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OBADĂ DANIEL RAREŞ[1] Present-day topics

EXPLORING THE MEDIATING ROLE OF PERCEIVED QUALITY BETWEEN ONLINE FLOW AND CUSTOMER'S ONLINE PURCHASE INTENTION ON A RESTAURANT E-COMMERCE WEBSITE

Abstract

The aim of this paper is to explore the relationship between online flow, also called optimal experience, perceived quality of a restaurant e-commerce website, and customer's purchase intention. First, we reviewed flow, perceived quality, and purchase intention studies in the literature, and proposed a conceptual model of the hypothesized relationships between our variables. Afterwards, we identified in the literature measuring methods and scales for online flow, perceived quality and customer's purchase intention, and ran a reliability analysis. In order to study the relationship between the variables from our conceptual model, we used a qvasi-experimental design. The first phase of our study consisted in selecting a restaurant e-commerce website: www.pizzeriaalila.ro, and establishing a task scenario. Second phase involved data collection. We sent 3200 emails containing an invitation to participate to study, through an email marketing platform. The sample used was nonprobabilistic. The opening rate of emails containing the invitation was 28.5%, with 8% click rate on the link to participate to our study. At the end of this second phase, July 15, 2014, we received 210 answers, thereof 132 were valid.

Multiple regression analyses were conducted to assess each component of the proposed mediation model. Results of the mediation analysis confirmed the mediating role of the perceived quality of an e-commerce website in the relation between online flow and online purchase intention. Finally, we discuss conclusions and limitations of our study.

Key words: *online flow, perceived quality, e-commerce website, purchase intention, online customer, mediation*

1. Introduction

In the last years, the Internet is rapidly growing and provides unique opportunities for marketers to sell their products and services. According to a recent research, the Eurostat report [35], the degree of Internet access varies among EU Member States, ranging from more than 90% of households in Denmark, the Netherlands, Luxembourg and Sweden, to less than 55% in Bulgaria, Romania and Greece.

In another report published in 2013 by Ecommerce Europe Association [34], data shows that the e-commerce is developing extremely well in Europe. In 2010 Europe overtook the USA, the biggest market in the world until then, and in 2012 European B2C e-commerce, including online retail goods and services such as online travel bookings, vents and other tickets, or downloads grew by 19.0% to reach € 311.6 bn. For example, in 2012 the e-sales in Romania were at 800 million euros [34].

In this context, scholars and practitioners were interested to understand the online customer's behavior, in order to propose successful business models and effective marketing strategies in the online environment.

E-commerce websites are important tools for marketers that can be used to facilitate online trading between a company and its customers. Unlike traditional shopping channels, firms that use online shopping as a means to generate revenue, can sell both "real items" and

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"virtual items" [6] by using e-commerce websites. "Real items" refer to goods or services that can be used offline - no matter whether these goods or services are bought online or offline [6], such as computers, food, and smartphones. "Virtual items" are goods or a service whose purchase and use are constrained to a particular online space, as opposed to the concept of "real items", and includes virtual gifts, avatars, or music. So, for marketers is extremely important to create high quality websites that can facilitate the online trading of "real and virtual items".

Previous studies have proposed that website quality can directly lead to purchase intention [4]. Therefore, further understanding of the relationship between online flow, e-commerce website quality that sells "real items", and purchase intention is the main concern of this study.

In our view, selling "real items" can be facilitated by an e-commerce website with a high perceived quality, that can induce flow experience to customers. According to flow theory [11], flow is an extremely enjoyable experience where an individual engages in an activity with involvement, concentration and enjoyment, and experiences an intrinsic interest as well as a feeling of time distortion during his/her engagement [7]. The concept of flow has been used in marketing since 1996 for a better understanding of users' experiences and behavior in virtual worlds [15, 22].

The aim of this study is to explore the relationship between online flow, perceived quality of a restaurant e-commerce website, and customer's purchase intention.

Research objectives of the study are: to measure customers' flow state that occurs during their surfing on a restaurant e-commerce website; to investigate the relationship between online flow state and perceived quality of an e-commerce website; to study the relationship between perceived quality of a restaurant e-commerce website, and customer's purchase intention; to examine the relationship between online flow state and customer's purchase intention.

The paper is structured as follows. First, we review flow, perceived quality, and purchase intention studies in the literature; based on this revision, hypotheses are then formulated. Thereafter, we summarize the research methodology and present the study results. Ultimately, limitations are discussed.

1. Conceptual framework and literature review

1.1. Online flow and perceived quality of a restaurant e-commerce website

According to flow theory, "optimal experience or flow is the holistic sensation that people feel when they act with total involvement" [11]. Individuals may experience flow every day, in different activities, in offline and online environment (e.g. playing tennis, surfing on the Internet, online purchasing).

From Csikszentmihalyi's [11] point of view, the individual needs to have: a clear goal, balance between perceived skills and challenges, and an immediate feedback, in order to experience a flow state. Flow symptoms are: concentration, mergence of activity and awareness, sense of control, time distortion, loss of self-consciousness, and autotelic experience [10]. Marketing and information system researchers used the flow concept in computer mediated communications (CMC), and later in human-computer interaction studies [30, 12]. For a better understanding of the e-commerce phenomenon, scholars used flow theory to explore customer's experience and their online behavior.

Hoffman and Novak [15] defined online flow as "the state occurring during network navigation which is: characterized by a seamless sequence of responses facilitated by machine interactivity, intrinsically enjoyable, accompanied by a loss of self-consciousness, and self-reinforcing". They argued that online flow can have positive marketing outcomes, such as:

increased perceived behavior control, positive subjective experience, increased learning and an increased exploratory behavior [15]. For example, online flow is positively related to an increased learning [14]; influences attitudes towards online purchasing [17], brand attitudes [21, 26] and attitudes towards a website [19]. In other studies, flow has been found to influence behavioral intentions: online purchase intentions and revisit intentions [19], intention to use the web [1, 26], and intention to play an online game [16]. Another outcome of flow experience was an increased exploratory behavior [22; 17] and perceived behavioral control [15].

In our paper, we are interested in studing online flow state in goal-directed activities (purchasing food from a restaurant e-commerce website). We briefly remind that online activities can be divided in two broad categories: experiential and goal-directed activites [23]. Online customers tend to seek utilitarian values rather than hedonic values in goal-directed activities [6], given the context of selling "real items".

We anticipate that the customers that surf on a restaurant e-commerce website and experience online flow, may evaluate the website as more qualitative. Therefore, the following hypothesis is proposed:

Hypothesis 1. There is a relationship between customer's online flow experience and perceived quality of a restaurant e-commerce website.

1.2. Perceived quality of restaurant e-commerce websites and online purchase intention

Perceived quality is considered to be an important construct for marketers because it is an asset in firms' competition, and a driver for business success in virtual markets.

Aladwani and Palvia [1] defined perceived quality of a website as: "users' evaluation of a website's features meeting users' needs and reflecting overall excellence of the website".

Internet shopping websites, or e-commmerce websites, are defined by Yoo & Donthu [32] as: "web retail sites in which customers can browse, evaluate, order, and purchase a product or a service." So, according to Yoo & Donthu [32], e-commerce websites are "online versions of physical retail stores where all transactions and relevant activities take place in online cyber space." E-commerce websites are a substitute for conventional retailing channels, mail or phone-order stores [32]. High quality e-commerce websites are able to attract more customers than competing low quality e-commerce websites, because quality builds sustainable competitive assets [32]. Quality studies of traditional retail stores confirm that customers use store quality as a vital extrinsic cue about quality of the store's products [32]. High quality e-commerce websites attract more attention, customers, and positive word-of-mouth communication for the site [32].

Many studies of e-commerce website quality have their origins in the service quality literature. There is a plethora of e-commerce quality literature identifying a large number of proposed dimensions. According to their focus, studies for evaluating perceived quality of a website have their origins in online retailing services and website design [9]. For example, in a study for online retailing services, Zeithaml, Parasuraman, and Malhotra [33] proposed 5 dimensions of the perceived quality of a website: information availability and content, ease of use or usability, privacy/security, graphic style, and reliability.

In another study that focused on website design, Loiacono, Watson, and Goodhue [18] developed WebQual^{TM} scale to assess website quality, with 12 dimensions: informational fit-to-task, interactivity, trust, response time, ease of understanding, intuitive operations, visual appeal, innovativeness, emotional appeal, consistent image, online completeness, and better than alternative channels.

eQual scale proposed by Barnes and Vidgen [5] contained 4 factors: content quality (it encompasses accuracy, believability, timeliness, relevance, level of detail, and appropriateness of format. It also includes the degree to which the design is appropriate for

the type of site, the degree to which the site conveys organisational competency, and confidence that goods and services will be delivered as requested), usability (it includes learnability, site reputation, the ability to complete useful transactions, clear and understandable interaction, navigability, and a sense of control), transaction safety and efficiency (feeling safe when completing transactions on the website, security of personal information, believing that transactions on the site will be efficient), interaction quality: it includes the range of offered transactions, a sense of enjoyability or entertainment, the degree to which the site creates a positive experience, the degree to which the site makes it possible to communicate with the organisation, and whether, overall, the user considered the response time acceptable.

We conclude that the scales proposed for measuring perceived quality of e-commerce websites differ in terms of origins and number of suggested dimensions.

In our study, for measuring perceived quality of restaurant e-commerce website, we used 5 dimensions: (1) design quality, (2) content quality, (3) perceived ease of use, (4) novelty, and (5) perceived usefulness.

Analyzing the literature, we notice a lack of studies in flow literature that focus on evaluating the relationship between the perceived quality of a restaurant e-commerce website and customer's purchase intention. We anticipate that customers who evaluate an e-commerce website as having a high quality, will have the intention to perform a purchasing over the assigned e-commerce website. Therefore, we propose the following hypothesis:

Hypothesis 2. There is a relationship between the perceived quality of a restaurant e-commerce website and customer's purchase intention.

1.3. Online purchase intention and online flow

Online purchase intention refers to the strength of a consumer's intention to perform a specified purchasing behavior over the Internet [24]. Researchers argued that behavioral intention reflects the individual's likelihood of engaging in the behavior of interest. It measures how hard an individual is willing to take a specific action [2].

Previous flow studies showed that purchase intention is an outcome of online optimal experience, or online flow [17, 19, 28, 29, 14, 6]. Therefore, consumers who experience online flow while they surf on a restaurant e-commerce website, would be likely to generate transaction intentions [31]. Based on our argumentation, the hypothesis is made as it follows:

Hypothesis 3. There is a relationship between online flow state and customer's purchase intention towards a restaurant e-commerce website.

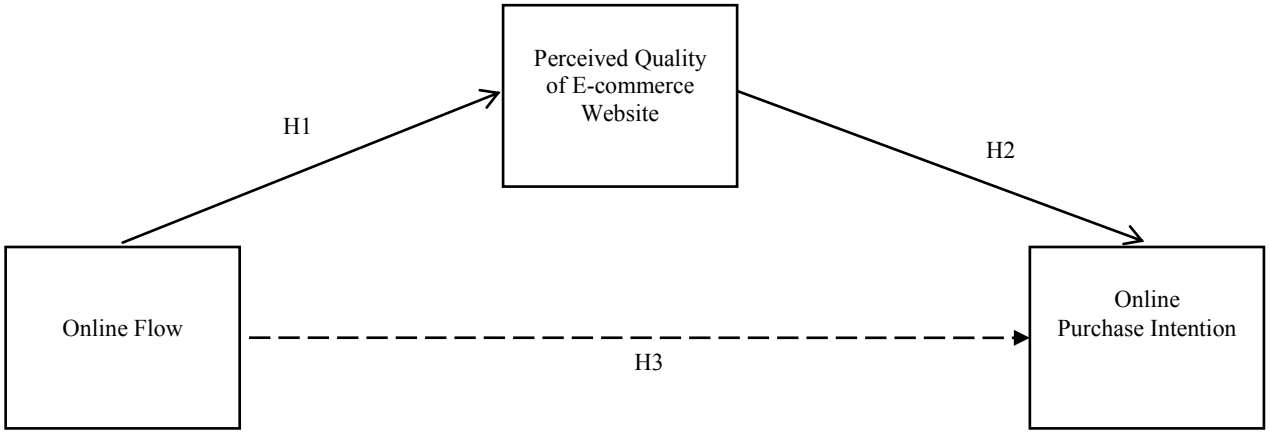

Fig. 1. Conceptual model of the relationship between online flow, perceived quality of a restaurant e-commmerce website, and online purchase intention.

As we can see, **fig. 1** depicts the relationship suggested in the three hypotheses previously discussed.

2. Research methodology

1.4. Research design

In order to study the relationship between the variables from our conceptual model, we used a qvasi-experimental design. The first phase of our study consisted in selecting a restaurant e-commerce website: www.pizzeriaalila.ro, and establishing a task scenario. The second phase involved data collection. The study population was represented by potential customers of a restaurant e-commerce website. In order to collect data, we used a convenience sampling.

We sent 3200 emails containing an invitation to participate to study, through an email marketing platform. The sample used was nonprobabilistic. The opening rate of emails containing the invitation was 28.5%, with 8% click rate on the link to participate to our study. At the end of this second phase, July 15, 2014, we received 210 answers, thereof 132 were valid. To facilitate online flow state occurrence, we asked the participants to simulate buying products from the assigned e-commerce website (goal-oriented behavior), by completing the entire purchasing process. Afterwards, we used a self-administered survey questionnaire to collect the information from participants.

1.5. Instrumentation

The measurement approaches and scales were adapted from the existing literature, and were used to operationalize the research constructs in this study.

The questionnaire we built had three sections: the first section contained the task, a narrative description of flow experience, and a simple direct report item asking the respondents to rate if they had an optimal experience during their surfing session (we used a seven-point Likert-type scale ranging from strongly disagree – 1 to strongly agree - 7). This unidimensional measurement approach of online flow is consistent with other previous flow studies [8, 19, 17, 27], and according to Hoffman and Novak [14], it has an important advantage: ease of administration. Subjects presented with a narative description of online flow are assumed to be able to understand the flow concept intuitively and holistically [14]. Also, in the first section of the questionnaire, we used a filter question: respondents were asked to mention the products they simulated purchasing from the assigned e-commerce website, in order to determine if they qualified to answer to the next questions, regarding the perceived quality of the e-commerce website, and to evaluate their purchase intention.

The second section of the questionnaire consisted in closed-ended questions, and we used 36 items to measure the constructs of perceived quality of a restaurant e-commerce website, and online purchase intention. Perceived quality of a restaurant e-commerce website was assessed using a seven-point Likert-type scale ranging from strongly disagree – 1 to strongly agree – 7, containing 33 items.

Cronbach's alpha (α) coefficient for perceived quality of a restaurant e-commerce website scale was 0.963 indicating an adequate reliability. For online purchase intention variable, we adapted the scale proposed by Cha (Cronbach's α = .96) [6]. In our study, Cronbach's alpha (α) coefficient for online purchase intention scale was .892 indicating an adequate reliability.

The third section contained items for collecting the socio-demographic data from the respondents.

3. Results and main findings

First of all, our study respondents were 29% male and 71% female. 86% of the respondents had their age between 19 – 35 years; 40.9% had a bachelor degree, 43.9 a master degree, and 4.5 a PhD degree.

Second, after completing our analysis, we concluded that 54.55% of the respondents did not experience a flow state during their surfing on the assigned e-commerce website, and 45.45% experienced a flow state while they simulated buying products (21.21% of the respondents experienced a flow state with a low intensity, 15.5% experienced a flow state medium in intensity, and 9.09% experienced a high intensity of flow state). This result is consistent with other flow studies in which the respondents experienced a flow state during their web activities.

Third, we consider important in this section a brief disscusion on the mediation analysis. Scholars conduct mediation analysis in order to indirectly assess the effect of a proposed cause on some outcome through a proposed mediator [24]. Preacher and Hayes [24] argue that the utility of mediation analysis stems from its ability to go beyond the merely descriptive to a more functional understanding of the relationships among variables. A necessary component of mediation is a statistically and practically significant indirect effect.

We briefly remind that a variable may be called a *mediator* "to the extent that it accounts for the relation between the predictor and the criterion" [24]. The simple relationship between *X* and *Y* is often referred to as the *total effect* of *X* on *Y;* we denote the total effect *c* to distinguish it from *c*', the *direct effect* of *X* on *Y* after controlling for *M*. The formal heuristic analysis often used to detect simple mediation effects is straightforward and follows directly from the definition of a mediator [24]. Variable *M* is considered a mediator if: *X* significantly predicts *Y*; *X* significantly predicts *M*; and *M* significantly predicts *Y* controlling for *X*. When the effect of X on Y decreases to zero with the inclusion of M, perfect mediation is said to have occurred, and this situation is called complete mediation [24]. When the effect of X on Y decreases by a nontrivial amount, but not to zero, partial mediation is said to have occurred [24].

There are more statistically rigorous methods by which mediation hypotheses may be assessed (e.g. Sobel test, Baron and Kenny criteria, and bootstrapping method with bias-corrected confidence estimates).

For our data, multiple regression analyses were conducted to assess each component of the proposed mediation model.

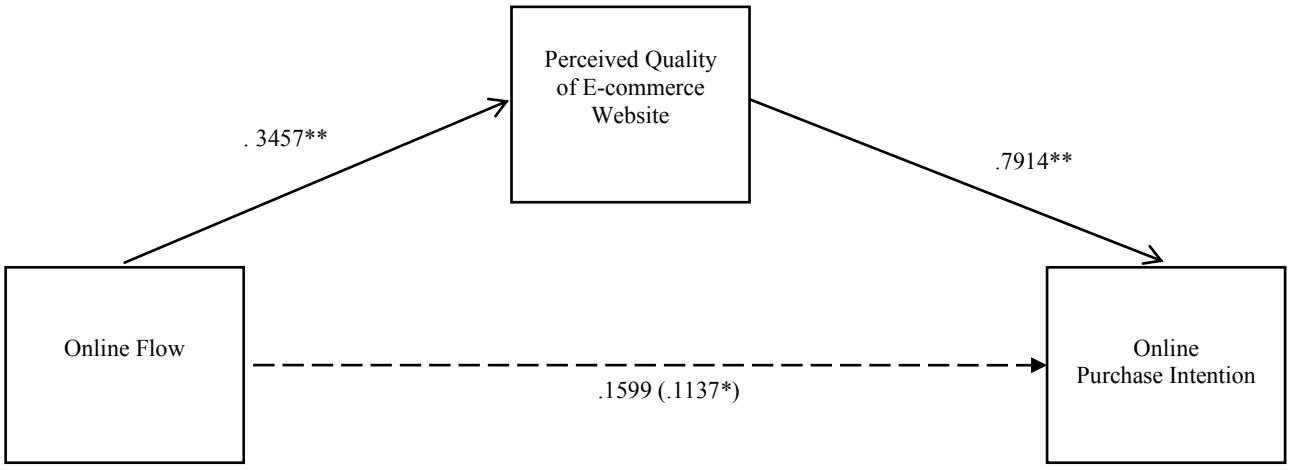

Fig. 2. Indirect effect of Online Flow on Online Purchase Intention through Perceived Quality of an E-commerce Website

First, it was found that online flow was positively associated with online purchase intention (B = .1137, t (130) = 2.0195, p = .05) – (c path).

It was also found that online flow was positively associated with perceived quality of a restaurant e-commerce website (B = .3457, t (130) = 8.3468, p = .01) – (a path).

Results indicated that the mediator, perceived quality of a restaurant e-commerce website, was positively associated with online purchase intention (B = .7914, t (130) = 2.8085, p = .01) - (b path).

Because both the a-path and b-path were significant, mediation analyses were tested using the bootstrapping method with bias-corrected confidence estimates [24]. In the present study, the 95% confidence interval of the indirect effects was obtained with 5000 bootstrap resamples [24].

Results of the mediation analysis confirmed the partial mediating role of perceived quality of a restaurant e-commerce website in the relation between online flow and online purchase intention (B = .2736; CI = .1962 to .3635). Fig. 2 displays the results.

4. CONCLUSION

First of all, our study proves that customers can experience online flow while they surf on a restaurant e-commerce website. This is in accordance with previous studies from the literature showing that during web navigation, customers can experience an optimal experience, or online flow.

Second, the findings of this study provide support for the model presented in **fig. 1** and for the hypotheses regarding the relationship among the model variables.

The most important finding of our study was the confirmation of the relation between users' online flow state, perceived quality of a restaurant e-commerce website, and purchase intention. Also, our mediation analysis shows that perceived quality of an e-commerce website is a mediator between online flow and online purchase intention.

This main finding is important for flow theory and for marketing and IS practitioners due to its implications. First, the confirmation of online flow state influence on perceived quality of a restaurant e-commerce website could be useful for a functional understanding of the relationships among these three variables. This finding is particularly important for managers of a restaurant e-commerce website, as they decide how to allocate resources for creating effective tools to sell their products. The importance of superior service quality is critical for the success of a restaurant e-commerce website. This study suggests that a restaurant that uses e-commerce website should consider focusing their efforts to provide their customers with an optimal experience and a high qualitative e-commerce website. Considering the fact that a restaurant has both an online and offline presence, marketers could use the flow experience that occurs during web navigation to extend the customer's positive feelings to the offline store.

The findings of this study show the importance of online flow marketing outcomes. Our study supports the idea that flow experience is positively associated with customer's online purchase intention, and perceived quality of a restaurant e-commerce website.

We conclude by considering that this study results can be useful for marketing and information systems practitioners in order to understand online customer behavior and to develop effective marketing strategies in the online environment.

5. Limitations and future research

First, we consider that a high reliability of online flow measurement could be achieved by using a direct and an indirect approach. Second, the study design and the nonprobabilistic sample we used require caution in generalizing results and draw inferences for a larger population. We consider that our study is an exploratory one, and should be replicated on a larger sample. Finally, we emphasize the need for more studies in assessing the mediating role of the perceived quality of a restaurant e-commerce website between online flow and customer's purchase intention.

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