Article

An Empirical Study on Website Interactivity Impact among a Student Group, Beneficent for Companies, and Other Users

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Abstract: The connection with customers is a key task of companies, which can be achieved through diverse communication channels, among which one profitable way includes interactive websites. This paper first presents a synthetic review of previous studies on the topic of websites' interactivity. So far, we observe interactivity through individual models of interactivity. In this paper, four modelling variables are used, which make this paper more complex in the understanding of interactivity. Further, a new research development is exposed, with emphasis on experiment structuring, modelling variables configuration, results achievement, and data analysis and interpretation. It has been ascertained that the model based on four variables creates a broader research framework, enabling an effective analysis of their overall correlations, as well of correlations between each of its components. The applicative part of the research was unrolled with effective participation of a group of 350 students, who were homogeneous in their profiles and activities. Based on the results of an initial test, 240 students were selected and participated in the main test, who all had a particular interest in searching for a job, practice, or training course on the Internet. The research reveals a higher positive impact of interactive websites vs. non-interactive websites, and compares computer use to mobile devices. It also reveals how user perception and behaviour can be positively impacted by making website searches easier, and allowing users to comment on advertisements, share the content on social media, use e-mail marketing, etc.

Keywords: interactivity; website interaction; digitalization; modelling variable; data analysis; user perception; user behaviour; customer benefit; company benefit

1. Introduction

This study uses four modelling variables to measure perceived interactivity in order to correctly identify the results. As an outcome, websites should contain interactive features such as an online chat room, a drop-down search menu, and the option to apply for jobs, practices, or training courses online via an online map or an email hotlink. Interactive elements such as tags, social media sharing—Facebook, Twitter, LinkedIn, Google+, Pinterest, Reddit, etc.—and a connection to other digital marketing should be implemented. The research for this study clearly indicates the value of utilizing the site's interactive aspects, whether the user is seeking a job, taking training courses, or practicing skills.

Digitalization and website interactivity are both very important features of innovation that bring competitive advantages into a circular economy [1–4].

The digital economy brings new devices and modalities of online marketing, so that each company must face the challenge of open communication with their consumers [5]. The innovative product implies a marketing strategy for reaching people and turning them into customers of the product [6]. Companies can achieve sustainable financial success within complex business networks, based on broad cooperation and high performance [7]. The configuration of new products, which requires specific knowledge database systems [8], a high volume of data transfer between web-based applications, and the consideration of user's continuous mobility [9], demands the implementation of web technologies with a high level of interactivity.

Human resources are key pillars of the implementation of circular economy principles, mainly due to their creativity, their capacity to acquire transversal skills to be used in innovative activities and projects, and their ability to collaborate and share good practices within their community. Websites' interactivity, which is beneficial for students and other users in their search, e.g., for a job, is a modality in which to invest human resources potential. Searching online for a job has many advantages for students and companies, such as less time and money wasted, international visibility for companies, and a wider offer for students; this will raise standards for both sides (students and companies), offer ease of information management as the site is collecting the data in databases, reduce the ecological footprint (e.g.,-no driving and no printing), create an open market for demand and supply, etc.

Since the Internet has shattered the boundaries of location and time, educational institutions must contend with fierce competition. Students have to contend with national and international accreditation in their quest to enrol and participate. The post-COVID-19 context also introduces new accrediting criteria, such as digitalization and hybridization, entrepreneurship, social inclusion, green and circular economy, etc. The difficult accreditation procedure that will ensure the quality of teaching, learning, practicing, and business communication on a global scale can be facilitated by a blockchain [10,11].

2. Theoretical Overview

Digital marketing tools are used for managing and representing the identity of companies, for communication between people, and for achieving the company's visibility on the web. It is essential to be aware of the results expected to be achieved on the web and, on this basis, select the tools that should be used. Each digital marketing tool has its advantages and disadvantages, depending on the type of the company's business [12]. Many authors have investigated digital marketing, and in their research, they have considered digital marketing tools. They have used a variety of the same classifications, and yet, they all agree that one of the essential tools is the actual website [13–15]. Ryan puts a website in the centre of the digital world as the essential element in the entire digital marketing strategy [14].

Not paying attention to the user when creating a website has been considered a colossal oversight [16]; i.e., not creating websites for the users, but rather for the people developing them. This leads to paying more attention to technology than to users, which calls into question the success of using the website [17]. As is evident from the previous classifications, there are several essential elements of digital marketing. However, it is indisputable that any online marketing strategy is based on the web presence [17]. The significance of websites for the digital marketing strategy is highlighted with the statement "you are your website", as was mentioned by Charlesworth [17].

Authors Wolk and Theysohn [18] conclude that, out of the 16 factors, only quality, interactivity, accessibility, and relevance significantly and positively affect the number of website visitors. Credibility, interactivity, personalization, and navigation significantly increase the number of page views per visitor. The results highlight the importance of the website's characteristics for potential customers when it comes to the decision of how long to stay on a website.

For website information aiming to be more responsive to consumer needs, interactivity must be used as the basis for the consumer–vendor dialogue. However, little attention has

been given to the potential for using interactivity to improve online information services as a basis for consumer relationships. We must keep in mind that website interactivity offers to consumers information search activity for anticipated purchases [19].

The concept of interactivity has been researched by numerous studies. Depending on the angle of viewing this concept, authors focus on the process, features, perception, or a combination of these [20]. Steuer defines interactivity as a determinant of telepresence; the extent to which users can participate in modifying the form and content of the mediated environment in real-time [21]. Hence, the definition focuses on features. However, the author states that by influencing the mediated environment, we can influence the perception of presence. Rogers [22] defines interactivity as the extent to which participants in a communication process can change roles and have control over their joint discourse, while Johnson et al. [23] define interactivity as the extent to which a participant involved in a communication episode perceives communication as mutual, responsive, rapid, and characterised by the use of nonverbal information. In the study conducted by authors Chung and Zhao [24], it was determined that perceived interactivity affects the attitude and the memory of consumers towards websites and their contents. Song and Zinkhan [25] state that early works on interactivity emphasised the existence of interactive features and that recent studies have placed emphasis on the perception of interaction. For the purpose of this research, we are proposing a framework for an intermediary role of perceived interactivity in the effects of actual interactivity on the attitude towards websites, concurring with Wu [26].

A distinction should be made between actual and perceived interactivity [20,23,25–28]. Specifically, actual interactivity is structural and perceived interactivity is empirical; therefore, the terms objective and subjective interactivity are mentioned [28]. The actual one pertains to the integrated possibility of system interaction during an interaction process, while the perceived one pertains to the perception of interactivity of a communication process by the participants. Moreover, in this work, emphasis is placed on the research of perceived interactivity, i.e., the effects that the use of interactive features have on consumers. So far, many authors have analysed interactivity through the interactivity of websites [20,23,25,29–37]. The effects investigated by various authors in their works mainly refer to the attitude towards websites [20,25,27], while the attitude towards websites has been conceptualised by others [27,38–41].

Satisfaction is another outcome of interactivity. Satisfaction is associated with an active control that a user has over the content, which represents a desired psychological state [28]. The usability is relevant to regular ongoing use, to enable users to achieve their goals effectively, efficiently, and with satisfaction. Satisfaction includes the extent to which the user experience that results from actual use meets the user's needs and expectations. The anticipated use can influence satisfaction with actual use [42]. Satisfaction was measured based on research in the work of Fornell et al., which was adapted by authors Song and Zinkhan [25]. The overall website quality and loyalty measurements are based on instruments used by Song and Zinkhan [25]. Some authors, such as Wu [27], investigate the relationship between perceived interactivity and the attitudes towards websites formed by consumers. There is a group of authors who observe several effects, such as Song and Zinkhan [25], who in their work also investigate the attitude towards websites, as well as satisfaction, the overall website quality, loyalty intention, and repeated purchase intention. A number of authors have identified some of the above effects, but have not proven them empirically [30]. Interactivity, vividness, and involvement are significant factors influencing virtual experience and behaviour, and such involvement and flow enhance product value, which in turn impacts virtual behaviour [43].

The interactivity of the website has positive effects on the brand experience and brand choice. Two-way communication allows users to see that the brand satisfies their needs as users, which leads to the unforgettable experience of site usage [35]. A large number of authors connect site design and ease of use with the creation of a positive experience [44,45]. An examination of the possible impacts on customer experience through site layout, ease of

use, customisation, interactivity, engagement, and enjoyment [44] determines that all the variables have a significant impact on the online customer experience, namely information quality and website credibility. In their research, the authors determine that the variables of information quality and website credibility influence the customer experience during the search for information on B2B websites. Customer experience is also linked to the fact that a successful information search is positively related to satisfaction with the experience. Website credibility and information quality cues positively influence search success. Hence, a lack of online customer support is related to dissatisfaction with their experience [46].

Authors Yoon and Youn went a step further in analysing the impact of perceived website interactivity on purchase intent, relying on the work of authors who researched user behaviour, predicted future behaviour, and determined the importance of the role of mediators, e.g., perceived utilitarian value and online trust. In the relationship between perceived website interactivity and the repurchase intention experience, active control and two-way communication appeared to be crucial aspects of interactivity in enhancing the strong brand experience and quality of the relationship with the brand [34].

On the other hand, the importance of website interactivity should be viewed differently if it refers to a new product or a limited choice; a high degree of interactivity is essential if the user requires a high degree of control when using the site. Interactivity positively influenced participants' attitudes (i.e., the main effects of interactivity), indicating that consumers may not be overwhelmed by high levels of information control [27]. The interactivity of the website increases the perception of users, both in terms of the usefulness of the site and in terms of the ease of use of retail sites. Interactive user experiences on retail sites increase their perception of the website and thus their intention to purchase. If sellers want to encourage users to explore their site, they must redesign it to include interactive site features [37]. It can be concluded that increased perceived task difficulty decreased the consumer's perception of how easy the website was to use, but also increased enjoyment [47].

Although there are a large number of papers on the topic of mobile marketing, a unique definition has not yet been set [48,49]. Researchers define mobile marketing as the use of wireless media to convert time data and exact consumer locations into personal data that promote products, services, and ideas [49]. Mobile marketing is the most personal form of web marketing [50,51]. With the help of mobile phones, we can know when the consumer is calling, whom they are writing to, and how they spend their free time; we know this because smartphones have access to the consumer's phonebook and calendar. With this technology, you can see which websites the consumer is visiting and which applications they are installing on their phone. Mobile phones know what kind of entertainment their owner likes and represent the most targeted form of web marketing. Mobile phones and the ways they are used say a lot about the demographic and psychographic characteristics of the owner. This allows people a new way of meeting their communication needs, standing out from their peers, and constantly remaining informed. It should not be forgotten that the advent of mobile phones did not create this need; it has always existed [52].

The critical characteristics of mobile marketing that enable the change of the entire marketing practice and offer unlimited business opportunities are ubiquity, personalisation, two-way communication, and localisation [53]. The advantages of digital marketing, such as speed, flexibility, interactivity, and responsibility, require an entirely new set of marketing strategies and skills that must be used [54]. If a marketer wants his message to be immediately visible to consumers, mobile marketing is the best way to achieve this. Authors Michael and Salter state that the advantages of mobile marketing over traditional media are reflected in the following: response rate is greater than 10%, it is the cheapest form of communication with end-users, and it requires minimal effort to begin the communication [52].

Currently, when the largest number of people have mobile phones, it is easy to find the user who is best suited at that moment for marketing [55]. This is because mobile phone numbers are assigned to specific people instead of specific locations, and they are rarely

used by multiple people. Although mobile marketing is a potent form of marketing, it is not adequate for every company. Like any other marketing campaign, mobile marketing must be carefully designed and developed before it can be approached [51]. Unfortunately, mobile marketing is often implemented ad hoc, and the link between a company's marketing communication strategy and an individual mobile marketing campaign is very weak or even non-existent [56].

In order to summarize, we can conclude that digital marketing solutions help to maintain a company's brand identity as well as its web visibility. Understanding the web's intended goals is critical. Each digital marketing tool has pros and cons [12]; this is reflected by the work of many authors [13–15]. They all feel a website is essential. Ryan says digital marketing begins with a website.

Not considering the user is a major omission in website design, and, as result, the site is less usable [17]. The benefits of digital marketing are numerous. Greater interactivity means more responsive customer–vendor relationships. Interactivity can increase online information and consumer connections. Customers can research purchases online [19]. Affected by the mediated environment, we can influence presence. [23] Interactivity is mutual, responsive, fast, and utilizes nonverbal cues. Perceived interaction affects customers' impressions of websites and their content. There is an objective–subjective interaction. Interactivity perception differs between participants and systems [20,23,25,29,37].

Users love a site more when the brand meets their needs [35]. Site design is linked to user experience [44,45]. These include site design, usability, customization, interactivity, engagement, and enjoyment [44]. They claim that content quality and website credibility affect customer experience on B2B sites. Searching for useful information is also enjoyable. These cues improve search results [46]. Active control and two-way communication are important for boosting brand experience and relationships [34].

However, active engagement is required if the user wants complete control over the site. The consumer may not be overwhelmed by information control [27]. Interactivity improves the website's utility and usability perception. Interactive retail sites enhance purchase intent. It is important to make your site dynamic to attract customers [37]. It was found that task difficulty increased satisfaction but hindered ease of use [47].

Mobile marketing is the most focused. People's phone habits reveal a lot about them. Moreover, phones keep users informed. This necessity precedes cell phones [52]. Mobile marketing requires one-to-one communication and localization [53]. Customers respond quickly to mobile marketing. Mobile marketing outperforms traditional media in terms of response rate, cost, and initial effort [52].

The categories of interactivity and their impact on the user is shown in Table 1.

Table 1. Categories of interactivity and their impact on the user.

Category	Influence
Quality, interactivity, accessibility, and relevance	Number of website visitors [18]
Credibility, interactivity, personalization, and navigation	Number of page views per visitor [18]
Process, features, perception of visit	Perception of presence on site [20,21]
Perceived interactivity	Attitude towards websites [24]
Active control	Satisfaction [28]
Satisfaction, the overall website quality, loyalty intention	Purchase intention [25]
Interactivity, vividness, and involvement	Virtual experience and behaviour [43]
Interactivity of the website	Brand experience and brand choice
Two-way communication	Experience of site usage [35]
Site design and ease of use	Positive experience [44,45]
Ease of use, customisation, interactivity, engagement, and enjoyment	Online customer experience [44]

Table 1. *Cont.*

Category	Influence
Website credibility and information quality	Search success [46]
Active control and two-way communication	Brand experience [34]
Interactivity	Control of web search [27]
Mobile marketing	Instant message visibility [52]

3. Research Design

3.1. General Goal, Objectives, and Methodology Directions

The above theoretical overview has aided us in revealing an important general research goal concerning the websites' interactivity, as part of the development of a more complex model and its corresponding analysis.

Thus, the present research objective is a multi-criteria process and system regarding the development of websites' interactivity features, in correlation with the benefits among students and other users.

As a major consequence, the main objective of this research is to perform a multi-criteria study on websites' interactivity.

In order to achieve its objective, the research has been structured and executed with regard to the following methodological directions: configuration of research instruments through a modelling variables set; testing the activity design; and testing the accomplished results through comparative analysis.

A website map, e-mail hotlink, online chat room, dropdown search menu, website search, tags, and the ability to remark on adverts are all features of an interactive website. An interactive website that allows users to share material via social media, such as Facebook, Twitter, LinkedIn, Google+, Pinterest, and Reddit, is customized for mobile devices and supports e-mail marketing. An interactive website also integrates other digital communication tools, allowing consumers to read website material on Facebook and sign up for a mailing list to be informed of website updates. Users who sign up for a mailing list automatically receive an e-mail verifying their registration and a link to activate their subscription. Activating registration takes customers to a website page where they can browse recommended ads, post comments, or contact website support. If we consider the advantages of interactive features in the websites, it is expected that better results can be achieved by interactive websites, which will thus achieve a greater degree of connection with users. If we apply this to the search for a job, practice, or training course, the following hypothesis can be set:

H1. *The interactive features of websites accessed by candidates looking for a job, internship, or training course led to an extension of actions taken by users.*

3.2. Research Instruments

For the present research, four modelling variables are introduced, i.e., UserExperience, LIU Model, WU Model, and UserBackground, so that their Modelling Variables Set is:

$$\text{Modelling Variables Set} = \{\text{UserExperience, LIU Model, WU Model, UserBackground}\} \tag{1}$$

The variables UserExperience, LIU Model, WU Model, and UserBackground are used as the main research instruments and are structured as follows.

The UserExperience is a formative variable, with the aim to illustrate the user's working features, and is defined by 10 items, each with a certain significance, i.e., Aware—while I was on website I was aware of where I was the whole time; Choose—I could freely choose what to watch on the website; Content—I had control over the content I wanted to see; Control—I felt like I had control over the website; Routine—my actions were decided by my

progress; Know—while on the website, I always knew where I was going; Navigation—I had control over navigation on the website; URL—I was satisfied with the URL; Wish—I always had the possibility to go where I wanted; Time—I had total control over the time tempo. It can be written that:

$$\text{UserExperience} = \{\text{Aware, Choose, Content, Control, Routine, Know, Navigation, URL, Wish, Time}\} \tag{2}$$

The LIU Model is defined, in this paper, in connection with a series of elements presented by the author Liu Y.P. [28,30]. Therefore, the LIU Model is constituted, as a reflective variable, by three parts (subtests) of interactivity, each with certain significance, i.e., Active control, Liu_Con, based on 4 items—expressing the feeling of the users that they can move freely on the site, with the opportunity to influence their experience; Two-way communication, Liu_Com, based on 6 items—expressing the feeling of the respondent that it is easy to establish communication with a company representative; Synchronicity, Liu_Sin, based on 5 items—referring to the speed of receiving feedback from the site. It can be written that:

$$\text{LIU Model} = \{\text{Liu\_Com, Liu\_Con, Liu\_Sin}\} \tag{3}$$

The WU Model is defined, in this paper, in connection with a series of elements presented by the author Wu G. [26,27,32]. Therefore, the WU Model is constituted, as a reflective variable, by three parts (subtests) of perceived interactivity, each with certain significance, i.e., Perceived control, Wu_Con, based on 3 items—expressing the feeling that the users can navigate freely on the site, with total control during the visit; Perceived responsiveness, Wu_Res, based on 3 items—expressing the feeling of the users that they can communicate directly with the company and other interested customers, to gain fast answers to specific questions; Perceived personalisation, Wu_Per, based on 3 items—expressing the feeling of the users on the sensitivity of the website to their needs, through good communication with the company. It can be written that:

$$\text{WU Model} = \{\text{Wu\_Con, Wu\_Res, Wu\_Per}\} \tag{4}$$

The UserBackground is a reflective variable, with the aim to illustrate previous working data of the user, and is defined by 5 items, each with a certain significance, i.e., SM—social media profile; TMI—time spent using mobiles on the Internet; TM—time spent using mobile device; NetSM—how much time from the total time spent on the Internet was spent on social media; NetT—time spent using the Internet. It can be written that:

$$\text{UserBackground} = \{\text{SM, TMI, TM, NetSM, NetT}\} \tag{5}$$

Observation of the relationship between the above variables leads to set the following hypotheses:

H2. *The LIU Model has a positive influence on UserExperience when navigating websites for job, practice, or training course opportunities.*

H3. *The WU Model has a positive influence on UserExperience when navigating websites for job, practice, or training course opportunities.*

H4. *UserBackground has a positive influence on the LIU Model.*

H5. *UserBackground has a positive influence on the WU Model.*

Further, the implemented research timetable reflects that the working stages through the envisaged actions are effectively achieved; i.e., the necessary sequence of initial and main tests, presentation and analysis of relevant results, etc., is achieved. This will be outlined below.

3.3. Tests

We conducted an initial test with 350 students from an Advanced School of Electrical Engineering, during the first year of their study, in relation with their lectures on Digital Multimedia. It was hoped that this test would help to identify a number of students who shared the same or similar interests. An initial questionnaire was given to each participant student. A total of 240 students were identified with an interest in searching for a job, practice, or training course on the Internet, based on their replies.

In the main test, there were 240 participant students among four categories, i.e., 60 participants who used the interactive website via the computer, 60 participants who used the interactive website via a mobile device, 60 participants who used the non-interactive website via a computer, and 60 participants who used the non-interactive website via a mobile device. These students were placed into 12 groups, each group including a random selection of 20 students, i.e., 5 students from each of the above 4 categories. During the test, the students received and completed the main questionnaires.

To compare the differences between respondents who used the interactive website and the non-interactive website, via computer or mobile device, a two-way ANOVA was utilized. The statistical processing and analysis were performed in SPSS version 20. Incorrectly completed survey questionnaires were excluded from further processing, reducing the number of respondents from 240 to 197. This changed the number of respondents in associated categories; hence, a uniformity analysis based on the number of respondents was performed. There were 100 respondents who used the interactive website, and 97 respondents who used the non-interactive websites; although the number of responders is not exactly the same in both groups, the difference is not statistically significant ($p = 0.831$). Moreover, there were 99 respondents who used a computer, and 98 respondents who used a mobile device; although the number of respondents is not exactly the same in both groups, the difference is not statistically significant ($p = 0.943$). As the collected data reveal that the groups have the same number of responses, the results can be processed further.

4. Results

4.1. Results on the Applications for Job, Practice, or Training Courses

The considered applications for job, practice, or training courses are those registered by some of the students during the main test. Results concerning the applications for job, practice, or training courses, i.e., results about the registered respondents and applications relating to the function of the website type—interactive or non-interactive, via computer or mobile device—are presented in Table 2.

Table 2. Results on the applications for job/practice/training course.

Respondents	Website Type	Computer Users		Mobile Devices Users	
		Number	Ratio I/NI	Number	Ratio I/NI
Registered respondents	I	38	3.8	39	2.3
	NI	10		17	
Applications for practice/course/training course	I	87	6.69	94	2.85
	NI	13		33	
Average number of applications per respondent	I	2.29	1.76	2.4	1.24
	NI	1.3		1.94	

I—interactive, NI—non-interactive.

From the considered data, we can see that the number of registered candidates is 3.8 times higher for the interactive website than for the non-interactive website on a computer; the similar number is far lower, 2.3, for users of mobile devices. The number of applications of the respondents is 6.69 times higher for interactive website than for non-

interactive website users on the computer, while for mobile device users, this number is far lower, i.e., 2.85. Moreover, the average number of applications per respondent is 1.76 times higher for users of the interactive website than for the users of the non-interactive website; it is only 1.24 times higher for users of a computer than for users of mobile devices.

An interactive website also offers its users the possibility to sign up for a mailing list in order to receive all the news published on the website at the registered e-mail address. Of the total number of respondents who used the interactive website (100 participants), 15 respondents started the mailing list sign up process. Of the 15 respondents who started the mailing list sign up process, 7 respondents confirmed the registration via the link obtained by e-mail, while 8 respondents did not confirm the registration, and their e-mail addresses are, therefore, not included in the database of registered candidates for receiving additional information regarding the application for a job, practice, or training course.

4.2. Results on the Interactivity Features Associated to Models, Subtests, and Questions

The results concerning the interactivity features revealed by participant students, in the main test, based on the LIU Model and WU Model, working on interactive website and non-interactive website, via computer or mobile device, show differences associated to working conditions, as follows.

It can be noticed that the part of the following data/tables that refers to the respondents who used a computer is taken from the papers [57,58]. The second part of the presented data/tables is extended to the respondents who used mobile devices during the research.

Therefore, the results on the model level, based on the LIU Model and WU Model, both for interactive website and non-interactive website, via computer or mobile devices, show statistically significant differences ($p < 0.05$), and a higher score was achieved for interactive site respondents (Table 3).

Table 3. Results on the model level.

Source for Computer Users [57,58]	Website Type	Computer Users				Website Type	Mobile Devices Users			
Model		**M**	**SD**	***t***	***p***		**M**	**SD**	***t***	***p***
LIU Model	I	5.0967	0.53621	8.039	0.000	I	5.1633	0.63887	4.406	0.000
	NI	4.2639	0.49182			NI	4.5823	0.66608		
WU Model	I	4.9564	0.64677	7.038	0.000	I	5.0181	0.54213	3.417	0.001
	NI	3.9699	0.74685			NI	4.4921	0.93128		

M—Arithmetic mean, SD—Standard deviation, *t*—*t*-test, *p*—statistical significance (exists if $p < 0.05$); I—interactive, NI—non-interactive.

When the results are analysed in more depth, comparing the answers of the interactive site users and of the non-interactive site users, via computer or mobile device, the differences can be seen on the subtest level, as well as on the question level.

Therefore, on the subtest level, based on the LIU Model (Table 4), the results show statistically significant differences in all subtests for participants who used the sites via a computer, because in all the subtests, a higher score was achieved by the users of the interactive site. There were statistically significant differences in the two-way communication subtest (a higher score was achieved by the users of the interactive site, with M being about 4.62, as well a higher score being achieved in the synchronicity subtest) with a higher score achieved by the users of the interactive site via mobile devices, and an M of about 5.68.

Moreover, on the subtest level, based on the WU Model (Table 5), the results show statistically significant differences in all subtests for the participants who used the sites via a computer, and it can also be noticed that in all statistically significant differences, a higher score was achieved by the interactive site users. For mobile device users, the results show significant differences to the perceived responsiveness subtest (a higher score was achieved by the users of the interactive site, with the M being about 4.93, as well as a higher score

being achieved in the perceived personalisation subtest) with a higher score achieved in the users of the interactive site, and the M being about 4.44.

Table 4. Results on the subtest level/LIU Model.

Source for Computer Users [57,58]	Website Type	Computer Users				Website Type	Mobile Devices Users			
Subtest		M	SD	t	p		M	SD	t	p
Active control	I	5.4510	0.76652	3.086	0.003	I	5.3316	1.08540	1.184	0.239
	NI	4.8542	1.13320			NI	5.1071	0.76376		
Two-way communication	I	4.6176	0.97256	6.514	0.000	I	4.6224	0.75751	4.921	0.000
	NI	3.2812	1.06866			NI	3.6633	1.13473		
Synchronicity	I	5.3882	0.87216	2.286	0.024	I	5.6776	0.98473	2.223	0.029
	NI	4.9708	0.94440			NI	5.2653	0.84596		

M—Arithmetic mean, SD—Standard deviation, *t*—*t*-test, *p*—statistical significance (exists if *p* < 0.05); I—interactive, NI—non-interactive.

Table 5. Results on the subtest level/WU Model.

Source for Computer Users [57,58]	Website Type	Computer Users				Website Type	Mobile Devices Users			
Subtest		M	SD	t	p		M	SD	t	p
Perceived Control	I	6.1569	0.73137	3.401	0.001	I	6.2109	0.92219	1.920	0.058
	NI	5.4306	1.32615			NI	5.8095	1.13652		
Perceived Responsiveness	I	4.5000	1.03441	3.815	0.000	I	4.9286	0.97361	2.267	0.026
	NI	3.6875	1.08483			NI	4.4184	1.23890		
Perceived Personalisation	I	4.3268	1.34411	4.894	0.000	I	4.4422	1.08309	2.393	0.019
	NI	3.0278	1.29343			NI	3.7959	1.54982		

M—Arithmetic mean, SD—Standard deviation, *t*—*t*-test, *p*—statistical significance (exists if *p* < 0.05); I—interactive, NI—non-interactive.

On the question level, based on the LIU Model (Table 6), the results are as follows.

Table 6. Results on the question level/LIU Model.

Source for Computer Users [57,58]	Website Type	Computer Users				Website Type	Mobile Devices Users			
Subtests		M	SD	t	p		M	SD	t	p
Active control.										
I felt that I had a lot of control over my visiting experiences on this website.	I	5.0980	1.31537	2.259	0.026	I	5.3673	1.46762	0.920	0.360
	NI	4.4167	1.67374			NI	5.0816	1.60516		
While I was on the website, I could choose freely what I wanted to see.	I	6.4314	1.00509	2.010	0.047	I	6.4694	1.30866	0.718	0.474
	NI	5.8750	1.68378			NI	6.2653	1.49688		
While surfing the website, my actions decided the kind of experiences I got.	I	5.4706	1.33196	2.747	0.007	I	5.5306	1.27642	2.189	0.031
	NI	4.7083	1.42856			NI	5.0000	1.11803		
While surfing the website, I had absolutely no control over what I could do on the site.	I	4.8039	2.04958	0.984	0.328	I	3.9592	2.29999	−0.276	0.783
	NI	4.4167	1.85465			NI	4.0816	2.09002		
Two-way communication.										
This website facilitates two-way communication between the visitors and the site.	I	4.7451	1.33930	2.930	0.004	I	5.0816	1.22196	4.062	0.000
	NI	3.7500	1.99467			NI	3.7959	1.84819		
The website makes me feel it wants to listen to its visitors.	I	4.2941	1.93178	5.589	0.000	I	4.2245	1.91774	2.079	0.040
	NI	2.3333	1.52054			NI	3.3673	2.15729		

Table 6. *Cont.*

Source for Computer Users [57,58]	Website Type	Computer Users				Website Type	Mobile Devices Users			
Subtests		M	SD	t	p		M	SD	t	p
The site created the feeling that it wanted to listen to its users.	I	4.9412	1.46167	3.870	0.000	I	5.1429	1.45774	2.754	0.007
	NI	3.7708	1.54699			NI	4.1837	1.95441		
The website gives visitors the opportunity to talk back.	I	5.1961	1.09580	6.048	0.000	I	5.5102	1.10156	3.005	0.003
	NI	3.5208	1.62415			NI	4.6531	1.66522		
It is difficult to offer feedback to the website.	I	4.3725	1.29554	3.706	0.000	I	4.4286	1.80278	3.575	0.001
	NI	3.3333	1.49230			NI	3.2041	1.58087		
The website does not at all encourage visitors to talk back.	I	4.1569	1.86947	3.167	0.002	I	3.3469	1.78595	1.495	0.138
	NI	2.9792	1.82756			NI	2.7755	1.99233		
Synchronicity.										
The website processed my input very quickly.	I	5.1569	1.15538	1.901	0.060	I	5.4694	1.45920	1.771	0.080
	NI	4.6667	1.40415			NI	4.9388	1.50566		
Getting information from the website is very fast.	I	5.6667	1.19443	1.257	0.212	I	5.7755	1.22925	−0.428	0.670
	NI	5.3542	1.27979			NI	5.8776	1.12976		
I was able to obtain the information I wanted without any delay.	I	5.5490	1.13690	1.860	0.066	I	6.0816	1.01728	2.491	0.014
	NI	5.0833	1.35007			NI	5.4286	1.52753		
When I clicked on the links, I felt I was getting instantaneous information.	I	5.0980	1.66439	1.011	0.315	I	5.6735	1.16168	2.038	0.044
	NI	4.7917	1.32019			NI	5.1633	1.31255		
The website was very slow in responding to my requests.	I	5.4706	1.75901	1.384	0.170	I	5.3878	1.59186	1.372	0.173
	NI	4.9583	1.92363			NI	4.9184	1.78928		

M—Arithmetic mean, SD—Standard deviation, t—t-test, p—statistical significance (exists if $p < 0.05$); I—interactive, NI—non-interactive.

In the part of the questions related to the active control subtest, statistically significant differences occurred for the participants who used the computer at the first three questions, with M values of 5.0980, 6.4314, and 5.4706, respectively; comparatively, for the respondents who used mobile devices, a statistically significant difference occurred at the third question, with an M value of 5.5306, and a higher score being achieved by the users of the interactive site where statistically significant differences appear.

In the part of the questions related to the two-way communication subtest, statistically significant differences occur for the participants who used the computer at all six questions, with M values of 4.7451, 4.2941, . . . , 4.1569, respectively, as well as for respondents who used mobile devices, where statistically significant differences occurred at all questions except for the last one, with M values of 5.0816, 4.2245, 5.1429, 5.5102, and 4.4286, respectively, and a higher score being achieved by the users of the interactive site.

In the part of the questions related to the synchronicity subtest, there was no statistically significant difference in any question for the participants who used a computer; there were statistically significant differences for participants who used mobile devices at the third and fourth questions, with M values of 6.0816 and 5.6735, respectively, and a higher score being achieved by the users of the interactive site.

On the question level, based on the WU Model (Table 7), the results are as follows.

In the part of the questions related to the perceived control subtest, statistically significant differences occurred for the participants who used the computer at the first question, with an M value of 6.2745, and at the second question, with an M value of 6.2745. For participants who used mobile devices, a statistically significant difference occurred at the third question, with an M value of 6.4286; a higher score was achieved by the users of the interactive site.

In the part of the questions related to the perceived responsiveness subtest, statistically significant differences occurred for the participants who used the computer at all three questions, with M values of 4.2941, 4.3333, and 5.1961, respectively. Among participants who used mobile devices, statistically significant differences occurred at the first question, with

an M value of 4.2245, and at the third question, with an M value of 5.5102; a higher score was achieved by the users of the interactive site.

Table 7. Results on the question level/WU Model.

Source for Computer Users [57,58]	Website Type	Computer Users				Website Type	Mobile Devices Users			
Subtests		M	SD	t	p		M	SD	t	p
Perceived control.										
I was in control of my navigation through this website.	I	6.2745	1.18454	2.815	0.006	I	6.0204	1.37674	1.442	0.152
	NI	5.3958	1.86501			NI	5.5306	1.93759		
I had some control over the content of this website that I wanted to see.	I	6.2745	1.05978	3.151	0.002	I	6.1837	1.25289	0.600	0.550
	NI	5.3750	1.72127			NI	6.0204	1.43599		
I was in total control over the pace of my visit to this website.	I	5.9216	1.24649	1.563	0.121	I	6.4286	.97895	2.315	0.023
	NI	5.5208	1.30449			NI	5.8776	1.34834		
Perceived responsiveness.										
I could communicate with the company directly for further questions about the company or its products if I wanted to.	I	4.2941	1.93178	5.589	0.000	I	4.2245	1.91774	2.079	0.040
	NI	2.3333	1.52054			NI	3.3673	2.15729		
I could communicate in real-time with other customers who shared my interest in this website.	I	4.3333	1.87261	4.227	0.000	I	4.0204	1.67692	0.781	0.436
	NI	2.7708	1.80118			NI	3.7143	2.16987		
The site had the ability to respond to my specific questions quickly and efficiently.	I	5.1961	1.09580	6.048	0.000	I	5.5102	1.10156	3.005	0.003
	NI	3.5208	1.62415			NI	4.6531	1.66522		
Perceived personalisation.										
I perceived the website to be sensitive to my needs for product information.	I	3.8039	1.46996	−0.168	0.867	I	4.3469	1.47974	0.551	0.583
	NI	3.8542	1.50162			NI	4.1837	1.45306		
I felt I had just had a personal conversation with a sociable, knowledgeable, and warm representative from the company.	I	4.3529	1.58523	1.147	0.254	I	5.0816	1.16970	2.918	0.004
	NI	3.9792	1.65657			NI	4.3061	1.44632		
The website was like talking back to me while I clicked through the website.	I	5.0980	1.66439	1.011	0.315	I	5.6735	1.16168	2.038	0.044
	NI	4.7917	1.32019			NI	5.1633	1.31255		

M—Arithmetic mean, SD—Standard deviation, t—*t*-test, *p*—statistical significance (exists if $p < 0.05$); I—interactive, NI—non-interactive.

In the part of the questions related to the perceived personalization subtest, the participants who used a computer did not reveal a statistically significant difference to any question. The participants who used mobile devices denoted statistically significant differences at the second question, with an M value of 5.0816, and at the third question, with an M value of 5.6735; a higher score was achieved by the users of the interactive site.

4.3. Remarks

The conducted research determines whether there is an impact of interactive features on the consumers, i.e., website users, as the primary means of digital marketing [25,27,30,59]. Further results support the fact that the interactive features of the site increase user activity on the site itself [18,20,34,47].

The differences in the experience of the users of the interactive and non-interactive sites looking for job, internship, or training courses are evident. The number of registered respondents, the number of applications for a job, practise, or training course, and the average number of applications per respondent are higher among users of the interactive site compared to users of the non-interactive site, both for participants who used a computer and participants who used a mobile device. This difference is insignificant for the participants who used mobile devices, but it certainly exists.

The results are in favour of the fact that the users of the interactive site are primed for the final act, which is the goal of every website. In this way, the set hypothesis H1 (see Section 3.1) is proved, i.e., interactive features of websites accessed by candidates looking for a job, internship, or training course led to an extension of actions taken by users. Therefore, this hypothesis can be extrapolated over the entire population.

4.4. Econometric Analysis

The structure and some characteristics of the modelling variables are as presented in rel. (1)–(5) and Table 8.

Table 8. Characteristics of the modelling variables (see rel. 1–5).

	Variable Name	Variable Type	Number of Items
Modelling Variables Set	UserExperience	Formative	10
	LIU Model	Reflective	4
	WU Model	Reflective	4
	UserBackground	Reflective	5

For a broader characterization of the correlations between the modelling variables, an econometric analysis using SmartPLS 3.0 has been applied to the actual research data.

A series of elements revealed by the econometric analysis, as presented in Figure 1, are further underlined, based on some specific key indicators.
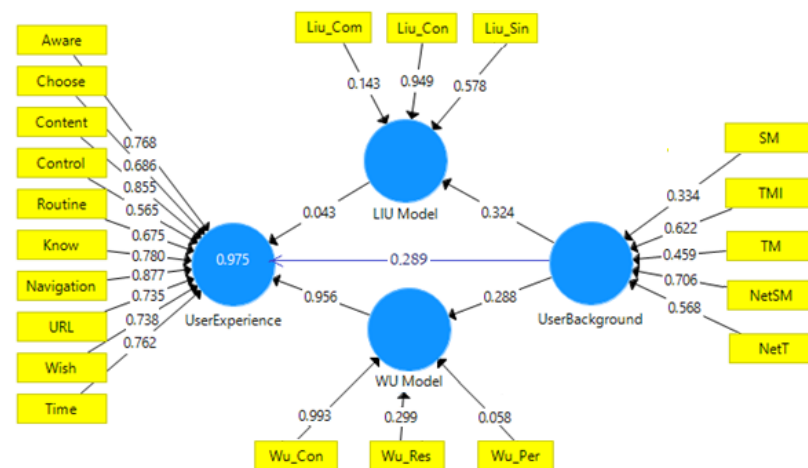
Figure 1. Elements of the econometric analysis applied to actual research data.

Within the variable UserExperience, the most influent component items (with an outer weight value higher than 0.75) are Navigation, Content, Know, Aware, and Time. Within the variables of the LIU Model, WU Model, and UserBackground, the most influent components (with outer loading value higher than 0.9) are the items Liu_Con and Wu_Con, respectively; the influent components (with outer loading value of 0.5–0.7) are the items Liu_Sin, TMI, NetSM, and NetT, respectively. The above emphasized correlations express, e.g., the users' capacity to work on websites freely, over a long time period, based on the knowledge gained from the website.

With regard to the hypotheses H2, H3, H4, and H5 (see Section 3.2), based on the path coefficient (outer loading) values (Figure 1), the following are found:

- The hypothesis H2, i.e., the LIU Model has a positive influence on UserExperience when navigating websites for job, practice, or training course opportunities, is not proved, given being that the path coefficient between the LIU Model and UserExperience has a very low value (0.045).
- The hypothesis H3, i.e., the WU Model has a positive influence on UserExperience when navigating websites for job, practice, or training course opportunities, is proved, given being that the path coefficient between the WU Model and UserExperience has a very high value (0.954); this hypothesis can be extrapolated over the entire population.
- The hypotheses H4 and H5, i.e., H4. UserBackground has a positive influence on the LIU Model, and H5. UserBackground has a positive influence on the WU Model, are

not proved, given being that the path coefficient between UserBackground and LIU Model, as well as between UserBackground and WU Model, has a very low value (0.331 and 0.286, respectively).

4.4.1. Correlation Coefficients of Modelling Variables within Linear Regression

Processed data using IBM SPSS and SmartPLS 3.0 allowed to design a structural equation. The preliminary analysis on the linear regression model is correlation analysis. The results are presented in Table 9. This correlation analysis shows important correlations between the modelling variables, i.e.,: there was a very strong and positive correlation between User Experience and the WU Model (with a correlation coefficient value of 0.987); furthermore, there were strong positive correlations between User Experience and the LIU Model, and the LIU Model and the WU Model (with correlation coefficient value of 0.721 and 0.709, respectively).

Table 9. Correlation coefficients of modelling variables within linear regression.

Variable	User Experience	LIU Model	WU Model	User Background
User Experience	1	0.721	0.987	0.291
LIU Model	0.721	1	0.709	0.324
WU Model	0.987	0.709	1	0.288
User Background	0.291	0.324	0.288	1

4.4.2. Multicollinearity Statistics

The multicollinearity statistics, based on the outer variance inflation factor, VIF, as an analysis key indicator, show a medium collinearity between variable items defining UserExperience, and a low collinearity between variable items defining LIU Model, WU Model, and User Background, as presented in Table 10. This proves that the structure of each modelling variable is acceptable.

4.4.3. Chi-Square Test of Model Fit

The Chi-square test of model fit, applied to the present research data, shows that the Chi-square value of the estimated model is higher than the Chi-square value of the saturated model (Table 11), meaning that the general modelling (see rel. 1–5) is representative for the present research.

Table 10. Collinearity statistics.

Variable	Item	VIF Value	Variable	Item	VIF Value
UserExperience	Aware	3.292	LIU Model	Liu_Com	1.027
	Choose	2.923		Liu_Con	1.100
	Content	3.234		Liu_Sin	1.128
	Control	2.194	WU Model	Wu_Con	1.040
	Know	3.165		Wu_Per	1.194
	Navigation	3.667		Wu_Res	1.238
	Routine	2.613	UserBackground	SM	1.060
	Wish	2.757		TMI	1.162
	URL	2.390		TM	1.311
	Time	1.940		NetSM	1.150
				NetT	1.382

Table 11. Chi-square test of model fit.

Model	Saturated	Estimated
Chi-square value	393.519	497.551

5. Discussion

By using an interactive website in this research, it has been also established that users of the interactive website could be connected to the company in the future by subscribing to the mailing list. This way, users remain in contact with the company and can be acquainted with all the news in the company, which leads to the possibility of repurchasing and, in the case of this research, the possibility of returning to the site when re-searching for jobs, practices, or training courses. Of the total number of candidates who used the interactive website, 7 candidates (about 14%) completed the application process; their contacts were in the database, which is a significant percentage of potential users who will be in contact with the company. As this option is not possible for the other users, it can be seen that the loss of retention of potential users is significant.

In the presented data, for both computer and mobile device users, there is a statistically significant difference between respondents who used an interactive and non-interactive site; it is also noted that a higher score was achieved in respondents who used an interactive site.

There are statistically significant differences in the actual research dimensions (Table 12). Within all subtests where there are statistically significant differences, the participants of the interactive site have a higher score.

Table 12. Overview of statistically significant (+) dimensions associated to interactive websites.

Model	Subtest	Computer	Mobile Device
LIU Model	Active control	+	−
	Two-way communication	+	+
	Synchronicity	+	+
WU Model	Perceived control	+	−
	Perceived responsiveness	+	+
	Perceived personalisation	+	+

In the LIU model, the use of the interactive website leads to a higher degree of perceived interactivity for participants who used a computer on all dimensions of interactivity—active control, two-way communication, and synchronicity—while in respondents who used mobile devices, significant differences exist on two-way communication and synchronicity. The LIU Model did not have a positive influence on UserExperience when users navigated the website whilst searching for job, practice, or training course opportunities (the hypothesis H2 was rejected). The LIU model might be significative for our data, but this assumption cannot be extrapolated over the entire statistical population, because multicollinearity between variables was detected. Although active control, two-way communication, and synchronicity are important in online communication, it seems that other psychological factors have a greater importance in this regard. The WU Model seems more appropriate in appreciating UserExperience in an online environment.

Navigation, Content, Know, Aware, and Time (with an outer weight value of more than 0.75) are the most influential components of the variable UserExperience. The LIU Model, WU Model, and UserBackground variables have the most influential components (with an outer loading value of more than 0.7), which are Liu_Con, Wu_Con, and NetSM,

respectively. The users' ability to work on websites for an extended period of time while using knowledge-based tools is demonstrated by the previously mentioned correlations.

In the WU model, the use of the interactive website leads to increased perceived interactivity on all dimensions of interactivity-perceived control, perceived responsiveness, and perceived personalization, for participants who used a computer; comparatively, for participants who used mobile devices, perceived interactivity increased in perceived responsiveness and perceived personalization. The SmartPLS 3.0 analysis shows that UserExperience when navigating a website for job, practice, or training course opportunities is influenced by the WU Model, and by the favourable perceived interactivity with the website (the hypothesis H3 was accepted). The ability to understand the user and easily communicate with them will transform the user into a returning and satisfied client. This is a win-win approach, in which both the company (website) and client win and have reciprocal benefits.

The analysis shows that UserBackground does not influence the LIU Model nor the WU Model (the hypotheses H4 and H5 were rejected). However, online UserExperience is indirectly influenced by the UserBackground; the higher the time spent navigating the websites or using mobile devices, the better the experience of the user when interacting with the websites.

It should be noted that there is more work to be executed. Due to the continuous improvement of the relationship between the market and the users, the consumers are accustomed to two-way communication with companies, as well as to obtaining quick assistance when making purchase decisions. Currently, the two-way communication is accomplished through the use of many marketing tools, of which the website is considered the main tool by most authors [13–15,58]. Many authors have dealt with investigating interactivity and the achieved effects on consumers, but the effects have not been high specified so far [20,23,25,28–32].

Innovation in a circular economy relies heavily on digitalization and website interactivity to gain a competitive advantage. As a means of investing in human resources potential, students in our study employed websites' interactivity in their quest for a job. When it comes to implementing circular economy principles, human resources play a critical role because of the innovation they bring to the table, as well as their ability to learn and apply cross-functional skills in new endeavours [1–4].

Students and employers alike can benefit from online job searches in a variety of ways, including reduced time and money spent, increased international visibility for businesses, and a wider range of options for students, all of which will raise the bar for both parties involved (students and employers), will improve information management due to the site collection of data in databases, will reduce the environmental impact (because driving and printing are not required), and more [10,11].

6. Conclusions

Innovation brings competitive advantages to a circular economy through digitalization and website interactivity. The digital economy introduces new devices and online marketing modalities, so each company must face the challenge of open consumer communication. The innovative product necessitates a marketing strategy to reach potential customers. Companies can achieve long-term financial success by cooperating and performing well in complex business networks. The high volume of data transfer between web-based applications and users' constant mobility necessitates implementing web technologies with a high level of interactivity.

Human resources are important in the circular economy because of their creativity, and their ability to learn new skills and collaborate with others in their community. The interactivity of websites is a way to invest in human resource potential by helping students and other users find jobs. It saves time and money, gives companies international visibility, gives students a wide range of options, raises standards for both parties (students and

employers), reduces the environmental impact (e.g., no driving and no printing), and creates an open market for demand and supply.

The Internet has shattered geographical and temporal boundaries, putting educational institutions in a tough spot. To enrol and participate, students must first obtain national and international accreditation. New accrediting criteria include digitalization, hybridization, entrepreneurship, social inclusion, green and circular economies, etc. A blockchain can help with the difficult accreditation process that ensures global teaching, learning, practice, and business communication quality.

The research matter regards the tasks and benefits of interactive websites, particularly when students and other users search online for job, practice, or training courses.

6.1. Enrichment of Knowledge for Science and Practice

The research develops a model for realizing a broader understanding of website interactivity. Thus, the research is structured based on a set of modelling variables. Further, the model is developed with regard to experiment structuring, variables configuration, testing activity design, complex analysis of correlations, and proper interpretations.

The research data, results analysis, and main interpretations show the benefits of interactive websites, as a possible way to make it easier for users to search the website, comment on advertisements, share content on social media, use e-mail marketing, etc.

In particular, the research clearly revealed the importance of using interactive website in searching online for job, practice, or training courses, because there is a significant increase in actions taken by users who used the interactive site compared to users of the non-interactive site. This is very important for company owners when looking for new staff, in terms of guidelines on how their site, through which they communicate with potential candidates, should look or what interactive features it should have.

Overall, the research shows that the WU Model seems to be more appropriate when analysing User Experience in an online environment. This model has the ability to measure user perception when navigating a website when searching for a job, practice, or training course. On the other hand, the LIU Model evaluates the specific and concrete actions of the user, such as active control, two-way communication, and synchronization, which are important; however, they seem to influence as facilitators, not as determinants for user experience in the online environment. Furthermore, the UserBackground regarding Internet navigation and social media profiles provided an indirect positive effect. The importance of user control to easily manage their steps, speed of feedback for users, and personalization by tailoring content and functionality for individual users are part of the user Interface Design, according to the observed Norman/Nielsen principles [60].

Generally, the achieved modelling, effective experiment, and results analysis and interpretation represent a theoretical and practical support for companies and potential users to develop their websites' interactivity level and applications, respectively.

6.2. Study Limitations and Future Research Directions

A group of students, with specific demographic and psychographic characteristics and ways of behaving when using the website, participated in the applicative part of the research. However, the study should be conducted on other categories of respondents to determine whether the website's interactive features are equally crucial for all types of users.

The research analyses the behaviour of participant students when searching for job, practice, or training courses. As a perspective, further research work should be envisaged and performed in order to develop a more complex modelling system on websites' operational interactivity, toward the reciprocal benefit of customers and companies. Thus, different models can be developed for different business areas of companies, in order to investigate whether the importance of interactivity between companies and consumers varies depending on the business area of the company. It is also possible to analyse whether

differences in consumer age imply different degrees of interactivity in this relationship between companies and consumers.

The limited time spent using the websites during the research and the predefined time when the search of the sites was performed can be considered as another limitation of this research. Future research should be conducted in natural conditions when the respondents need to search for the desired sites, and future research should certainly allow that search of locations to last as long as the respondents need it to.

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