

CAN WE PREDICT THE EFFECTS OF USING THE INTERACTIVE FEATURES OF THE WEBSITE?

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Abstract

This paper aims to determine the effects expected on users after introducing interactive features in the website. For this purpose, three models by Song, Liu and Wu were compared, which gives this paper an extraordinary precision and depth of research on the given problem. The paper’s contributions are reflected in a comprehensive, detailed review of previous research on interactivity, the importance of using the website and showing the specific effects expected from users after introducing interactive website features. Furthermore, the paper’s contribution is reflected in recognising the importance of site interactivity in job search/training courses/internships. Finally, users who used the interactive site compared to non-interactive sites had a significant increase in activity.

Keywords: *interactivity; website interactivity; perceived interactivity; customer satisfaction.*

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Introduction

The method of today's business implies the use of digital marketing tools in daily communication with consumers. The most commonly used tool for encouraging two-way communication is the company website. The website is the mirror of the company and has a significant impact on creating images in the minds of consumers regarding the company. [Miller 2010; Ryan, Jones, 2009; Reed, J. 2012]. The distinction between the companies is fair usage of digital marketing, i.e. web sites and their adjustments to the users to achieve more significant customers' satisfaction. Many papers have been written on researching the interactivity that can be achieved with the site user. Thus we know that the introduction of interactive features of the website increases the interactivity with the user [Downes, Mcmillan 2000; Liu, Shrum 2002; McMillan, Hwang 2002; McMillan 2002; Liu, 2003; Albert, Goes, Gupta, 2004; Johnson, Bruner, Kumar, 2006; Wu 2006; Song, Zinkhan 2008; Jiang et al. 1, 2010, Trevinal, 2014, McLean, 2017, Ye et al., 2017, Islam et al. 2019, Wu, 2019].

The primary goal of this paper is to compare three modules for research of the interactivity written by the authors' Song, Liu and Wu, analysis of the mentioned models and application of the Song model [Song, Zinkhan 2008] to obtain effects on consumers after the applied interactive features of the website. As a result of the research is expected to define specific products that owners can expect to achieve with users by introducing interactive elements into their websites.

1. Literature Review

1.1. Interactivity

Numerous studies have researched the concept of interactivity. Depending on the angle of viewing this concept, authors focus on the process, features, perception or a combination of these [McMillan, Hwang, 2002; Steuer 1992; Rogers, 1995; Johnson et al., 2006; Wu, 2005; Chung and Zhao, 2004; Song, Zinkhan 2008].

The effects investigated by authors in their works mainly refer to the attitude towards websites [Wu 1999; McMillan, Hwang, 2002; Song, Zinkhan 2008]. The attitude towards websites has been conceptualised by numerous authors [Chen, Wells 1999, Wu 1999; Bruner, Kumar 2000; Coyle, Thorson 2001; Bruner, Kumar 2002].

Satisfaction is another outcome of interactivity. Satisfaction is associated with a user's active control over the content, representing a desired psychological state [Yuping, Shrum 2002]. Satisfaction was measured based on research in Fornell et al., adapted by authors Song and Zinkhan (2008). The overall website quality and loyalty are calculated based on instruments used by Song and Zinkhan 2008. Some authors, such as Wu (1999), investigate only the relationship between perceived interactivity and the attitudes towards websites formed by consumers. However, a group of authors observe several effects, such as Song and Zinkhan (2008). They, in their work, also investigate the attitude towards websites, as well as satisfaction, the overall website quality, loyalty intention, and repeat purchase intention. Several authors have identified some of the above effects but have not proven them empirically [Liu, 2003]. Interactivity, vividness, and involvement are the significant factors influencing virtual experience and behaviour, and that involvement and flow enhance product value, which in turn impacts virtual behaviour [Cheon, 2013].

1.2. Website

Many authors have investigated digital marketing, and in their research, they have considered digital marketing tools. They have used various classifications of digital marketing tools, but all authors agree that one of the essential tools is a website [Miller, 2010; Ryan, Jones, 2009; Reed, J., 2012]. Author Ryan puts a website in the centre of the digital world as the most crucial element in the entire digital marketing strategy [Ryan, 2014]. Charlesworth (2014) also mentions the significance of websites for the digital marketing strategy with the statement "you are your website". In addition, the digital presence of service employees on the firm website increases current website service quality perceptions [Herhausen et al. 1, 2020].

2. Methods

2.1. Research Design And Methodology

Based on previous research we realize that the website is the primary tool for communication between company and users and that's the reason for using website in this research. Further, we created same job/ practice/ training course advertisements presented through interactive and non-interactive website.

Elements of interactivity discussed are reviewed in the works of the author Wu (2005). Interactive websites include features such as the ability to send links to friends, apply for jobs, practice skills, or take training courses online, as well as a

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website map, email hotlink, Online Chat Room, dropdown search menu, website search, and tags. As an added benefit, an interactive website gives users the option to share website content via other social media platforms such as Facebook, Google+, Linked-In, Pinterest, or Reddit, and is integrated with other digital marketing tools such as mobile marketing and e-mail marketing.

Although a large number of authors have been researching interactivity, this work is specific in that it crosses three models for interactive research. Previous research has shown that the impact of interactive characteristics exists but this work goes deeper into the analysis and explores exactly what effects we can expect in users behaviour, which is why the following hypothesis is set:

H0: Known effects on consumers are created through the use of interactive website features

The number of actions taken by site users increases when communicating with candidates when using interactive features of the website, leading to the formulation of a new hypothesis if we observe a group of respondents interested in looking for work or any professional training in the form of training courses or internships.

H1 When communicating with job/internship/training course candidates via the website, adding interactive features encourages more people to take action.

2.2. Pre-Test

Before testing, we performed a pre-test which included 350 students of the School of Electrical and Computer Engineering, Belgrade. All the respondents were in the first year of studies. Respondents completed a survey. Based on the given answers, we singled out 120 students interested in looking for a job/ practise/ training course on the website.

2.3. Main Survey

In the primary survey, the students singled out in the pre-testing stage were divided into six groups of 20 students each. Selected students were randomly given an interactive and non-interactive website and a 30-minute time to view the websites obtained.

2.4. Research Instruments

After a given time of 30 minutes, respondents received questionnaires, prepared according to the mentioned works of the author Wu [Wu, 1999], Song [Song, Zinkhan 2008], and Liu [Liu, 2003].

T-tests for large independent samples were used to compare the responses from people who used interactive and non-interactive websites. The statistical significance ranged from a p-value of 0.05 to a p-value of 0.01. It was necessary to use SPSS (Statistical Package for the Social Sciences) to perform the statistical analysis. 20.

During data processing, it is noted that there are incorrect completed questionnaires that have been removed from further processing. This is why the number of respondents decreased from 120 to 99. The number of respondents who used interactive and non-interactive site has been changed to 51 and 48. There is no statistically significant difference between the two groups despite the fact that the number of respondents is not the same in each one. We now know that the groups are uniform in terms of how many people responded, so we can move forward with analyzing the rest of the data.

3. Analysis of results Of Subtest In Research Model

The first step in testing a hypothesis is to establish statistically significant differences between the interactive and non-interactive websites according to subtests. Then a more profound analysis is undertaken by the questions used in the survey which belong to these subtests.

Table 1. Subtests in the research model

	Website type	M	SD	t	p
Attitude towards the website	Interactive	5.7516	1.09106	2.599	.011
	Non-interactive	5.1667	1.14854		
Satisfaction	Interactive	4.6797	.93799	2.436	.017
	Non-interactive	4.1875	1.07168		
Overall website quality	Interactive	5.5294	1.00206	3.469	.001
	Non-interactive	4.7708	1.17128		
Loyalty intention	Interactive	4.7843	1.49444	1.433	.155
	Non-interactive	4.3625	1.43017		

M – Arithmetic mean (average value of variables in the sample); SD – Standard deviation (average deviation of individual variable values from the sample average); t – t-test, p- statistical significance

After performing the analysis, it is established that there are statistically significant differences in the three subtests.

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Table 2. Respondents' answers to questions within the subtests

	Website type	M	SD	t	p
Attitude towards the website					
I think the website is good	Interactive	5.8627	1.21687	1.628	.107
	Non-interactive	5.4583	1.25407		
I think the website is suitable	Interactive	5.8039	1.13172	3.041	.003
	Non-interactive	5.0208	1.42156		
I think the website is appealing	Interactive	5.5882	1.38819	1.978	.051
	Non-interactive	5.0208	1.46577		
Satisfaction					
I am satisfied with the experience on the website	Interactive	5.4510	1.47396	2.499	.014
	Non-interactive	4.7292	1.39512		
This experience of looking for a job online is what I wanted	Interactive	4.7843	1.57878	.692	.490
	Non-interactive	4.5417	1.90138		
This online experience did not go as I had imagined	Interactive	3.8039	1.26522	1.662	.100
	Non-interactive	3.2917	1.77402		
Overall website quality					
The overall quality of looking for a job on a website is	Interactive	5.4706	1.20587	2.397	.018
	Non-interactive	4.8542	1.35253		
My feelings towards the website are	Interactive	5.5882	1.08030	3.830	.000
	Non-interactive	4.6875	1.25742		
Loyalty intention					
I will encourage my friends and relatives to look for a job on this website	Interactive	4.8824	1.63275	1.596	.114
	Non-interactive	4.3125	1.91474		
I will tell positive things about the website to other people	Interactive	5.1765	1.63347	1.383	.170
	Non-interactive	4.7292	1.58100		
I will continue using the website to look for a job in the future	Interactive	4.7451	1.75320	1.539	.127
	Non-interactive	4.1875	1.85261		
I would recommend this website to someone who asks me for advice	Interactive	5.1176	1.77366	1.043	.300
	Non-interactive	4.7500	1.73205		
I consider this website my primary source of information regarding jobs on the market	Interactive	4.0000	1.66132	.509	.612
	Non-interactive	3.8333	1.58897		

M – Arithmetic mean (average value of variables in the sample); SD – Standard deviation (average deviation of individual variable values from the sample average); t – t-test, p- statistical significance

- “Attitude towards the website” (respondents who used an interactive website have a higher score, $M=5.75$),
- “Satisfaction” (respondents who used an interactive website have a higher score, $M=4.68$) and
- “Overall website quality” (respondents who used an interactive website have a higher score, $M=5.53$).

Results Of Respondents By Answers Within The Research Model

Look in detail at the respondents’ answers within each subtest. You can see questions on which there is a statistically significant difference in the respondents’ responses to the interactive and non-interactive sites.

Within the subtest “Attitude towards the website”, statistically significant differences occur in the following questions:

- “I think the website is suitable” – the interactive website responders have a higher score ($M=5.8$) than the non-interactive website responders ($M=5.02$)
- “I think the website is appealing” the interactive website responders have a higher score ($M=5.59$) than the non-interactive website responders ($M=5.02$)

Within the subtest “Satisfaction”, there are statistically significant differences in one question only – “I am satisfied with the experience on the website”, where a higher score is achieved in the interactive website respondents ($M=5.45$) compared to the non-interactive website respondents ($M=4.73$).

Within the subtest “Overall website quality”, statistically significant differences are recorded in the following questions:

- “The overall quality of looking for a job on a website is” - the interactive website responders have a higher score ($M=5.47$) than the non-interactive website responders ($M=4.85$)
- “My feelings towards the website are” - the interactive website responders have a higher score ($M=5.59$) than the non-interactive website responders ($M=4.69$)

Results of Applied Job/ Practice/ Training Course

From the above survey, it can be concluded that the use of interactive features of a website influences the creation of attitudes towards the website, the satisfaction of users, and the opinion on the overall website quality, while the use of interactive features has no impact on building the users’ loyalty to the website.

The use of both types of the presented websites aimed at achieving effects on consumers. The achieved impact on consumers is intended to invite users to a final action, which means applying for a job/ practise/ training course. Table 3 presents

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how many respondents used for a job/ practise/ training course, how many advertisements the respondents responded to, and the average number of applications for a job/ practice per observed user.

Table 3. Results of applied job/ practice/ training course

Website type	Interactive website	Non-interactive website	Interactive/ Non-interactive
Number of registered respondents	38	10	3.8
Number of applications for practice/ course/ training course	87	13	6.69
The average number of applications per respondent	2.29	1.3	1.76

From the given table, we can see that the number of registered candidates is 3.8 times higher for the interactive website than for the non-interactive website; the number of advertisements the respondents responded to during the survey is 6.69 times higher for interactive than for non-interactive website users, while the average number of applications per respondent is 1.76 times higher for the interactive than for the non-interactive website.

An interactive website also offers users the possibility of signing up for a mailing list to receive all the news published at the registered e-mail address. Of the respondents who used the interactive website, 15 respondents started the mailing list sign up process. Of 15 respondents who started the mailing list sign up process, seven respondents confirmed the registration via the link obtained by e-mail. In comparison, eight respondents did not ensure the registration. Therefore, their e-mail addresses are not included in the database of registered candidates for receiving additional information regarding the application for a job/ practice/course.

4. Discussion

After conducting research, the results show that when introducing interactive features of the website, we can expect the achieved effects in the form of a positive attitude of users towards the site, greater satisfaction of site users and the

impression of greater quality of the used site. Let us enter into a deeper analysis of these subtests. It is determined that there is a statistically significant difference in the questions “I think the website is suitable”, “I think the website is appealing”, “I am satisfied with the experience on the website”, “The overall quality of looking for a job on a website” and “My feelings towards the website are” where the users of the interactive site gave a higher score. In this way, the first hypothesis, H₀, is proved: Known effects on consumers are created through interactive website features. On the other hand, there is no statistically significant difference in the subtest loyalty intention between the respondents who used an interactive website and those who used a non-interactive website.

Further results support the fact that the interactive features of the site increase user activity on the site itself [Yoon, Youn, 2016; Reynolds, Ruiz de Maya, 2013; Wolk, Theysohn 2007; Grant, Clarke, Kyriazis, 2013]. By introducing interactive features into the website in this research, it was also determined that users of the interactive website could be connected to the company in the future by subscribing to the mailing list. In this way, users remain in contact with the company. They can be acquainted with all the news in the company, which leads to the possibility of repurchase and, in the case of this research, returning to the site when re-searching jobs/internships/training courses. Of the total number of candidates who used the interactive website, seven candidates (approximately 12%) completed the application process; their contacts were in the database, a significant percentage of potential users who will contact the company. As this option is not possible for users of a non-interactive site, it can be seen that the loss of retention of a potential user is significant.

Further in the paper, it is established that on interactive websites for applying for a job/practice/ training course, the percentage of users who took the final action and applied for a job/practice/ training course is 3.8 times higher than the number of non-interactive website users. The number of applications for a job/ practise/ training course is 6.69 times higher for the interactive website than for the non-interactive website.

5. Conclusion

The study, however, contains several limitations. First, due to the validity of the results, the research was conducted in laboratory conditions. Second, the respondents were not in their natural environment in which it would be more pleasant for them to visit the website. Third, respondents also had limited time both to visit the website and complete the survey questionnaire, which could affect the

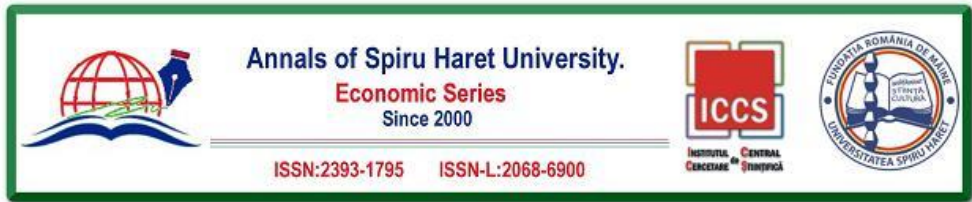
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speed and reasoning of the respondents. Finally, the participants in the research are first-year students, which includes only one age group of respondents.

References

- [1] Aurélie Michaud Trevinal, Thomas Stenger (2014) ‘Toward a conceptualisation of the online shopping experience. *Journal of Retailing and Consumer Services*. 21, 314 -326
- [2] Agnieszka Wolk , Sven Theysohn (2007) Factors influencing website traffic in the paid content market, *Journal of Marketing Management*, Vol. 23, No. 7-8, pp. 769-796 ISSN0267-257X print /ISSN1472-1376 online © Westburn Publishers Ltd.
- [3] Alan Charlesworth (2014), *Digital marketing*, 2nd edition, Taylor & Francis Group – Routledge, New York, USA (Kindle location 138-156)
- [4] Ben Haobin Ye, Albert A. Barreda, Fevzi Okumus, Khaldoon Nusair (2017). Website interactivity and brand development of online travel agencies in China: The moderating role of age. *Journal of Business Research*.
- [5] Chen, Qimei Wells, William D. (1999), “Attitude Toward the Site” *Journal of Advertising Research*, Vol 39 No 5, pp 27-37
- [6] Damian Rayan, Calvin Jones (2009), *Understanding digital marketing – Marketing strategies for engaging the digital generation*, Kogan Page Ltd
- [7] Damian Ryan (2014), *Understanding digital marketing – Marketing strategies for engaging the digital generation*, Third edition, Kogan Page Ltd
- [8] Dennis Herhausen, Oliver Emrich, Dhruv Grewal, Petra Kipfelsberger, Marcus Schoegel (2020). Face Forward: How Employees’ Digital Presence on Service Websites Affects Customer Perceptions of Website and Employee Service Quality. *Journal of Marketing Research*, 002224372093486. doi:10.1177/0022243720934863
- [9] Doyle Yoon, Seounmi Youn (2016). Brand Experience on the Website: Its Mediating Role Between Perceived Interactivity and Relationship Quality. *Journal of Interactive Advertising*, 16(1), 1–15. doi:10.1080/15252019.2015.1136249
- [10] Edward J. Downes, Sally J. McMillan (2000). Defining interactivity: a qualitative identification of key dimensions. *New Media and Society* 2(2), 157–179
- [11] Eunyoung Cheon (2013). Energising business transactions in virtual worlds: an empirical study of consumers’ purchasing behaviours, *Information Technology Management* No 14 pp 315–330
- [12] Everett M. Rogers (1995). *The Diffusion of Innovations*, 4th edition. New York: Free Press.
- [13] Gordon C. Bruner, Anand Kumar (2000), “Web Commercials and Advertising Hierarchy-of-Effects,” *Journal of Advertising Research*, Vol 40, pp 35–42
- [14] Gordon C. Bruner, Anand Kumar (2002), “Similarity Analysis of Three Attitude-Toward-the-Website Scales,” *Quarterly Journal of Electronic Commerce*, Vol 3 No 2, pp 163–172.

- [15] Guohua Wu (1999). Perceived Interactivity and Attitude toward Website. Presented at the Annual Conference of American Academy of Advertising Albuquerque, New Mexico.
- [16] Guohua Wu (2005). The mediating role of perceived interactivity in the effect of actual interactivity on attitude toward the website. *Journal of Interactive Advertising*, 5(2), 29–39.
- [17] Guohua Wu (2006). Conceptualising and Measuring the Perceived Interactivity of Websites. *Journal of Current Issues & Research in Advertising (CTC Press)*, 28(1), 87–104.
- [18] Grace J. Johnson, Gordon C. Bruner II, Anand Kumar (2006). Interactivity and its facets revisited. *Journal of Advertising*, 35(4), 35–52
- [19] Graeme J. McLean (2017) Investigating the online customer experience – a B2B perspective, *Marketing Intelligence & Planning*, <https://doi.org/10.1108/MIP-12-2016-0222>
- [20] Islam Husain, Charles Jebarajakirthy, Amit Shankar (2019). An experimental based investigation into the effects of website interactivity on customer behavior in online purchase context. *Journal of Strategic Marketing*, 1–24. doi:10.1080/0965254x.2019.1637923
- [21] James R. Coyle & Esther Thorson (2001). The Effects of Progressive Levels of Interactivity and Vividness in Web Marketing Sites. *Journal of advertising*, 30(3), 65–77
- [22] Ji Hee Song, George M. Zinkhan (2008) Determinants of Perceived Web Site Interactivity, *Journal of marketing*, vol 72, 99-133
- [23] Jonathan Steuer (1992). Defining Virtual Reality: Dimensions Determining Telepresence. *Journal of communication*, 42(4), 73–93.
- [24] Jon Reed (2012), *Get Up to Speed with Online Marketing*, Upper Saddle River, New Jersey, FT Press, str 35-36
- [25] Kee H. Chung, Xin Zhao (2004). Effects of Perceived Interactivity on Web Site Preference and Memory: Role of Personal Motivation. *Journal of Computer-Mediated Communication*, 10(1)
- [26] Linwan Wu (2019). Website interactivity may compensate for consumers' reduced control in E-Commerce. *Journal of Retailing and Consumer Services*, 49, 253–266. doi:10.1016/j.jretconser.2019.04.003
- [27] Nina Reynolds, Salvador Ruiz de Maya (2013) The impact of complexity and perceived difficulty on consumer revisit intentions, *Journal of Marketing Management*, Vol. 29, No. 5–6, 625–645
- [28] Robert G. Grant, Rodney J. Clarke, Elias Kyriazis (2013) Modelling real-time online information needs: A new research approach for complex consumer behaviour, *Journal of Marketing Management*, Vol. 29, Nos. 7–8, 950–972, <http://dx.doi.org/10.1080/0267257X.2011.621440>



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- [29] Sally J. McMillan (2002). A four-part model of cyber-interactivity. SAGE Publications, 4(2), 271–291.
- [30] Sally J. McMillan, Jang-Sun Hwang (2002). Measures of Perceived Interactivity: An Exploration of the Role of Direction of Communication, User Control, and Time in Shaping Perceptions of Interactivity. *Journal of advertising*, 31(3), 29–42.
- [31] Terri C. Albert, Paulo B. Goes, and Alok Gupta. (2004) “GIST: a model for design and management of content and interactivity of customer-centric web sites.” *MIS Quarterly* 161-182.
- [32] Yuping Liu, L. J. Shrum (2002). What is interactivity, and is it always such a good thing? Implications of definition, person and situation for the influence of interactivity on advertising effectiveness. *Journal of Advertising* 31(4), 53–64.
- [33] Yuping Liu, (2003). Developing a scale to measure the interactivity of websites. *Journal of Advertising Research*, 43, 207-216.
- [34] Zhenhui Jiang, Jason Chan, Bernard C.Y. Tan, Wei Siong Chua (2010). Effects of Interactivity on Website Involvement and Purchase Intention. *Journal of the Association for Information Systems* 11(1), 34–59