



The role of atmospheric cues in online impulse-buying behavior



Arne Floh^{a,1}, Maria Madlberger^{b,*}

^a University of Surrey, Surrey Business School, Guildford, Surrey GU2 7XH, United Kingdom

^b Webster University Vienna, Berchtoldgasse 1, A-1220 Vienna, Austria

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ABSTRACT

This study extends a stimulus–organism–response (S–O–R) model to include impulse-buying behavior, which plays a vital role in electronic shopping but has not gained much attention in e-commerce research. Grounding our research in environmental psychology, we test the effects of virtual atmospheric cues on online impulse-buying behavior and spending, via a consumer survey. The study applies elaborated mediating variables (shopping enjoyment and impulsiveness) to develop a structural model linking three categories of atmospheric cues of an electronic store (content, design, and navigation) to approach behavior variables (impulse-buying behavior and expenditure). The results support the validity of the S–O–R model in the context of online impulse-buying behavior and show a significant positive effect of two dimensions of virtual atmospheric cues (design and navigation).

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1. Introduction

Since the beginning of electronic commerce (e-commerce), researchers in information systems (IS) as well as marketing have been investigating the extent to which findings from bricks-and-mortar retailing are applicable to the online shopping context. Starting with early studies (e.g., Alba et al. 1997, Li et al. 1999), e-commerce research has continued to refer to retail-specific issues, such as trust (Gefen et al. 2003, McKnight et al. 2002), hedonic and utilitarian shopping motivations (Childers et al. 2001), and consumer habits and values (Pahnila and Warsta 2010).

One important issue in bricks-and-mortar retailing that possesses significant implications for online shopping is atmospheric cues in an online shopping environment. The importance of environmental cues and store atmosphere in retailing has already been demonstrated in early studies (Baker 1986). For example, ambient, social, and design factors significantly influence perceived merchandise value and store patronage intentions (Baker et al. 2002). The environmental cues of a store include window displays, store layout, architecture, and background music (Mathwick et al. 2001). During the last few years, IS researchers have demonstrated the significance of the impact of store atmosphere on consumer behavior in the context of online retailing as well. In a seminal

study, Eroglu et al. (2003) tested a model looking at the effects of atmospheric cues on shopping attitudes and outcomes such as satisfaction and approach/avoidance behavior. Other studies are concerned with the impact of aesthetics (Cai and Xu 2011), background music (Ding and Lin 2012), and colors (Cheng et al. 2009) in online or electronic stores (e-stores).

A key outcome of atmospheric cues is the impulse purchase. Marketing research delivers ample evidence of the high relevance of impulse buying (e.g., Beatty and Ferrell 1998, Kollat and Willett 1969, Rook 1987, Wood 1998). Impulse buying covers a significant portion of retail turnover. For example, in a recent survey of 1047 British consumers, 76% admitted to purchasing groceries on impulse, 57% to purchasing mid-cost products (e.g., fashion) on impulse, and 28% to purchasing high-cost products, such as electronics or furniture (Shoppercent 2012). Similar figures are reported for the United States. A survey of 2273 consumers showed that 67% of US adults had bought products on impulse during the previous month. 80% of the respondents had made impulse purchases in the previous year, two thirds of whom stated that they regretted their impulse purchases (NEFE 2010).

With the growing relevance of online shopping, a deeper understanding of impulse buying on the Internet is becoming increasingly necessary. In 2011, the online retail sector achieved total revenues of USD 530.2 billion worldwide. This corresponds to an increase of 15.4% in the period 2007–2011 (Marketresearch.com 2012). In the United States, online retailing reached a turnover of USD 176.2 billion in 2010. According to Forrester Research, a 10% compound annual growth rate is expected over the coming years,

* Corresponding author. Tel.: +43 1 269 92 93 52; fax: +43 1 269 92 93 13.

E-mail addresses: a.floh@surrey.ac.uk (A. Floh), madlberger@webster.ac.at (M. Madlberger).

¹ Tel.: +44 (0)1483 689185.

meaning that online retailing turnover is forecasted to reach almost USD 280 billion in 2015 (Mulpuru et al. 2011). Although reliable figures on online impulse purchases are not yet available, the fact that popular online shopping devices, such as recommender agents, stimulate impulse purchases (Hostler et al. 2011) underscores their high practical relevance.

Marketing research has revealed that store characteristics act as an important trigger for impulse purchases (Stilley et al. 2010a, 2010b). A study based on more than 500 in-depth shopper interviews revealed that in-store stimuli led to impulse purchases at the check-out counter, generating USD 5 billion (Mogelonsky 1998). Additionally, Donovan et al. (1994) concluded that store atmosphere can substantially increase unplanned shopping time and spending in the context of bricks-and-mortar retailing.

Despite ample findings on the impact of store characteristics on impulse buying in bricks-and-mortar retailing, and a growing body of knowledge in the IS literature on online impulse buying (e.g., Parboteeah et al. 2009, Verhagen and van Dolen 2011, Wells et al. 2011), we have identified two research gaps in this context.

First of all, the majority of extant studies on online impulse purchases analyze triggers of online impulse buying based on theories that stem from IS research. For example, Zhang et al. (2006, 2007) investigated online impulse buying through the lens of the technology acceptance model (TAM) (Davis 1989). Other researchers have investigated the role of environmental cues on online impulse buying, mainly through website quality characteristics (e.g., Adelaar et al. 2003, Wells et al. 2011), thus paying attention to stimuli related to the atmosphere of the e-store.

For the analysis of stimulus-driven online consumer behavior, several researchers have drawn on environmental psychology theories (Dahlén and Lange 2002; Deng and Poole 2012; Huang 2003a,b; Li et al. 2011). To our knowledge only two studies (Parboteeah et al. 2009, Wells et al. 2011) have applied environmental psychology in the online impulse-buying context, and Parboteeah et al. (2009) alone investigated the comprehensive stimulus-organism-response (S-O-R) model of Mehrabian and Russell (1974), which is one of the key theories on environmental cues and store atmosphere in marketing research. In the context of the research at hand, the S-O-R model was recently applied successfully to research on impulse-buying behavior in bricks-and-mortar retailing (Chang et al. 2011) as well as in MIS research on general online purchasing behavior (Animesh et al. 2011).

Our study integrates insights from various disciplines and is based on consumer behavior, IS research, and psychology literature. The interdisciplinary nature of this research goal makes this comprehensive approach necessary. In online purchasing settings, S-O-R theory has turned out to be an appropriate theoretic lens through which to understand how Web-based stimuli influence online consumer behavior (Dahlén and Lange 2002; Deng and Poole 2012; Huang 2003a,b; Li et al. 2011). The results of these studies demonstrate that the implications of S-O-R theory for store-based shopping are applicable to online shopping as well. However, since there are substantial differences between store-based and online shopping (Dahlén and Lange 2002), findings from the former context regarding a particular behavior (here impulse buying) cannot be transferred directly to the latter setting.

Against the background of these challenges, we develop a research model that conforms to the findings from both IS research that applies the S-O-R theory and store-based impulse-buying literature in order to examine the extent to which these findings can be condensed into a more comprehensive S-O-R model on online impulse buying.

We apply the S-O-R model to the online impulse-buying context in order to analyze the role atmospheric cues play in online impulse purchases. Our work is similar to that of Donovan et al. (1994) and Chang et al. (2011), who analyzed the effect of the store

environment on impulse-buying behavior in the context of bricks-and-mortar retailing. We build our research model on the structure provided by Donovan et al. (1994), who distinguished between environmental states, emotional states (organism), and responses, and investigated actual purchasing behavior instead of purchase intentions. Chang et al. (2011) provide the conceptual basis for our analysis of impulse-buying behavior. As our study relates to impulse buying in an online environment, a conceptualization of stimuli is necessary. For this purpose, we draw theoretically on the work of Eroglu et al. (2003), who transferred the concept of store atmosphere into the virtual world. Finally, the topic of our study is closest to the research by Parboteeah et al. (2009). Our research extends the findings of that study by applying more specific variables regarding the atmospheric cues of an e-store. While Parboteeah et al. (2009) distinguished between task-relevant and mood-relevant cues as stimuli and applied the urge to buy impulsively as the dependent variable, we add two impulse-buying behavior variables as response variables. With our study we therefore try to overcome the limited findings on the role virtual atmospheric cues play in impulse-buying behavior by using the S-O-R model as a theoretical framework.

The second research gap refers to the focus on the economic importance of purchasing on impulse, that is, the impact of impulse-buying behavior on the actual amount spent impulsively. As this figure is directly related to an online shop's turnover, its antecedents are important factors for the operators of online shops. The abovementioned study by the National Endowment for Financial Education (NEFE 2010) showed that consumers who had purchased products on impulse during the previous year spent an average of USD 304.40 on impulse purchases they regretted afterwards. This figure stresses the significance of the amount spent impulsively. The relevance of the absolute amount spent is further confirmed by Jeffrey and Hodge (2007), who investigated the role of mental accounting in online impulse buying. While their study highlights the importance of the amount spent, it does not consider the amount spent impulsively as a dependent variable.

Following the S-O-R model, we develop a research model that includes the environmental characteristics of an e-store. Consistent with the typology of Baker (1986) and Eroglu et al. (2003), we consider three atmospheric cues, namely, e-store content, e-store design, and e-store navigation, as stimuli. Based on the findings of e-commerce research, we operationalize the organism as shopping enjoyment, impulsiveness, and browsing. The responses we consider are impulse-buying behavior and expenditure on impulse purchases. The results of the quantitative survey of online shoppers suggest that the atmospheric cues of an e-store in general, and the design and ease of navigation in particular, positively influence online impulse-buying behavior and expenditure. In contrast, the analyses reveal a non-significant, negative effect of the availability of product information. Of particular interest for both marketers and academics, the dominant mediator in the proposed chain of effects is the construct of shopping enjoyment.

With the research at hand, we seek to contribute to a better understanding of the antecedents of impulse buying in an online-shopping setting. Our detailed analysis of variables that are proven to be significant drivers of store-based impulse purchases online thus complements the findings of Parboteeah et al. (2009) and better explains how online stimuli influence consumers' affects during shopping trips, ultimately resulting in impulse purchases. The paper is organized as follows: In the next section, we provide a literature review on the S-O-R model and extant findings on online impulse buying. The subsequent section presents the research model and the development of hypotheses. Section 4 discusses the research methodology of the quantitative survey. Section 5 presents the results and is followed by a discussion of the findings and the conclusion.

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