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The Influence of Motivation on Emotional Experience in E-commerce

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Abstract. To explore the notion of User Experience in regard to motivation and affect in the context of e-commerce, a preliminary research model was developed. According to this model, customers' motivations influence their experience of using e-commerce systems. A pilot study with 12 participants was designed to evaluate this hypothesis. The results suggested that customers' emotional experiences were associated with their motivation to visit an e-commerce website. Our future research will investigate the validity of this model with more thorough evaluation methods.

Keywords: User Experience· Emotion· Motivation· E-commerce.

1 Introduction

According to the Forrester research, e-commerce generated 112 billion Euros in sales for European retailers in 2012, and is expected to yield more than \$191 billion Euros in 2017 [1]. These numbers imply the rapid growth of e-commerce technology. In addition, web-based retailing hinges crucially on the design and development of information and communication technology (ICT) [2], thus information systems and human-computer interaction (HCI) should support a variety of users' goals and needs. Until recently, research and practice in HCI has focused on improving usability qualities (e.g. effectiveness and efficiency) of interactive technologies (e.g. [3]). However, the limitations of the narrow focus of usability, which concerns more about work-related and instrumental qualities [4] and less about aesthetic or affective qualities [5], have been identified. Consequently, the notion of User Experience (UX) has emerged to go beyond the usability of such interactions and include the desirability and experiential quality of ICT services.

UX, as a phenomenon, is considered as subjective, dynamic and context-dependent [4]. Research [6] has described UX as a consequence of user's affect, emotions, needs, motivation (user's internal moods) and the characteristics of the context. In addition, [7] have discussed that UX is about user's feelings while they are interacting with a product or service and these feelings and expectations are anticipatory. Thus, it can be concluded that experience, which is described as inseparable from emotions [8] can be probed and investigated by asking the question "How do you feel?"[9].

Since precedent conditions can influence users' affective and cognitive states and thus their appraisal of the service of interest, this paper's objective is to address the relationship between users' motivations, emotions and experience. To evaluate this assumption, we developed a research model to explore how customers' motivations can be linked to different affective states, which lead to different experiences.

2 Emotions in E-commerce

Emotions influence customers' cognition and their shopping behaviors in online environments [10] and they apperceive service or product quality based on their feelings [11]. For instance, it was suggested that affect mediates the perceived aesthetic quality of web-based stores [2]. Scholars have also argued that affective states can lead to different cognitive responses such as the perception of a website's effectiveness and informativeness [12]. As an example, [13] reported that positive emotions can contribute to the simple and default way of information-processing and negative emotions to the scrutinized analysis of information, which demands high cognitive involvement. Emotions can also cause changes on the current flow of interactions undertaken by the user [14]. For instance, if the user browses a website to identify certain information, and when the slow Internet connection impedes this goal, the user's frustration might lead him to search for information in another resource [14]. Consequently, research has attempted to explore affective features of the e-commerce environments. For instance, some studies have investigated the impact of interface design (e.g. [2], [15]) and atmospheric cues such as background color [16], text color, and music [11] to understand and evoke customers' emotions, which in turn have an influence on their cognitive states, decision making and their appraisal of the e-retailer [2].

3 Motivation and Experience in E-commerce

Research findings support the assumption that motivation plays a critical role in user's experience [17]. There are a number of studies that have reported two types of motivation for online shopping: recreational and task-oriented motivations (e.g. [17, 18]). There are situations that consumers shop because of the hedonic values such as fun, pleasure, fantasy, escapism or, in other words, the experiential goal of shopping. In this case, if the retailer could induce positive affect in customers by providing tailored content; this would lead to a positive perception of a company and its services [19]. On the other hand, task-oriented consumers shop based on their utilitarian goals; for example, to acquire items effectively and efficiently. Table 1 summarizes a few studies to show to what extent task-oriented and recreational motivations can result in different shopping outcome, shopping experience, consumer involvement and product browsing.

Table 1. Two shopping motivations and characteristics.

Objective	Shopping outcome	Shopping experience	Consumer involvement	Product browsing
Task-oriented	Consumers visit stores to purchase required products or obtain information [20].	Shopping is determined as a task or a rational and effective decision [21].	“Cognitive involvement”, such as giving more attention to the product’s features [11].	Task-oriented consumers probably browse fewer products than the recreational shoppers [22].
Recreational	Consumers visit stores to obtain gratification or pleasure from the visit per se [20].	Shopping is not a mission or boring task. It’s based on experiential and emotional motives [21].	“Affective involvement”, such as tendency to get pleasure of the shopping experience [11].	Recreational consumers probably browse more products than the task-oriented shoppers [22].

4 Modeling User Experience in E-commerce

4.1 S-O-R model

Many studies have applied the Stimulus-Organism-Response (S-O-R) model of [23] to assess the effect of the web-based stimuli on the online customers’ behaviors and consequently on their emotional states of pleasure and arousal (e.g. [11], [12], [24]). As stated by the S-O-R model, an environmental stimulus (S) incites user’s internal affective appraisal (O), which in turn leads to the user’s reaction or response (R). Within a website, signs, symbols, artefacts, ambient conditions, space and function are reported as stimuli [24]. Research has also observed that computer related events are not essentially different from other stimuli, they cause physiological changes and in turn these changes are expressed as level of arousal and manifest clues for valence [15].

4.2 Proposed E-commerce UX Model

According to [25], there are two types of characteristics in e-commerce: emotional thinking and rational thinking. For instance, looking for convenience and quickness in the process of searching, finding and shopping, accessibility of a variety of products and low prices [26] were regarded as the utilitarian attributes. Enjoyment and excitement resulting from online shopping, the searching process of new, unusual products and models, an experience of adventure, releasing stress and depression, and forgetting problems (e.g. [27]) were considered as the emotional aspect of e-commerce. Additionally, research has suggested that the motivation of shopping mediates the

effect of arousal induced by the store environments on the pleasantness of the store visit [20].

Accordingly, we borrowed the theory of shopping motivation and its effects on shopping behaviors in stores and adopted the S-O-R model on web environments to propose that the motivations of e-commerce can influence user experience by inducing different emotional states. Our research model is presented in Fig. 1.

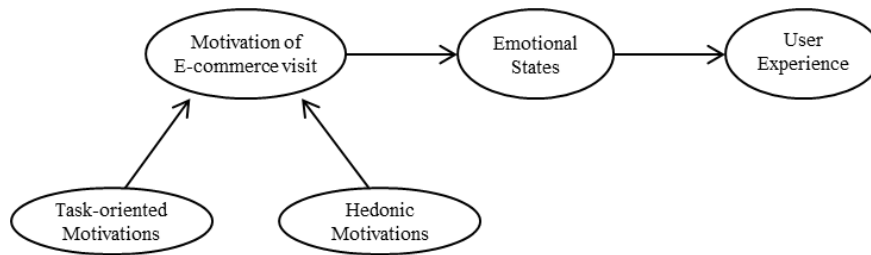


Fig. 1. The proposed research model

5 Exploratory Study

5.1 Method

Participants. To explore the relationship between customers' motivation and their affective state, we conducted 12 semi-structured interviews. Participants were recruited via personal email-invitation and they were asked to participate in this interview only if they have had a recent experience with an e-commerce website. All the participants volunteered to participate in this study and referred to their most recent experience within the past 10 days of the interview time. They were between 20-35 years old, 7 female and 5 male and all university educated (from bachelor to PhD degree).

Procedure. The interviews were carried out in English and performed through 8 face-to-face meetings and 4 Skype calls (one participant was from Australia and 3 of them were from the United States, therefore face-to-face meetings were financially not possible). In both cases (Skype and face-to-face) the same procedure was followed and the interview was audiotaped. The interviewees were asked to revisit the e-commerce website that they had used most recently, reflecting on their experience and repeating it retrospectively. Participants were asked to respond to the following questions:

- What type of product or service were you looking for?
- What was your motivation for this e-commerce visit and do you consider it as being recreational or task-oriented? (The interviewer gave examples of the two types of motivation to the interviewees.)
- What was your emotional status before and after entering the website?

- What was your emotional status after finishing your visit?
- Can you tell me what emotions you felt while you were visiting the website and the reasons behind them?

In addition, other information such as product price and participants' suggestions to improve the quality of their experience were collected during the interviews. The audio recordings were transcribed right after each interview.

5.2 Results and Discussion

To understand the relationship between emotion and motivation a list of emotion words that were verbalized by the interviewees during, before and after their e-commerce visit, was identified. Then according to each participant's motivation of their visit, each emotion word was linked to either hedonic or task-oriented. In addition, 5 HCI researchers rated each emotion word based on valence (being positive/negative) and on a 5-point-scale (ranging from calm to excited) to indicate the intensity of arousal. The average value of the arousal ratings was computed as the intensity of the emotion word. To analyze valence, each positive rating was assigned to 1 and negative rating to -1. If the average value was between -0.5 and 0.5, that emotion word was rated as Ambiguous. The only rated ambiguous emotion word was 'surprised'; a finding consistent with that of the previous research [28] (see Table 2 for details of the results). In addition, by looking at the emotion word list produced in this study, we observed that 9 emotion words were common in other similar research [28]. Moreover, a closer observation of the results suggested that those participants, who reported their motivation as hedonic, described their experience as emotional excitement (e.g. "impulsive shopping is exciting), curiosity (e.g. "I wanted to experience the website and see what is my next step") and boredom (e.g. "looking for fun", "to improve my mood"). On the other hand, participants who wanted to do the purchase as quickly as possible and with straightforward actions (as a task and having no recreational goal) did not assess their experience with pleasure and evaluated it as neutral, confused (e.g. "seeing so many options") and stressed (e.g. "money is stressful"). This result implies that the motivation of the customer influences emotional experience, which is consistent with the literature [20].

5.3 Limitations

There are several limitations related to the results and implications of this work. First of all, this study was exploratory with the aim to verify the research question and to gain insight for the future work. Secondly, the number of participants is too small to draw a solid conclusion. Thirdly, studying memorized emotions and experiences is very challenging due to the reason that they are prone to change, fade or get rebuilt according to the characteristics of the situated context [29], which results in biased conclusions. Lastly, the reported emotions were the interviewees' subjective evaluation of their internal states. Thus the interpretation could be inaccurate because retrospective self-reported emotions differed from the emotions felt at the moment they were elicited. In addition, the data of this study were captured through semi-structured

interviews whereas the validity and reliability of the implications should have been consolidated by applying other research methods such as qualitative and quantitative surveys.

Table 2. List of emotion words were verbalized by the interviewees when they repeated their last e-commerce experience.

Emotion word	Arousal (1-5)	Valence	Motivation	Time-slot of the emotion: Before /Within / After
Annoyed/ Irritated	4	Negative	Goal/Hedonic	Within
Anxious/ Distressed	3.8	Negative	Goal	Within
Bored	1.8	Negative	Hedonic	Before/ Within
Comfort	2	Positive	Hedonic	Within
Confused	3.2	Negative	Goal/Hedonic	Within
Curious	3	Positive	Hedonic	Before/ Within
Disappointed	2.6	Negative	Goal/Hedonic	Within
Excited	4.4	Positive	Hedonic	Before/Within/ After
Frustrated	4.2	Negative	Goal	Within
Happy	3.6	Positive	Goal	After
Indecisive	2.2	Negative	Hedonic	Before
Insecure	2.8	Negative	Goal	Within
Liked	2.8	Positive	Goal	Before
Neutral	1.4	Neutral	Goal	Before/ Within
Pleased	2.8	Positive	Goal	Within
Proud	3.2	Positive	Goal	Within
Relieved	3.4	Positive	Hedonic	After
Satisfied	3	Positive	Hedonic	After
Not satisfied	2.2	Negative	Hedonic	After
Secure	2.2	Positive	Goal	Before/ Within
Stressed	3.6	Negative	Goal	Before/ Within
Surprised	3.4	Ambiguous	Goal	Within
Trust	2.2	Positive	Goal	Within

6 Conclusion and Future Work

Empirical findings of our pilot study suggest that emotion as a factor of UX influences customers' online retail behaviors and the types of emotions experienced were mediated by customers' motivations. Therefore, it could be concluded that users' experience is mediated by users' motivation of their online commerce visit. In addi-

tion, according to [30] if we had a clearer understanding of how different motivational perspectives influence the use and appraisal of interactive products, we could create design rules for different circumstances without the need of knowing the details of the situation. Thus, in this study we endeavored to understand the effects of motivational orientation on the course of interaction by exploring the relationship between emotions and motivations. In addition, considering motivation as an antecedent of UX can help us obtain a more thorough understanding of this notion. Our future research will be carried out to substantiate our current findings by applying physiological measurements and subjective methodologies to evaluate users' affective states and motivations in live experiences.

References

1. European Online Retail Forecast, 2012 to 2017, <https://www.forrester.com>
2. Porat, T., Tractinsky, N.: It's a Pleasure Buying Here: The Effects of Web-Store Design on Consumers' Emotions and Attitudes. *Human-Computer Interaction*, 27, 235–276 (2012)
3. Venkatesh, V., Agarwal, R.: Turning visitors into customers: a usability-centric perspective on purchase behavior in electronic channels. *Management Science*. 52, 367-382 (2006)
4. Law, E. L. C., Roto, V., Hassenzahl, M., Vermeeren, A. P., Kort, J.: Understanding, scoping and defining user experience: a survey approach. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pp. 719-728. ACM (2009)
5. Zhang, P. a., Li, N.: The importance of affective quality. *Communications of the ACM*. 48, 105-108 (2005)
6. Hassenzahl, M., Tractinsky, N.: User experience-a research agenda. *Behaviour & information technology*. 25, 91-97 (2006)
7. Petrie, H., Harrison, C.: Measuring users' emotional reactions to websites. In *CHI'09 Extended Abstracts on Human Factors in Computing Systems*. 3847-3852. ACM. (2009)
8. McCarthy, J., & Wright, P.: Technology as experience. *J. Interactions*. 11, 42-43 (2004).
9. Hassenzahl, M., Diefenbach, S., Görtz, A.: Needs, affect, and interactive products—Facets of user experience. *Interacting with computers*. 22, 353-362 (2010)
10. Tucker, M. L., Sojka, J. Z., Barone, F. J., & McCarthy, A. M.: Training tomorrow's leaders: Enhancing the emotional intelligence of business graduates. *J. Education for Business*, 75(6), 331-337 (2000)
11. Ding, C. G., Lin, C. H.: How does background music tempo work for online shopping? *Electronic Commerce Research and Applications*. 11, 299-307 (2012)
12. Mazaheri, E., Richard, M. O., & Laroche, M.: The role of emotions in online consumer behavior: a comparison of search, experience, and credence services. *J. Services Marketing*, 26(7), 535-550 (2012)
13. Clore, G. L., Schwarz, N., & Conway, M.: Affective causes and consequences of social information processing. *Handbook of social cognition*, 1, 323-417 (1994)
14. Stickel, C., Ebner, M., Steinbach-Nordmann, S., Searle, G., Holzinger, A.: Emotion detection: application of the valence arousal space for rapid biological usability testing to enhance universal access. In *Universal Access in Human-Computer Interaction. Addressing Diversity* (pp. 615--624). Springer (2009)
15. Ward, R. D., Marsden, P. H.: Physiological responses to different web page designs. *International Journal of Human-Computer Studies*. 59, 199-212 (2003)

16. Cheng, F. F., Wu, C. S., Yen, D. C.: The effect of online store atmosphere on consumer's emotional responses--an experimental study of music and colour. *Behaviour & Information Technology*. 28, 323-334 (2009)
17. O'Brien, H. L.: The influence of hedonic and utilitarian motivations on user engagement: The case of online shopping experiences. *Interacting with Computers*, 22, 344-352 (2010)
18. Bui, M., & Kemp, E.: E-tail emotion regulation: examining online hedonic product purchases. *International Journal of Retail & Distribution Management*. 41, 155-170 (2013)
19. Holzwarth, M., Janiszewski, C., Neumann, M. M.: The influence of avatars on online consumer shopping behavior. *J. Marketing*. 70, 19-36 (2006)
20. Kaltcheva, V. D., Weitz, B. A.: When should a retailer create an exciting store environment? *J. Marketing*. 70, 107-118 (2006)
21. To, P.-L., Liao, C., Lin, T. H.: Shopping motivations on Internet: A study based on utilitarian and hedonic value. *Technovation*, 27, 774-787 (2007)
22. Novak, T. P., Hoffman, D. L., Duhachek, A.: The influence of goal-directed and experiential activities on online flow experiences. *J. Consumer Psychology*. 13, 3-16 (2003)
23. Mehrabian, A., & Russell, J. A.: *An approach to environmental psychology*. the MIT Press (1974)
24. Froh, A., Madlberger, M.: The role of atmospheric cues in online impulse-buying behavior. *Electronic Commerce Research and Applications*. 12, 425-439 (2013)
25. Yeh, L., Wang, E. M. Y., Huang, S. L. A study of emotional and rational purchasing behavior for online shopping. In *Online Communities and Social Computing*. 222-227. Springer Berlin Heidelberg (2007)
26. Ariely, D., Simonson, I.: Buying, bidding, playing, or competing? Value assessment and decision dynamics in online auctions. *J. Consumer Psychology*, 13, 113-123 (2003)
27. Arnold, M. J., Reynold, K. E.: Hedonic shopping motivations. *J. Retailing*. 79, 77-95 (2003)
28. Petrie, H., Precious, J.: Measuring user experience of websites: think aloud protocols and an emotion word prompt list. In *CHI'0 Extended Abstracts on Human Factors in Computing Systems*. 3673-3678. ACM. (2010)
29. Law, E. L. C., van Schaik, P., & Roto, V: Attitudes towards user experience (UX) measurement. *International Journal of Human-Computer Studies*, 72(6), 526-541 (2014)
30. Hassenzahl, M., Schöbel, M., Trautmann, T: How motivational orientation influences the evaluation and choice of hedonic and pragmatic interactive products: The role of regulatory focus. *Interacting with Computers*. 20, 473-479 (2008)