based	
	on	
	Standardized	
	Items	
.604	.856	13

Table 10: Reliability Statistics

The inter-item correlation matrix has been retrieved alongside the Reliability analysis with the alpha of Cronbach. The inter-item correlations examine the extent to which score are related to scores on other items when using scale items. It provides the assessment of item redundancy. Item redundancy is the extent to which items on a scale are assessing the same content. The average of the inter-item correlation for a set of items should be between .20 and .40, assuming that the items are reasonably homogenous. They should contain sufficient unique variance so as to not be isomorphic with each other. If the values are blow the proposed .20, the items may not be representative of the same content. If the values are higher than .40, the items may be only retrieving a small width of the construct. Please refer to appendix 11 for detailed results of the Multiple Linear Regression tests and to appendix 23 for the scores retrieved with the WPMA model.

	TW	BW	EW	CLU	NFL	FC	LNK	IMG	TIFS	TAMFS	WPFS
TW	1.000	1.000	.675	.401	.189	.447	.410	.273	.257	.512	.702
BW	1.000	1.000	.675	.401	.189	.447	.410	.273	.257	.512	.702
EW	.675	.675	1.000	.486	348	.475	.355	.119	.109	.381	.580
CLU	.401	.401	.486	1.000	.119	.494	.541	.273	.697	.687	.549
NFL	.189	.189	348	.119	1.000	.000	.066	.025	.371	.249	091
FC	.447	.447	.475	.494	.000	1.000	.746	047	.169	.605	.673
LNK	.410	.410	.355	.541	.066	.746	1.000	.108	.247	.485	.638
IMG	.273	.273	.119	.273	.025	047	.108	1.000	.774	.613	.537
TIFS	.257	.257	.109	.697	.371	.169	.247	.774	1.000	.785	.468
TAMFS	.512	.512	.381	.687	.249	.605	.485	.613	.785	1.000	.840
WPFS	.702	.702	.580	.549	091	.673	.638	.537	.468	.840	1.000

Table 11: Inter-Item Correlation Matrix

The majority of the inter-correlation items do comply with the range of .20 and .40. This means that the items do have a similar representation of the same content as well as retrieving a not too small width of the total construct. Negative inter-correlation items are accepted since we want to discover whether a negative relationship are also interesting to discover.

The model of Davis & Shipman (2011), the WPMA-model, has manually been filled in by on-page data. This data was retrieved in the month of September. Since webpages can change frequently, the current data may vary from the data retrieved for this Research. The Google Development Tools (Chrome DevTools) was used for the retrieval of some of the data. The model has been filled in and the scores were imported into SPSS. The *Click_Through_Rate* of the programmes were added to SPSS for further analysis about the pages.

Every attribute is equal to an independent variable. Every independent variable was used in the multiple linear regression test. Some attributes were percentage scores. These scores were not taken into account with the multiple linear regression test. The results can be found in table 12. Please refer to appendices 12-22 for detailed results.

IV	DV	R-Square	Unstandardized Beta	t	Sig.
TW	Click_Through_Rate	.03	.05	.588	.571
BW	Click_Through_Rate	.03	.05	.588	.571
EW	Click_Through_Rate	.026	.019	491	.636
CLU	Click_Through_Rate	.257	.2**	2.110	.044
NFL	Click_Through_Rate	.538	.03**	3.559	.006
FC	Click_Through_Rate	109	001	129	.900
LNK	Click_Through_Rate	111	.00023	.053	.959
IMG	Click_Through_Rate	.83	.003**	.905	.038
TIFS	Click_Through_Rate	.562	.01**	3.400	.008
TAMFS	Click_Through_Rate	.21	.000	1.547	.156
WPFS	Click_Through_Rate	.002	.0006	.137	.894

Table 12: Results of the Multiple Linear Regression test

* = Significance at the 0.01 level (1-tailed)

Since there are not many cases, the expectation was that many attributes were not statistically significant. Only four out of eleven attributes are marked as statistically significant with a 95-percent probability level (Sig <.05). The four attributes that show statistical significance are CLU, NFL, IMG and TIFS. These attributes have respectively a beta of 0.2, 0.03, 0.003, and 0.1. That means that the positive aspect of the attributes indicates that a higher score of the attribute will lead to a higher click through rate.

^{** =} Significance at the 0.05 level (2-tailed)

To identify (relevant) relationships between the two models, a bivariate regression analysis is conducted. The dependent variable is still the 'Click_Through_Rate'. Not all the parameters of both models have been used due to size constraints. The significant parameters from both previous models are participating in the bivariate regression analysis. The results can be found in table 13.

	CLU		NFL		IMG		TIFS	
	Correlat	Signific	Correlat	Significa	Correlat	Significa	Correlat	Significa
	ion	anc	ion	nce	ion	nce	ion	nce
Brand_image	-0,039	0,914	0,305	0,392	0,316	0,373	0,284	0,427
Main_Navigation	0,347	0,325	-0,303	0,395	-0,100	0,783	0,011	0,975
Orientation	-0,790	0,007	0,270	0,451	0,306	0,390	0,000	1,000
Hierarchy	-0,507	0,135	0,581	0,078	-0,115	0,752	-0,335	0,345
Tags	-0,322	0,364	0,381	0,277	0,405	0,245	0,265	0,460
Quantity	-0,013	0,971	0,080	0,826	0,264	0,461	0,104	0,776
Editing	-0,695	0,026	0,523	0,121	-0,500	0,141	-0,785	0,007
Sementic_or_Hy pertext	0,470	0,170	-0,490	0,151	0,512	0,130	0,654	0,040

Table 13: results of the bivariate regression analysis

There are not many significant relationships between the individual parameters of both models. CLU has a positive correlation with Orientation (.79) and Editing (.69), as well as TIFS with Sementic_or_Hypertext (.65). There is one negative relationship, TIFS with Editing (-78). Other relations that are not significant, but are relevant, are NFL with Hierarchy and NFL with Editing.

5. Conclusion

This research aimed to identify patterns in the User Behaviour regarding the User Design and Usability that have relationships with the click through rate. Various usability and user experience design metrics have been identified that have a positive relationship on the click through rate. Indicators Brand Image, Navigation, Orientation, Hierarchy, Tags, Quantity, Editing, highlighted text areas & its position and images are especially positive related to the click through rate on a university website. With previous information, the main research question can be answered. The main research question was:

What are relevant relationships between the User Experience Design and Usability parameters and the click through rate on an international oriented university website?

The first analysis was to test whether the total score of the UXD model, including 'design' and 'usability' had a positive relationship on the click through rate of the assessed website and its pages. Based on the results of the multiple linear regression test, this research found a positive relationship between the score of the UXD-model and the click through rate of specific pages of the university website. The positive relationship was found with the test, by setting the Click_Through _rate as the dependent variable and the UUX-Score as the independent variable. The beta-coefficient is .1 with a significance of .003 on a 95%-interval level. Based on the research of Martinez-Sala et al., (2020), the relationship was expected to be present and positive. Another interesting conclusion about the first analysis is that the variables are working together, and not solely independent. This means that the combination of a decent design, usability and navigation are vital for the click through rate. Not only the total score has been analyzed, but also the individual parameters.

The second analysis was to test if the 'graphic design' part of the UUX-model has a relationship with the click through rate of the analyzed webpages. Based on the results of the multiple linear regression test, a non-significant positive relationship was found (beta of .15). Since the relationship is non-significant, it is not possible to say whether this is a valid relationship and therefore it cannot be marked as a relation

When looking at the individual averages of the indicators belonging to 'Graphic_Design', two things are standing out. The indicators that do increase the average, are 'brand_image' and 'legibility'. These two are related to each other since both indicators are related to use of homogeneity of typography and a consistent use of styles concerning the brand and the style guide. The score of legibility is 1.6 for study A and 1.3 for study B. The 'brand_image' scores are 3 (highest score) for Study A and 2.3 for Study B. It seems to be that the pages of study A are more focusing on the implementation of the functional and emotional elements of the brand of the university, as well as a more consistent style in comparison to the general style of the website.

The third analysis was to find a relation between the 'navigability' part of the UUXmodel and the click through rate on the web pages towards the admission system of the university. Based on the results of the multiple linear regression test, a positive relationship was found between the 'navigability' and the click through rate. This means that a good navigability of the webpages, triggers the visitors positively and are more likely to click through to the next webpage. Usually, the navigation of webpages is similar all across the website. It is part of the design. Differences can be made per specific page, which happened too in this analysis. Navigability in the context of the UUX-model is a bit different from the general website design. The premise of navigability is that the user must know at any time where they are, how they got there and where they can go from here. This gives the visitor a positive feeling and attitude towards the webpage. Especially the premise of 'where they can go from there' seems to be interesting in the context of the click through rate. If there are not many options to 'click through', it is explainable that this relationship will be lower than pages where it is possible to click through. A more detailed analysis indicates that the indicator 'hierarchy' is the direct or indirect indication of relevance of the different sections and subsections. The average score of Study A is 200% higher than the average of Study B (2.3 vs 1.3). The second interesting indicator 'sementic or hypertext navigation', indicates links from some sections and subsections to other non-structurally related sections and

subsections. The average score is almost 6 times higher than the score at the pages of Study B. However, both scores are very low (0.6 vs 0.1). Both indicators are concerning the topic 'subsections' on pages and use internal links on the page itself to these different subsections. Making user of (sub)sections on a page balances artistic expression with usability principles of simplicity to add more experience to the visitor (Badre, 2002).

The fourth analysis was to find a relation between the usability portion in the UUXmodel and the click through rate. Based on the results of the multiple linear regression test, a positive relationship was indicated between the usability and the click through rate. The beta was 0.2 and the significance 0.2 on a 95%-interval score. As we already discussed in the literature review, usability has several different definitions. With this analysis, usability was tested in the context of the UUX-model. The next analysis will be focused on purely the usability. According to the UUX-model, nineteen indicators of usability were divided into five different categories: content, ergonomics, processes, adaption and interactivity. The pages of Study A have on every indicator a better average score. Starting with the category 'content', the indicator 'quantity' is standing out. The averages for Study a and Study B are respectively 2.8 and 1.5. Quantity is described as the volume of information available at a webpage. Especially, again, 'the specialization pages' do have a lack of quantitative information available.

The differences in average between the other parameters of the 'usability' sections, are not showing any big differences. It seems that 'content' is the most important factor in this section, according to this study. The marketing department of the university can use this finding to improve the quality and quantity of the critical web pages.

The fifth analysis was conducted to find a relation between purely usability and the click through rate. There is not a single score for 'usability' as a whole. Therefore, the analysis is conducted, and the results were analyzed per different metric. the total sample size (number of webpages), resulting in a high number of non-significant metrics. Four out of the eleven analyzed metrics have been marked as statistically significant. The metrics that are belonging to this category are: CLU (Number of text areas with a non-white background, with borders, with horizontal rule or in a list), NFL (Number of times blocks of text are not positioned flush left), IMG (Number of imaged embedded in a page) and TIFS (Total sizes of files of images used in a web page (MB)). The last two metrics (TIFS and IMG) are related to each other. A higher number of images embedded in a page leads in general to a higher file size of the images. More studies, for example Li et al., (2017) and Loiacono et al., (2007) did confirm that images have a positive effect on the user experience and the usability, whereas also other studies did not find a significant positive relationship (Bae et al., 2005). Some websites may benefit more from using images on the pages as other websites. This depends on the type and the goal of the website.

As it seems that there is a relationship between using images on a webpage and a higher click through rate, the website should make more use of the ability to present images to a certain extent. This research showed that using images (average for study A is 2 and study B 1.3) on the webpages contributes to a higher click through rate. The visitor may find the image helpful or it gives the visitor a better attitude towards the webpage and the organization.

The other two metrics are theoretically not related to each other, but functionally, they are. The first one to discuss is CLU. The metric CLU concerns, text areas highlighted with color, bordered regions, rules or lists (Ivory, 2000). There is a big difference in the scores of CLU for Study A and Study B. Study A has an average of 4.8 of these blocks per page, whereas Study B has only an average of 1.7. This means that the pages of the Study B section should use more highlighted text areas, bordered regions rules and lists, since it has a positive relationship with the click through rate, according to this research, as well as using blocks of text on the webpage. The last statement is also supported by Raban et al., (2016). Text on a page can be presented in a long static text, but also divided into parts, or blocks.

The fourth metric to discuss is 'NFL'. This metric is an acronym for 'Number of times blocks of text are not positioned flush left'. The definition of a 'block' is defined in the previous paragraph. In English and most countries in the world, the standard is to read from left to right. If a block is positioned flushed left, this means that the block of text is aligned fully left. Text can also be aligned centrally, while aligned to the right is not common at all in Europe. This research shows that aligning the text not flushed left has a positive relation with the click through rate. Text that is aligned centrally is more common on the pages of Study A, in contradiction of the pages of Study B, where only on average 1.8 times the text (blocks) is not aligned flush left where the pages of Study A 6.6 times alignment was not flush left. The NFL metric does have some relation with the CLU metric. If there are more 'blocks' to align, the alignment can be done more often not flush left, which is the case at the IBA pages. The recommendation is, based on this research, to change the lay-out of the Study B pages, including more blocks of text aligned centrally.

The last analysis was to identify relevant relationships between the significant parameters of both models. CLU had a significant positive relation with Orientation and Editing. Functionally seen, CLU and Editing have no relationship, even though it is statistically related. The relation between CLU and Orientation is explainable. The CLU metric concerns text areas with a non-white background, a text area with borders or lists on a web page. These aspects can help the visitor with indicating the context of the topic.

Another relevant relationship of metrics that have been identified is the relation between NFL and Hierarchy. The NFL parameter indicates the number of times a text is not positioned flush left. The Hierarchy parameter indicates the relevance of different (sub)sections on a web page. Both parameters work together to have a higher click through rate on the website. Making use of clear subsections on the webpage could improve the click through rate.

Referring back to chapter two, where a model was introduced, created from existing literature, with the current knowledge and the conclusions stated above, a new integrated model can be introduced. This model gives indication about the user experience assessment and improvements on a university website. Relevant (and mostly significant) relationship are displayed with a relationship with the click through rate (indicated by '+', '++' for significant relationships). Indicators that are linked by arrows, have an internal relationship together with the click through rate.

	Use	er Experience		
User Experience Design			Usability	
Indicator	Relation	Parameter	Indicator	Relation
Main_Navigation	++	Navigability	CLU	++
Orientation	++		NFL	++
Hierarchy	++			
Tags	++			
Semantic_or_hypertext	+			
	\searrow			
Brand_image	+	Graphic Design	ING	++
/			TIFS	++
			TAMFS	+
Quantity	++	Usability (UXD)		
Editing	++			
Ease				
Flexibility				

6. Discussion

With this research, the research gap that was identified in chapter 2, is filled to a certain extent. The studies about usability and user experience design that have been conducted in the past, were mostly focussed on e-commerce websites, and not specifically websites for universities. With this study, research is conducted about the usability and user experience design on a university website. Studies from the past (Davis & Shipman, 2011; L. Hasan, 2012) also indicated that the usability is an important factor for the conversion rate and/or click through rate of a website. By analysing several different sources, it seems to be that many models cannot be re-used for other types of websites, due to the differentiation of different types of websites available on the web.

With the results of this research, the marketing and communication department of the analysed international oriented university can immediately start with implementing the results and the recommendations. In the appendices, the total scores of both models are displayed. By analysing the individual scores per critical page, the marketing department can process the knowledge and start re-writing some of the lower-scored pages.

This research has also opened doors for looking at other faculties within the university. There might also be some discrepancies between similar studies within a faculty. The first step is to identify click through rates of different studies within a faculty. If there are big differences found, the marketing department can take actions and use this research as a framework to analyse other studies as well.

There are some limitations to this research. In the first chapter, an indication was given that a certain study had less admission than the other. Many external factors can explain this, for example educational trends, market trends or even the alignment of the university with the study. For this research, an originally technical university was analysed. The focus of the university is still on technical studies, but over the past years, the 'gamma' studies have risen in popularity. A similar study concerning other studies of the university can help explain this.

All of the critical pages have been analysed manually. Especially the results and analysis of model II (WPMA) can be processed automatically with specific usability-metric software. This software is using a so-called 'web-crawler'. It automatically selects and scores metrics that are available on the website. A good example is the 'total word count' of web pages. For this research, it was calculated manually whereas it is very suitable to be conducted with automated software.

Another limitation is that websites are subject to change. The scores of the critical pages are just a snapshot of a certain date in the year. It might be possible that one or more pages has already been changed. With a good registration of changes and A/B testing, constructive analyses can be conducted.

Since May 2018 the 'GDPR' law is active in the country of the analysed university and other countries in the European Union. The GDPR is an extension of privacy rights of (online) customers and persons. Also, the degree of registration and distributing personal information of students has been decreased (*Introductie AVG* | *Autoriteit Persoonsgegevens*, 2018). For this research, it meant that online activities cannot be linked towards actual registered admissions, including names, for the university. Despite it is possible to link the 'session IDs' to admissions, it is not recommended to enter this dark-grey area. The university may have the possibility to anonymize the data for further research. Therefore, the click through rate was used in this research, and not the conversion rate. It was not possible to determine the exact conversion.

In this research, only the Usability and Design part of the User Experience was analysed. To study the 'full' user experience, some other tests are necessary. The 'feel' side of the UX can be analysed with alternative methods. Eye-tracking, neuroscience, think-aloud cases etc. These methods can analyse the individual experience and usability of webpages.

As mentioned in the introduction of this research, the competition is high between universities. It might be interesting to find out how other universities are scoring with UUX and usability regarding the same study programmes.

Last but not least, the two studies that have been analysed are different. Study A was a bachelor and study B was a master. It would be interesting to analyse studies which have the same level.

References

- Agag, G. M., & El-Masry, A. A. (2017). Why Do Consumers Trust Online Travel Websites? Drivers and Outcomes of Consumer Trust toward Online Travel Websites. *Journal of Travel Research*, 56(3), 347–369. https://doi.org/10.1177/0047287516643185
- Azzone, G., & Soncin, M. (2020). Factors driving university choice: a principal component analysis on Italian institutions. *Studies in Higher Education*, 45(12), 2426–2438. https://doi.org/10.1080/03075079.2019.1612354
- Babich, N. (2017). *Moving From Graphic Design to UX Design:* Adobe. https://blog.adobe.com/en/2017/09/04/ux-design-for-graphic-designers.html#gs.uznbf6
- Badre, A. (2002). Shaping web usability---interaction design in context. *Interactions*, 9(3), 45–47. https://doi.org/10.1145/506671.506688
- Bae, S., Badi, R., Meintanis, K., Michael Moore, J., Zacchi, A., Hsieh, H., Marshall, C. C., & Shipman, F. M. (2005). Effects of display configurations on document triage. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 3585 LNCS, 130–143. https://doi.org/10.1007/11555261 14
- Beri, B., & Parminder, A. P. (2013). Web Analytics: Increasing Website's Usability and Conversion Rate. In *International Journal of Computer Applications* (Vol. 72, Issue 6). https://doi.org/10.5120/12501-8420
- Cameron, A. J., & MacKeigan, L. D. (2012). Development and pilot testing of a multiple mini-interview for admission to a pharmacy degree program. *American Journal of Pharmaceutical Education*, 76(1). https://doi.org/10.5688/ajpe76110
- Cao, L. (2010). In-depth behavior understanding and use: The behavior informatics approach. *Information Sciences*, *180*(17), 3067–3085. https://doi.org/10.1016/j.ins.2010.03.025
- Cao, L., & Yu, P. S. (2012). Behavior computing: Modeling, analysis, mining and decision. In Behavior Computing: Modeling, Analysis, Mining and Decision. Springer-Verlag London Ltd. https://doi.org/10.1007/978-1-4471-2969-1
- Codina, L. (2007). Evaluación de calidad en sitios web: metodología de proyectos de análisis sectoriales y de realización de auditorias. https://doi.org/http://dx.doi.org/10.15645/Alabe2016.14.5
- Constantinides, E. (2004). Influencing the online consumer's behavior: The Web experience. In *Internet Research* (Vol. 14, Issue 2, pp. 111–126). Emerald Group Publishing Limited. https://doi.org/10.1108/10662240410530835
- Cooper, D., & Schindler, P. (2014). *Business research methods* (12th ed.). McGraw-Hill Education.
- Davis, P. A., & Shipman, F. M. (2011). Learning usability assessment models for web sites. *International Conference on Intelligent User Interfaces, Proceedings IUI*, 195–204. https://doi.org/10.1145/1943403.1943433
- Di Fatta, D., Patton, D., & Viglia, G. (2018). The determinants of conversion rates in SME ecommerce websites. *Journal of Retailing and Consumer Services*, *41*, 161–168. https://doi.org/10.1016/j.jretconser.2017.12.008
- Drossos, D., Zacharioudakis, M., & Dionysiou, G. (2019). Online traffic sources and persuasion techniques: How to change consumer behavior. *ACM International Conference Proceeding Series*, 80–84. https://doi.org/10.1145/3340017.3342243
- Engel, J., Kollat, D., & Blackwell, R. (1968). *Consumer behavior*. Holt Rinehart and Winston.
- Garrett, J. (2010). *The Elements of User Experience: User-Centered Design for the Web and Beyond*. Pearson Education.
- Guney, Y. (2009). Exogenous and endogenous factors influencing students' performance in

undergraduate accounting modules. *Accounting Education*, 18(1), 51–73. https://doi.org/10.1080/09639280701740142

- Haines, G. H., Howard, J. A., & Sheth, J. N. (1970). The Theory of Buyer Behavior. *Journal* of the American Statistical Association, 65(331), 1406. https://doi.org/10.2307/2284311
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2014). Corrigendum to "Editorial Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance." In *Long Range Planning* (Vol. 47, Issue 6, p. 392). Elsevier Ltd. https://doi.org/10.1016/j.lrp.2013.08.016
- Hardgrave, B. C., Wilson, R. L., & Walstrom, K. A. (1994). Predicting graduate student success: A comparison of neural networks and traditional techniques. *Computers and Operations Research*, 21(3), 249–263. https://doi.org/10.1016/0305-0548(94)90088-4
- Hartson, R; Pardha, P. (2012). *The UX Book: Process and Guidelines for Ensuring a Quality User Experience*. Elsevier.
- Hasan, B. (2016). Perceived irritation in online shopping: The impact of website design characteristics. *Computers in Human Behavior*, *54*, 224–230. https://doi.org/10.1016/j.chb.2015.07.056
- Hasan, L. (2012). Evaluating the usability of nine Jordanian university websites. *International Conference on Communications and Information Technology Proceedings*, 91–96. https://doi.org/10.1109/ICCITechnol.2012.6285849
- Hawkins, D. I. (2007). *Consumer behavior : building marketing strategy*. McGraw-Hill/Irwin,.
- Herdiana. (2013). An Audience of One: Behaviorally Targeted Ads as Implied Social Labels. *Journal of Chemical Information and Modeling*, *53*(9), 1689–1699. https://doi.org/10.1017/CBO9781107415324.004
- Hornbæk, K. (2006). Current practice in measuring usability: Challenges to usability studies and research. *International Journal of Human Computer Studies*, 64(2), 79–102. https://doi.org/10.1016/j.ijhcs.2005.06.002
- Introductie AVG | Autoriteit Persoonsgegevens. (2018, May). https://autoriteitpersoonsgegevens.nl/nl/onderwerpen/algemene-informatieavg/algemene-informatie-avg
- Ivory, M. (2000). Preliminary Findings on Quantitative Measures for Distinguishing Highly Rated Information-Centric Web Pages. *Proceedings of 6th Conference on Human Factors and the Web*. https://webtango.berkeley.edu/papers/hfw00/hfw00/
- Kalia, P., Kaur, N., & Singh, T. (2014). Importance of Website Quality in Online Shopping. In Baba Farid College of Management and Technology. http://www.worldwidewebsize.com/
- Kim, B., Dong, Y., Kim, S., & Lee, K. P. (2007). Development of integrated analysis system and tool of perception, recognition, and behavior for Web usability test: With emphasis on eye-tracking, mouse-tracking, and retrospective think aloud. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 4559 LNCS(PART 1), 113–121. https://doi.org/10.1007/978-3-540-73287-7 15
- Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, 44(2), 544–564. https://doi.org/10.1016/J.DSS.2007.07.001
- Law, E. L.-C., Roto, V., Hassenzahl, M., Vermeeren, A. P. O. S., & Kort, J. (2009). Understanding, Scoping and Defining User eXperience: A Survey Approach. https://doi.org/10.1145/1518701.1518813
- Lemon, K. N., & Verhoef, P. C. (2016). Understanding Customer Experience Throughout the Customer Journey. *Journal of Marketing*, 80(6), 69–96.

https://doi.org/10.1509/jm.15.0420

- Li, L., Peng, M., Jiang, N., & Law, R. (2017). An empirical study on the influence of economy hotel website quality on online booking intentions. *International Journal of Hospitality Management*, 63, 1–10. https://doi.org/10.1016/j.ijhm.2017.01.001
- Lim, W. M., Jee, T. W., & De Run, E. C. (2020). Strategic brand management for higher education institutions with graduate degree programs: empirical insights from the higher education marketing mix. *Journal of Strategic Marketing*, 28(3), 225–245. https://doi.org/10.1080/0965254X.2018.1496131
- Lobb, W. B., Wilkin, N. E., McCaffrey, D. J., Wilson, M. C., & Bentley, J. P. (2006). The predictive utility of nontraditional test scores for first-year pharmacy student academic performance. *American Journal of Pharmaceutical Education*, 70(6). https://doi.org/10.5688/aj7006128
- Loiacono, E. T., Watson, R. T., & Goodhue, D. L. (2007). WebQual: An instrument for consumer evaluation of web sites. *International Journal of Electronic Commerce*, 11(3), 51–87. https://doi.org/10.2753/JEC1086-4415110302
- Lu, Z., Lu, J., & Zhang, C. (2002). Website Development and Evaluation in the Chinese Tourism Industry. *Netcom*, *16*(3), 191–208. https://doi.org/10.3406/netco.2002.1556
- M^a, D., García, D. A., Victoria, D., & Navarro, M. (2006). Evaluación de Calidad de Fuentes y Resursos Digitales: Guía de Buenas Practicas. In *revistas.um.es* (Issue 9). https://doi.org/http://hdl.handle.net/11000/2351
- Martinez-Sala, A.-M., Monserrat-Gauchi, J., & Dolores Alemany, M. (2020). User Usable Experience: A three-dimensional approach on usability in tourism websites and a model for its evaluation. *Tourism Management Perspectives*, 33. https://doi.org/https://doi.org/10.1016/j.tmp.2019.100579
- Martínez-Sala, A. M., & Monserrat-Gauchi, J. (2016). La accesibilidad, requisito de los sitios web oficiales. Análisis de la accesibilidad de las webs turísticas oficiales de la costa mediterránea española. AdComunica. Revista Científica de Estrategias, Tendencias e Innovación En Comunicación, 12, 69–90. https://doi.org/10.6035/2174-0992.2016.12.5
- Miklosik, A. (2015). Changes in purchasing decision-making process of consumers in the digital era. *European Journal of Science and Theology*, 11(6), 167–176. https://www.researchgate.net/publication/316699205_Changes_in_purchasing_decisionmaking process of consumers in the digital era
- Moogan, Y. J., & Baron, S. (2003). An analysis of student characteristics within the student decision making process. *Journal of Further and Higher Education*, 27(3), 271–287. https://doi.org/10.1080/0309877032000098699
- Nunnally, J., & Bernstein, I. (1994). Psychometric theory (3rd ed.). McGraw-Hill.
- Park, Y. A., & Gretzel, U. (2007). Success factors for destination marketing web Sites: A qualitative meta-analysis. *Journal of Travel Research*, *46*(1), 46–63. https://doi.org/10.1177/0047287507302381
- Patrick, L. E., Altmaier, E. M., Kuperman, S., & Ugolini, K. (2001). A structured interview for medical school admission, Phase 1: Initial procedures and results. *Academic Medicine*, 76(1), 66–71. https://doi.org/10.1097/00001888-200101000-00018
- Paz, F., Pow-Sang, J. A., & Collantes, L. (2014). Usability Heuristics for Transactional Web Sites. 2014 11th International Conference on Information Technology: New Generations, 627–628. https://doi.org/10.1109/ITNG.2014.81
- Piedmont, R. L. (2014). Inter-item Correlations. In Encyclopedia of Quality of Life and Well-Being Research (pp. 3303–3304). Springer Netherlands. https://doi.org/10.1007/978-94-007-0753-5_1493
- Punchoojit, L., & Hongwarittorrn, N. (2017). Usability Studies on Mobile User Interface Design Patterns: A Systematic Literature Review. In *Advances in Human-Computer*

Interaction (Vol. 2017). Hindawi Limited. https://doi.org/10.1155/2017/6787504

- Raban, M. Z., Tariq, A., Richardson, L., Byrne, M., Robinson, M., Li, L., Westbrook, J. I., & Baysari, M. T. (2016). Evaluation of Web-Based Consumer Medication Information: Content and Usability of 4 Australian Websites. *Interactive Journal of Medical Research*, 5(3), e21. https://doi.org/10.2196/ijmr.5651
- Rolfe, I. E., Pearson, S. -A, O'Connell, D. L., & Dickinson, J. A. (1995). Finding solutions to the rural doctor shortage: the roles of selection versus undergraduate medical education at Newcastle. *Australian and New Zealand Journal of Medicine*, 25(5), 512–517. https://doi.org/10.1111/j.1445-5994.1995.tb01497.x
- Solomon, M., Hogg, M., Askegaard, S., & Bamossy, G. (2019). *Consumer Behaviour: A European Perspective*. Pearson Education.
- Sternberg, R. J., Bonney, C. R., Gabora, L., & Merrifield, M. (2012). WICS: A Model for College and University Admissions. *Educational Psychologist*, 47(1), 30–41. https://doi.org/10.1080/00461520.2011.638882
- Tseng, M. M., Qinhai, ma, & su, C. J. (1999). Mapping customers' service experience for operations improvement. *Business Process Management Journal*, 5(1), 50–64. https://doi.org/10.1108/14637159910249126
- Usability: Definitions and concepts. (2018). International Organization for Standardization. https://www.iso.org/obp/ui/#iso:std:iso:9241:-11:ed-2:v1:en

Appendices

Programme	Click Through Rate
IBA (BA)	2,29%
BA (MSc)	0,8%
Master + Bachelor	1,27%
CW (BA)	1,63%
CS (MSc)	0,68%
Master + Bachelor	0,94%
Total All	1,16%

Appendix 1: Click Through rates table overview

							Study A	dmissions L	Jsers	Conversion				
							CS (MSc)	161	23651	0,68%				
				Top-10 pages to C	onversion									
Parameter	Indicator	Description Score		IBA 1a	16	10	ld 1		S	12	4	li li		,
Graphic Design	Brand_image	Implementation of the 0-3		m	m	m	m	e	2	e e	e	2	2	2
	Argumentative analysis	Analysis of the expre 0-3		2	2	1	1	2	2	2	1	2	2	2
	Clarity rt	Adequate contrast be 0-2		2	2		2	- 2	2 7	2	, 1	2	2	2
	педющу	Use of typography the	10	7	7	7	- 1	- 0	- 1	7	-	• •		7
		Mavimum Ave Se	2.50	9 7 C	л 7 С	1 75	1 75	0 0	1 75	9 7 C	0 7	, 1	175	0 0
Navioahility	Main Navigation	Permanent main nav 0-3			1 1	5 /17 3	r,'t	4 0	<i>cuit</i>	7	C/1	<i>C1/1</i>	<i>C1/1</i>	4 67
(Expressiveness	Capacity to express w0-1			, 0	, .	n - 4	0	10	. 0	1 -	10	; 0	0
	Identification	Basic identification o 0-1		1		1	. 4	1	1	1			. 4	1
	Structural navigation	Possibility of making 0-3		2	2	1	1	1	1	2	2	1	2	1
	Orientation	Indications of contex 0-3		3	e	3	£	2	2	2	2	2	2	2
	Hierarchy	Direct or indirect ind 0-3		e	e	2	2	2	1	2	2	1	1	1
	Local Navigation	Specific navigation sy 0-1		1	1	1	1	0	1	1	1	1	1	1
	Remote_navigation	Remote navigation e ^{[0-3}		33	33	2	2	1	1	3	e	1	1	1
	Semanne_or_nypenext_naviga	Links from some sect 0-1		0	0	1	1	1	0	0	1	0	0	0
	Tags	Set of terms or icons ⁰⁻³		3	33	3	£	2	1	3	£	1	1	1
	Search_Engine	Offers the possibility 0-3		1	1	1	1	1	1	1	1	1	1	1
		Maximum Score N	25	20	20	19	19	14	11	17	19	11	12	12
		Maximum Avg. Sc	2.27	1,82	1,82	1,73	1,73	1,27	1,00	1,55	1,73	1,00	1,09	1,09
Usability														
Content	Coherence	Clarity and coherence 0-1		1	1	1	1	1	1	1	1	1	1	1
	Interest	Interest of the websilo-3		e	e	2	2	2	1	e	m	1	2	2
	Quantity	Volume of informatio-3		3	ŝ	2	£	m	1	2	n	1	1	1
	Rigor	Careful preparation (0-3		2	2	2	2	2	2	2	m	1	1	2
	Editing	Monitoring and correl-3		2	2	1	7	1	2	2	2	2	2	2
	Updating	Update frequency of 0-3		2	2	2	2	2	m	3	£	3	£	£
	F							,						
Ergonomics	Ease F12-515	Consistences the genera of a		n d	'n	n a	'n	7 6	7	n d	n o	7	7	7
	F lexibility	Capacity offered to tio-3		7 ,	7	7 ,	7	5 5	2	7 7	7		н о	2
	Multimedia_resources	Ease of use and operio-3					2	m i	2			2	2	7
	Speed	Appropriate loading 0-3		m	m	m	m	2	m	m	m	m	2	m
Processes	Display of status	Clear and precise dis ₀₋₃		2	2	2	2	1	1	2	2	1	1	2
	Conventions	Information about the 0-3		m	m	m	m	m	m	e	£	2	m	m
Errors	Correction of errors	Possibility to undo tr 0-1		1		1	-	-	-	-	-	-	1	E
	Terms_and_Policies	Easily accessible into 0-3		m	m	m	m	m	m	m	m	m	m	m
Interactivity	Contact information	Inclusion of a channe ⁰⁻³		1	1	1	1	1	1	1	1	1	1	1
	Customized_access	Possibility of custom 0-2		0	0	0	0	0	0	0	0	0	0	0
	Customized_new sletter	Possibility given to u 0-2		1	1	1	0	1	1	1	1	1	0	1
	Specific_applications	Applications and serv ⁰⁻³		8	3	8	£	m	e	3	£	£	e	3
	Blog_and_social_networks	Presence of links to t 0-3		3	33	33	£	m	3	3	e	3	3	3
		Maximum Score U	51	39	39	36	37	36	35	39	41	32	32	37
		Maximum Avg. Sc	2.68	2,05	2,05	1,89	1,95	1,89	1,84	2,05	2,16	1,68	1,68	1,95
		Total Score	86		5	0	5	2	3			Ē	5	1
				8	8	70	8	ĉ	6	6	8	R	TC	/c
		Total Avg. Score	2.53	000	00 0		10.4					:		
				7,00	2,00	1,04	CQ/T	1/1	OC'T	TC'T	Ř,⊤	1,47	UC'T	T,Do

Appendix 2: UUX scores

Appendix 3: Reliability statistics output SPSS for UUX

Relia	bility Statistic	cs
	Cronbach's	
	Alpha Based on	
Cronbach's	Standardized	
Alpha	Items	N of Items
.630	.709	3

Appendix 4: Inter-item correlation matrix UUX-model

Inter			
	Graphic_Design	Navigability	Usability
Graphic_Design	1.000	.262	.324
Navigability	.262	1.000	.759
Usability	.324	.759	1.000

Appendix 5: Multiple linear regression results Graphic_Design (UUX)

		Model S	ummary	
			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.339ª	.115	.017	.01150

a. Predictors: (Constant), Graphic_Design

Coefficients^a

				Standardized		
		Unstandardize	ed Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	012	.027		453	.662
	Graphic_Design	.015	.014	.339	1.081	.308

a. Dependent Variable: Click_Through_Rate

Appendix 6: Multiple linear regression results Navigability (UUX)

		Model S	ummary	
			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.929ª	.863	.845	.00931

a. Predictors: (Constant), Navigability

Coefficients^a

				Standardized		
		Unstandardize	ed Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	014	.013		-1.137	.285
	Navigability	.022	.008	.648	2.551	.031

a. Dependent Variable: Click_Through_Rate

Appendix 7: Multiple linear regression results Usability (UUX)

		Model S	ummary	
			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.254ª	.65	039	.01182

a. Predictors: (Constant), Usability

Coefficients^a

				Standardized		
		Unstandardize	ed Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	021	.048		434	.675
	Usability	.020	.025	.254	1.789	.045

a. Dependent Variable: Click_Through_Rate

Appendix 8 : Multiple linear regression results Total UUX Score

				Coefficients	a,b	
				Standardized		
		Unstandardize	d Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	UUX_Total	.010	.002	.863	5.396	.003

a. Dependent Variable: Click_Through_Rate

Appendix 9: Correlation Matrix UUX model

		Argume	Correl	lations	Main_Navigs	tati Expressive	e	Structural_N			Local Naviga	S Navi S	smentic_or_ spertext_Na	Sea	ch, Engi						W	ultmedia_r	Display	Of st	Correction	f Tems_And	Contact_Infor	Customized	stornizedSpecific	Blog_And_	8. 8
Brand_Image	Bra Pearson Correlation	and_image e_ana	hsis Cl	anty Legibl. -,35631	181 141 141	22 149 149	Identificatio	15.,31	0rientadoi 1 .57	In Hierarchy 1 .864	tion -,239	764	vigation .571	Tags .954"	. P Cohe	arence Intere.	st Quantity	Rigor ,601	Editing Upda -,463 -,6	ing Ease 90' ,828"	Flexibility 6	ssources St -,428	,134 att	s Conventio	ansErrors	Polities	a.	Access N	ewsletter cafi	s a.	۹.
	Sig. (2-talied) N	÷	152	,282 ,31	11 1	166	152 152	. 35	3 ,06	1 ,001	.479	,006	.066	00 E	. =	. 1	12 ,000	,050	152	11 .002 11 11	.040	1190	,695	.048	11		. =	. E	11	. =	: =
Argumentative_analysis	Pearson Correlation Sig (2,4a)ed)	-,463	-	770	-1;- 64 63	149 -1,01	_00	41,	186,- 6 18c	6 -,156	-,194	-,289	-,810	-535	۹.	e. 11-	30 -,392	-,505	542	261 -,559 128 074	-,289	289	-,289	-463	194		•.	۰.	,241	۹.	۹.
Clarks	N Daareon Consistion	11	11 11	1		1 1 9	=			11 11	11	1 F 8	11	= =	. E. 4	11	11	11	1	11 11	= 52	11 19	= 4	1 = 32	= =		Ξ.	5.	= =	· 11 4	£ *
funno	Sig. (2-taled)	,282	900		00	1 00	106	6. 6.	69	5 ,726	662	356	.040	82	. 1	· · · · ·	36 527	980	928	300	15	148	1 15	282	362				119	. 1	. - :
Legibility	N Pearson Correlation	311	149	-,043	1	11 10	149	- 92	7 .44	1 11 897	.289	11	-11	.408	s •.	29' 1	33	161.	149	11 11 267 ,467	430	-,620	130	,069 1	11 1		-	= •.	130	£ ª.	= • ·
	Sig. (2-talied) N	11 11	11	11	= =	148	11 11		8 t	1 1129	11	et :	.353	11	. ±	11	11 .746	,635	11	11 1148	11	142	186	e10, 11	11		. E	` =	881 [.] ±	. 11	. =
Main_Navigation	Pearson Correlation Sig. (2-tailed)	,449 ,166	-,149 ,662	,043 .4. ,900 .14	48		149	42	7 ,690 8 ,011	0 533 9 ,091	-,289	.746	,311 ,353	372	a	e	32 ,498 33 ,119	,194	-,559 -,8	13 ⁻ ,267 301 ,428	,516 ,104	,052	,043	166	346 297		•	a. '	900	a	- •. ·
Expressiveness	N Pearson Correlation	11	000	1111.	49 49	11 55	= -		1 86,	1 11 6 ,156	194	11	£ 10	11	£ *-	11 e. 21	30 ,392	11		11 11	11	11	11	11 ,463 ,1	11 13		= *	= *-	11	11 °.	£ •.
	Sig. (2-tailed) N	11	1 000	11 1	11 6	11	=	99	1 24	11 648	11 568	11	11	08) II '	· = •		11 11	113	11 .	11 11	11	11	11 389	28 ¹ H ,	11 1		=	. = .	11	. = .	. = .
Identific ation	Pearson Correlation Sig. (2-tailed)	•• •	•	•	•	•	•					•. •	•. •		. ·	•. •			•. •	•	•. •	•. •	•		•. •		•	•. •	•. •		. -
Structural_Navigation	N Pearson Correlation	11 HE	149	-,043 ,26	11 672t	11 3671	11 149		1 1.06	1 11 9 .487	,289	11	-,311	11	5 °.	11 .788	11 11	161	.559	11 11 11 10 10 10 10 10 10 10 10 10 10 1	043	-,620	-,043	31 11	11 289		= *	= *	11 - 043	E *-	д a.
	Sig. (2-talled) N	11	,662 11	.900 .41	11 .4.	11	11 1.		- ⁸	1 ,129	,389	11	.353	,213	. E	. 11	04 ,348 11 11	,635	11	770 ,148 11 11	.900	.042	900	,353	11	. =	. E	` =	900	. =	· =
Orientation	Pearson Correlation Sig. (2-tailed)	571	-,386	-,134 ,4-	66 .01	-06 61	386	90, 98		1 720	,239	,496	,214	.661	a		36 ,554	,134	-,386 -,8:	18" ,690° 002 019	,356	-,454	,356	571	239		•	a	+134 685	a, '	a
	N	11	=	11 00			= -			= .	1	=		11	. 1 . 4		=	11		=	=		11		:=;		τ.	1	į = 3	11	11
Lingan	sig. (2-tailed)	,001	648	726 .1.	10 10	191	84	- ⁻	6.10	-	, 814 14	,002	, 192 , 572	100	. 1		000 000	166	011- 0148	004	280	280'	536	190	575				2017 2017		. - :
Local_Navigation	N Pearson Correlation	-,239	-194	-149 ,25	1121	11 681		- 82	9 ,23	080,- 9	= -	.319	-,418	190	s •.	30 [°]	11 11	-,056	86	346 ,346	-149	-,671	.671	11	. 00		-	: •·	11	E 1.	= •.
	Sig. (2-talled) N	.479	11	,662 ,31	11 1	11	11 1.		174, 1	9 11 11	E	,338	,200	88 F	. ±	11	14 ,338	,870	104	297 ,297 11 11	,662	,024	11	.200	11 1		. =	` =	,662 11	. =	. =
Remote_Navigation	Pearson Correlation Stg. (2-talled)	.764"	-,289	.310 .41	1. 198	111	68.	107	6 .49	6 .821 ¹ 3 .002	,319	-	.076	883" 000	a	.78, ⁶ .	2 ^{°°} ,684 [°] 10 .020	,571	.658	295 ,922 ^m 378 .000	.476	-,843	476 .139	.764"	319 338		•	•. •	,214	a	a
Provide of Provident	N N	5 F (E =	11		: : :) = 1				=	11	÷ .	=	. 1 4	. = .	11	4	[= }	11 1		(=)	1 = 1	=	1		. = .		{ = ;	. 11 4	. <u>1</u>
Sememo_or_Hypertext_ Navigation	Pearson Correlation Sig. (2-tailed)	990	,003	,040	E 69	311 ,8 153 ,1	103	35	3 21	4 ,192 7 ,572	.200	,076	-	156	. · ;	0.8	72 ,554	,501 ,116	.003	115, 353	,356	,134 ,695	-,134 ,695	611	123			•	-134 ,095		. - ;
Tags	N Pearson Correlation	11 .954"	- 236	-,412 ,40	11 08	172	11 236	- 9	8 ,661		190,	.883	459	= -	s •.	11 °.	5 844 H	1109'	- 2112 6	11 13 13 13 13 13 14 14 14 14 14 14 14 14 14 14 14 14 14	11	-,646	343	.763	11 666		-	E *·	11	E *-	= •.
	Sig. (2-tailed) N	,000	11	,208 ,2 11 1	11 2	11	11 1.	- 21	3 ,02	100, 11	,858	,000	158	1	. E	. 11	11 101	151	342	11 11	,053	,032	301	11	11 1	=) =	÷	282 II	· =	. =
Search_Engine	Pearson Correlation Sig. (2-tailed)	•.	•. •	•. •	•. •	•. •	•. •			•	•.	•. •	•. •	•. ·	۹.	•. •	•. ·	•. •	•. •	•. ·	•. ·	•. •	a	•. •	•. •		•. •	•. *	•. *	a	a. -
Coherence	N Pearson Correlation	Ε	Ξ	: : :	= "	E *-	E .	-		= "	£ ?.	= "	= "	£ °.	£ ª.	E *-	E *	£ °.	= "	E .	= "	= "	t: • ·	£ °.	= *		E *-	ε	۳ °	£ ª.	£ ª.
	Sig. (2-tailed)										:	=	· ' :				· · ·			· · · · ·				=				· ' 3	· ' :		. : :
Interest	N Pearson Correlation	,720	-,130	-,210 ,52	33 22	1, 252	130	188	- 60	6 .774 ⁻	080'	872	.072	.765	= °.	= •.	1 1	539	156	278 7.42	449	-,647	,120	720	522		-	5 * .	1 001	g 4.	- • ·
	Sig. (2-tailed) N	11 1	11	11 1	19	11	11 1.	8 -	1 31	1 11	11 1	00 11 .	,833	90 E F	· = ·	. = .	11 10	11	11	11 11	11	11	11	11 012	11		. = .	· = ·	,726	. 11	. =
Quantity	Pearson Correlation Sig. (2-tailed)	,916 ,000	-,392	-214 .1	46	19	392		8 '01'	7 ,000	-,319	,020	,077	,001	•	- 0 - 0		,048	-,392 -,7	19 .701 013 .016	,066	-,257	,048	120	383 245		•. •	•. •	948	۹. ۱	•. •
Rigor	N Pearson Correlation	11	11	-,54216	11 19	34	11 105	- 95.	+ F.	4 ,449	-,056	11	11	11	р °-	11 e .	11 11 39 ,607 [°]		-108	11 11	333° I	11	375	11	11 12	=	= *	= *	375	E *-	: • =
	Sig. (2-talled) N	.050	113	.085 .6. 11 1	11 .5	11	113		1.69	1 ,166	.870	.066	116	190	. =	. 11	87 ,048 11 11	11	121	335 ,080 11 11	.001 11	,256	,256 11	11 .050	11 1		. =	. E	992 ⁻	· =	: =
Editing	Pearson Correlation Sig. (2-tailsd)	-,463	,542 ,085	,241 .1. ,476 .66	49 -,5 62 ,01	174 .6	542	. 55	9 -,38	1 .,156	,516	,165 ,628	.,810	-,317 ,342	a. ·	문 월 4	56 -,392 18 ,233	-,108		71 -,149 024 ,662	-,289	-,346	,241	1- 039 210	568		•. •	•. •	,241 ,476	a, ·	a
Updating	N Pearson Correlation	11 -,690*	11	11 · · · · · · · · · · · · · · · · · ·	11 -,832	± .6	11 10		1.828	1 11 -,742"	11	-,295	11 -,449	11	£ •.	11 23	11 11 78 -,719 [*]	11	11	11 11	11 -,430	11	11 043	11 116-	11 12		= *	= *·	11 ,043	11 °.	<u>ء</u> ۽
	Sig. (2-talled) N	,019 11	11	,900 ,4: 11 1	11 10	101	11		1 ,00:	1 ,009	,297	,378	166	050	. E	. 1	07 ,013 11 11	,635	,024	11 148	11	11	900	,353 ,3	11		. =	· =	900	· =	. =
Ease	Pearson Correlation Sig. (2-tailed)	,828" ,002	-,559	-,430 ,41 ,186 ,14	167	267 J	559		7 ,690	0 788" 9 ,004	,346	,922 ,000	,311 ,353	.958°	a	.a. 745	2 ^{°°} ,701 [°] 39 ,016	,549 ,080	-,149 -,	11 11	,516 ,104	-,800°.	,516 ,104	.828" .002	346 297		•	•. *	,043	a	a. -
Fleedbilty	N Pearson Correlation	11 ,624	-,289	11 -,222 .45	30 ,51	11 11	11 1	1 90	3 ,35	6 ,539	11	11	,356	11	<u>ت</u> م.	11 a.	11 11	11 ,833"	-,289 -,	11 11 11 11 11 11 11 11 11 11 11 11 11	= -	-,267	,389	11 .624 [°] .6	= '2	= -	= *	E *-	11 (M	ц. я.	<u>ه</u> .
	Sig. (2-talied) N	11	11 389	11 11	1 1	104	11 1.		1 .28	1 11	.662	11	11	103	. ±	- E	11 11	100,	11	11 111	÷	.428	11	11 .	11		. =	, E	11	. ±	. =
Multimedia_resources	Pearson Correlation Sig. (2-tailed)	-,428	389	,467 -,62 ,148 ,04	42 <u>, 0</u>	180	189	.04	2 ,16	14 -,539 0 ,087	-,671 ,024	-,843	,134	-,646 ,032	a	- - -	17 -,257 32 ,445	-,375	.297	352 -,800 380 ,003	-,267	-	.633	-7221 .0121	179 599		•.	•. ·	- 267 , 428	a. ·	a, ·
Speed	N Pearson Correlation	11	11	11 -,222 ,45	30 .0	11 143	11 189		3 ,35	6 ,210	11	11,476	-,134	11 ,343	5.2	1 *-	20 ,048	,375	241	11 11 11	11	-,633	= -	11 ,624	11 149		= •	= *	= 80	5 ×	5 °.
Disolar Of status	sig. (2-tated) N Pearson Correlation	11	an 11 139	11 11 11 11 11 11 11 11 11 11 11 11 11	8 II '9	11 19	6 II 0		0 + +	11 1 11 1 11 1	570 11	501. 11	11	11	. = .	11	11 11 11 11 11 11 11 11 11 11 11 11 11	11	014 11 020-	11 114 11 114 118 119 119	11	obu, 11 *227	11 624	040 11 1 1	11 17		. = .	· = *	131	. = .	: = -
	Sig. (2-talled) N	.048	152	11 10	1. 1	11	162 11	. 35	3 ,06	6 ,051	11	,006	.599	1000	. 5	. 1	12 ,120	,050	910	353 ,002	.040	.012	.040	=	11		. =	. E	695 11	. 11	: =
Conventions	Pearson Correlation Sig. (2-talied)	.418	-,194	-,149	89	346	194	. 38	9 23	1361 9 ,275	-,100	,338	,239	389	a		22 ,383 19 ,245	,559	-194	289 ,346 389 ,297	.671	-,179	-,149 ,662	,418 ,200	-		•. •	a. '	-,149 ,662	a, -	a
Correction_of_Errors	N Pearson Correlation	= *	£ *·	£ *.	= *-	= *·	E			= "	= *	= *	= "	£ *-	£ •·	E *-	E .	£ •.	= "-	Е е. Е .	= "	= *-	£ •.	£ •.	= *		= *	£ *·	= *·	£ *·	£ *.
	Sig. (2-tailed) N	. E	· =	. 5	1	- E	. 1	-	-	. =	· =	· =	· =	. 2	. =	. E	' = '	. 1	· =	. =	· =	. =	· =	· =	. =	=	. =	. =	. .	. =	· =
Terms_And_Polities	Pearson Correlation Sig. (2-tailed)	•.	a	•, -	•. •	•	•			•	•.	•. •	•	a	.	•. •	•	•, •	•. ·	•	•	•. *	a	a	•. •			•. '	•. •	a	a
Contact_Information	N Pearson Correlation	= *	= •	동작	= *	= *-	= *·			E 7.	= "	£ *·	= "	а ^{л.}	а ^{л.}	= *	= *·	£ *	= "	= *	= 1.	= "	<u>ب</u> ه ع	<u>ت</u>	= *		= *	5 °.	= *·	5 T-	<u>ب</u> ة ع
	Sig. (2-talied) N	, ±	÷ ۲	. =	1 2	' E	. 11	-	-	1 =	. 5	· =	. E	· =	. ±	. E	. E	. 1	· =	. t	. ±	. =	. E	. ±	· =		÷	` =	` =	. 11	. 5
Customized_Access	Pearson Correlation Sig. (2-tailed)	•	•. •	•. •	•. •	•. •	•.			•	•.	•. •	•. ·	•. •	a. ·	•. 1	•. •	a	•. •	•. •	•. •	•. •	a	•. •	•. •		•. •	a.	•. •	•. •	•. ·
Customized_Newsletter	N Pearson Correlation	134	241	-,222 ,45	30 .0.	11	M H	- 96	313	4 210	11	214	-,134	11	E *.	1 *·	20 ,048	,375	241	11 11 11	11	-,267	11	11	11 149		£ *·	= *	- 1	1 e.	E •.
Annula Annual A	Sig. (2-tailed) N	11	476	11 11	8 11 4	11	476	6	0 1 4	11 236	11	11	11	11	. = .	11 1	26 889	11	1 1 476	11 ,900	11	428	11	11 4	11		. = -	121	: •	. = .	: = -
Specific_rephyremotion	Pearson conceance Sig. (2-tailed) M	- 1 =	· ' =	E		- 1 =	= =			=	· ` =	· ' =	· `=	- ° =	- ` -	=	- 1 =	· . E	· ' =	- = - =	· ' =	· ' =	·	- ° =			=	- ° =	- ° =	· 5	- -
Blog_And_Social_Networks	Pearson Correlation Std. (2-tatled)		•.	•.		•.				•	•.	•.	•.	•. •		•	•	•.	• • •	· · ·	•.	•.	•.	. •. •			•				•.
**. Correlation is significa	N mt at the 0.01 level (2-tailed).	1	Ξ	=	Ξ	Ŧ	1	-	-	1	=	Ξ	÷	1	Ξ	Ξ	=	11	÷	=	÷	Ξ	Ŧ	÷	=	-	=	Ŧ	Ξ	Ŧ	÷
 Correlation is significa. Connot ha committed his 	nt at the 0.05 level (2-tailed). acouse at least one of the va	viohles is ronstant.																													

Appendix 10:Reliability StatisticsCronbach'sAlpha Based onCronbach'sStandardizedAlphaItemsN of Items,604,85613

	ΨT	BW	EW	CLU	NFL	EC	LNK	BMI	PEBW	TIFS	TAMFS	WPFS	PIWPFS
TW	1,000	1,000	,675	,401	,189	,447	,410	,273	-,472	,257	,512	,702	,197
BW	1,000	1,000	,675	,401	,189	,447	,410	,273	-,472	,257	,512	,702	,197
EW	,675	,675	1,000	,486	-,348	,475	,355	,119	,263	,109	,381	,580	-,014
CLU	,401	,401	,486	1,000	,119	,494	,541	,273	-,004	,697	,687	,549	,621
NFL	,189	,189	-,348	,119	1,000	000'	,066	,025	-,545	,371	,249	-,091	,461
FC	,447	,447	,475	,494	,000	1,000	,746	-,047	-,021	,169	,605	,673	,057
LNK	,410	,410	,355	,541	,066	,746	1,000	,108	-,016	,247	,485	,638	,151
BMI	,273	,273	,119	,273	,025	-,047	,108	1,000	-,166	,774	,613	,537	,710
PEBW	-,472	-,472	,263	-,004	-,545	-,021	-,016	-,166	1,000	-,216	-,164	-,144	-,320
TIFS	,257	,257	,109	,697	,371	,169	,247	,774	-,216	1,00	,785	,468	,971
TAMFS	,512	,512	,381	,687	,249	,605	,485	,613	-,164	,785	1,000	,840	,653
WPFS	,702	,702	,580	,549	-,091	,673	,638	,537	-,144	,468	,840	1,000	,297
PIWPFS	,197	,197	-,014	,621	,461	,057	,151	,710	-,320	,971	,653	,297	1,000

Appendix 11:Inter item correlation matrix WPMA

Appendix 12: TW

		Model S	ummary	
			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.192ª	.037	070	.01199

a. Predictors: (Constant), TW

			Coefficient	S ^a		
				Standardized		
		Unstandardize	ed Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.013	.008		1.698	.124
	TW	5.125E-6	.000	.192	.588	.571

a. Dependent Variable: Click_Through_Rate

Appendix 13: BW

		Model S	ummary	
			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.192ª	.037	070	.01199

a. Predictors: (Constant), BW

Coefficients^a

				Standardized		
		Unstandardize	ed Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.013	.008		1.698	.124
	BW	5.125E-6	.000	.192	.588	.571

a. Dependent Variable: Click_Through_Rate

Appendix 14: EW

		Model S	ummary	
			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.161ª	.026	082	.01206

a. Predictors: (Constant), EW

		Coefficient	S ^a		
			Standardized		
	Unstandardize	ed Coefficients	Coefficients		
Model	В	Std. Error	Beta	t	Sig.

1	(Constant)	.019	.006		3.104	.013
	EW	-3.461E-5	.000	161	491	.636

a. Dependent Variable: Click_Through_Rate

Appendix 15: CLU

Model Summary								
			Adjusted R	Std. Error of the				
Model	R	R Square	Square	Estimate				
1	.575 ^a	.331	.257	.01000				

a. Predictors: (Constant), CLU

Coefficients^a

				Standardized		
		Unstandardize	Unstandardized Coefficients			
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.010	.005		2.110	.064
	CLU	.002	.001	.575	2.110	.064

a. Dependent Variable: Click_Through_Rate

Appendix 16: NFL

Model Summary

			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.765ª	.585	.538	.00788

a. Predictors: (Constant), NFL

Coefficients^a

				Standardized		
Unstandardized Coefficients		Coefficients				
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.006	.004		1.549	.156
	NFL	.003	.001	.765	3.559	.006

a. Dependent Variable: Click_Through_Rate

Appendix 17: FC

Model Summary

			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.043ª	.002	109	.01221

a. Predictors: (Constant), FC

Coefficients^a

				Standardized		
		Unstandardize	ed Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.019	.013		1.413	.191
	FC	001	.005	043	129	.900

a. Dependent Variable: Click_Through_Rate

Appendix 18: LNK

Model Summary								
Adjusted R Std. Error of t								
Model	R	R Square	Square	Estimate				
1	.018ª	.000	111	.01222				

a. Predictors: (Constant), LNK

Coefficients^a

				Standardized		
		Unstandardize	ed Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.017	.005		3.170	.011
	LNK	2.309E-5	.000	.018	.053	.959

a. Dependent Variable: Click_Through_Rate

Appendix 19: IMG

Model Summary

			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.289ª	.083	019	.01170

a. Predictors: (Constant), IMG

Coefficients^a

				Standardized		
		Unstandardize	ed Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.012	.006		2.013	.075
	IMG	.003	.003	.289	.905	.389

a. Dependent Variable: Click_Through_Rate

Appendix 20: TIFS

Model Summary								
			Adjusted R	Std. Error of the				
Model	R	R Square	Square	Estimate				
1	.750 ^a	.562	.514	.00809				

a. Predictors: (Constant), TIFS

Coefficients^a

				Standardized		
		Unstandardize	Coefficients			
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.004	.005		.776	.458
	TIFS	.001	.000	.750	3.400	.008

a. Dependent Variable: Click_Through_Rate

Appendix 21: TAMFS

Model Summary

			Adjusted R	Std. Error of the
Model	R	R Square	Square	Estimate
1	.458ª	.210	.122	.01086

a. Predictors: (Constant), TAMFS

Coefficients^a

				Standardized		
		Unstandardize	ed Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	012	.019		632	.543
	TAMFS	.000	.000	.458	1.547	.156

a. Dependent Variable: Click_Through_Rate

Appendix 22: WPFS

Model Summary						
			Adjusted R	Std. Error of the		
Model	R	R Square	Square	Estimate		
1	.046ª	.002	109	.01221		

a. Predictors: (Constant), WPFS

Coefficients^a

				Standardized		
		Unstandardize	d Coefficients	Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	.013	.029		.439	.671
	WPFS	6.047E-5	.000	.046	.137	.894

a. Dependent Variable: Click_Through_Rate

Appendix 23: Results WPMA Model

Code	WPMA	1f	lg 📘	1h 📑	1i	1j	CS_AVG
TW	Number of words on a webpage	240	1140	939	271	342	697,166667
BW	Number of words in body of web page	240	1140	939	271	342	697,166667
NBW	Number of words not in body of web page	0	0	0	0	0	0
EW	Number of words emphasized by bold face or italics	43	97	50	40	42	79,5
	Number of text areas with a non-white background, with borders, with						
CLU	horizontal rule or in a list	1	2	1	1	1	1,66666667
NFL	Number of times blocks of text are not positioned flush left	2	5	1	1	2	1,83333333
FC	Number of unique colors of fonts used for all words	2	4	3	2	2	2,66666667
LNK	Number of internal and external hypertext links	6	26	3	6	6	8,5
IMG	Number of images embedded in a page	1	2	2	1	1	1,33333333
PEBW	% of Body words emphasized by bold face or italics	0,18	0,09	0,05	0,15	0,12	0,12529665
PNBW	% of non-body words to total words	0	0	0	0	0	0
TIFS	Total sizes of files of images used in a web page (MB)	0,5	1,1	0,8	0,5	0,5	0,68333333
	Total of web page file size, total of image file sizes and size of file of CSS						
TAMFS	for web page (MB)	7,8	9,5	8,9	5,6	6,8	7,83333333
	Size of file of web page only without including sizes of files of images or						
WPFS	CSS (MB)	6,4	7,6	7,4	5,4	5,8	6,58333333
PIWPFS	% of image file size to web page file size	0,06	0,12	0,09	0,09	0,07	0,08598802
Code	WPMA	1a	1b	1c	1d	1e	IBA_AVG
TW	Number of words on a webpage	609	9 1192	213	1133	1140	857,4
BW	Number of words in body of web page	609	9 1192	213	1133	1140	857,4
NBW	Number of words not in body of web page	C) (0 0	0 0	0	0
EW	Number of words emphasized by bold face or italics	25	5 42	30	101	116	62,8
CLU	Number of text areas with a non-white background, with borders, with	-				10	4.0
	horizontal rule or in a list	3	5	- 4	6	10	4,8
NFL	Number of times blocks of text are not positioned flush left	E			4	5	6,6
FC	Number of unique colors of fonts used for all words	2		3	2	4	2,6
	Number of internal and external hypertext links	2	2 3	5 <u> </u>	5 IU	26	8,8
	Number of images embedded in a page	1			5	0.10	2
PEBW	% of Body words emphasized by bold face of italics	0,04	+ 0,04	0,14	0,09	0,10	0,08160582
PNBW	% of non-body words to total words				0 0	0	0
TIFS	Total sizes of files of images used in a web page (MB)	1,3	s 0,9	, Z, I	. 2,9	1,8	1,8
TAMFS	Total of web page file size, total of image file sizes and size of file of CSS for web page (MB)	7,4	1 7,8	9,9	10,6	10,3	9,2
TAMFS	Total of web page file size, total of image file sizes and size of file of CSS for web page (MB) Size of file of web page only without including sizes of files of images or	7,4	¥ 7,8	9,9	10,6	10,3	9,2
TAMFS WPFS	Total of web page file size, total of image file sizes and size of file of CSS for web page (MB) Size of file of web page only without including sizes of files of images or CSS (MB)	7,4	1 7,8 5 6,1	9,9 . 6,2	10,6 2 7,7	10,3	9,2

Appendix 24:

Parameter	Indicator	Description	Score
Graphic Design			
	Brand_image	Implementation of the functional and emotional elements of the brand, the brand logo, colour schemes, typography, style, tone, as well as the role of images and graphics.	0-3
	Argumentative_analysis	Analysis of the expressive and visual language. The style of texts and images should be uniform, coherent with the brand image.	0-3
	Clarity	Adequate contrast between figure and background that fits the brand image and current trends without compromising on usability.	0-2
	Legibility	Use of typography that fits the brand image and current trends, without affecting the ease of reading.	0-2
		Maximum Score Graphic Design	10
		Maximum Avg. Score Graphic Design	2.50
Navigability			
	Main_Navigation	Permanent main navigation menu	0-3
	Expressiveness	Capacity to express with a limited number of options the main contents in the main menu (constant navigation).	0-1
	Identification	Basic identification of the different contents based on title, source and date.	0-1

	Structural_navigation	Possibility of making effective non-sequential navigation.	0-3
	Orientation	Indications of context	0-3
	Hierarchy	Direct or indirect indication of the relevance of the different sections and subsections.	0-3
	Local_Navigation	Specific navigation system for some sections of the website.	0-1
	Remote_navigation	Remote navigation elements, and supplemental navigation systems,	0-3
	Semantic_or_hypertext_navigation	Links from some sections and subsections to other non-structurally related sections and subsections.	0-1
	Tags	Set of terms or icons used to name the different sections of the resource.	0-3
	Search_Engine	Offers the possibility of searching and/or retrieving information through questions or keywords.	0-3
Content	Coherence	Clarity and coherence in the presentation of the website's theme, target audience and objectives and between these three elements	0-1
	Interest	Interest of the website towards the target audience, and opportunity of the subject matter presented in the website.	0-3
	Quantity	Volume of information.	0-3
	Rigor	Careful preparation and presentation of the information with regard to its foundation and veracity.	0-3
	Editing	Monitoring and correction of materials and contents for proper presentation.	0-3
	Updating	Update frequency of the resource.	0-3
Ergonomics	Ease	Measures the general ease of use of the resource and tools, and the ease of access to content, etc.	0-3
	Flexibility	Capacity offered to the user by the recourse to perform the same action in different ways.	0-3
	Multimedia_resources	Ease of use and operation of multimedia resources.	0-3
	Speed	Appropriate loading speed of content, multimedia resources, results of actions, etc.	0-3
Processes	Display_of_status	Clear and precise display of the status of the process that is taking place in the website.	0-3
	Conventions	Information about the status through common language and familiar conventions for typical users of the website.	0-3
Errors	Correction_of_errors	Possibility to undo the last action.	0-1
	Terms_and_Policies	Easily accessible information about the policies and terms of service from the point of view of the obligations and rights of the person in charge of the website and the user.	0-3
Interactivity	Contact_information	Inclusion of a channel for users to get in touch with the people responsible for the website and provision of quick and personalized responses.	0-3
	Customized_access	Possibility of customized access and capacity of the resource to adapt to the preferences the user indicated during his/her registration and to the preferences recorded in previous visits.	0-2
	Customized_newsletter	Possibility given to users to receive an online-customized newsletter from the website.	0-2
	Specific_applications	Applications and services characteristic of the model 2.0 and relevant to the type of website under analysis: search engine, contact RSS mashins etc.	0-3
	Blog_and_social_networks	Presence of links to the brand's own blog and major social networks.	0-3
		Maximum Score Usability	51
		Maximum Avg. Score Usability	2.68
		Maximum Total Score	86
			00
		Maximum Total Avg. Score	2.53