

HEDONIC MOTIVATIONS IN THE WEB SITE: EFFECTS OF MUSIC ON CONSUMER RESPONSES IN AN ONLINE SHOPPING ENVIRONMENT¹

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Abstract: Because of the increasing competitive retail industry environment, retailers must be certain that their stores are up-to-date and suggest an image that is appealing to their target markets. In fact, one of the most significant features of the total product is the *place* where it is bought or consumed. In some cases, the place, or more specifically the *place atmosphere*, is more influential than the product itself in the purchase decision. A considerable body of literature has been accumulated on atmospheric effects in traditional stores; however, the impact of these factors in online retail environments has not yet been well documented. Some studies posit that although the instrumental qualities or utilitarian elements of online shopping (e.g. ease and convenience) are important predictors of consumers' attitudes and purchase behaviours, the hedonic aspects of the web medium could play an equally important role in shaping these behaviours. This study analyzes the influence of a hedonic atmospheric cue, specifically music, on shoppers' cognitive, emotional and behavioural responses in an online apparel shopping environment. A between-subjects experimental design is used to test our hypotheses. In addition we developed an integrated methodology that allows the simulation, tracking and recording of subjects' behaviour within an online shopping environment under an atmospheric condition: the music.

1 INTRODUCTION

The physical environment of traditional brick-and-mortar retailers plays an important role in influencing consumer attitudes and behaviours. However, not much systematic research attention has been given to the nature and effectiveness of online retailing, and specifically, to the role of the online environment characteristics in shaping consumer responses. Some work can be found related to the nature and the features of the medium and users' processing of information in the virtual world, neglecting the study of the influence atmosphere cues on consumer responses. Moreover, given both the increasing number of online stores and shoppers and the importance of the study of atmospheric cues in brick-and-mortar retail, retailers must pay a special attention to online stores design.

Our main objective in this research is to analyze the influence of a hedonic atmospheric cue on shoppers' cognitive, emotional and behavioural responses in an online apparel shopping environment. Specifically, we will consider the *music* as hedonic variable of web atmosphere. A between-subjects experimental design is used to test our hypotheses. A web site and a tracking behaviour methodology for a fictitious retailer were developed. Finally, with this research we also expect to derive practical implications to provide retailers with more information about their consumers' preferences in an online shopping environment.

2 BACKGROUND LITERATURE

The concept of *atmospherics*, used by Kotler (1973-1974) "to describe the effort to design buying

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environments to produce specific emotional effects in the buyer that enhance his purchase probability", is receiving an increasing managerial and research attention both in traditional and online retail contexts (Eroglu et al., 2003). In general, atmosphere could be defined "as a collection of atmospheric cues" (Dailey, 2002).

2.1 Brick-and-mortar atmospherics

Much empirical work within this topic has examined specific atmospheric cues and their effects on shopper responses. For instance, researchers have focused on cues such as **music** (Milliman, 1982; Hui et al., 1997; Yalch and Spangenberg, 2000); lighting, color, cleaning, the scent, etc. Most of these works are focused in the *Mehrabian-Russell Affect Model* (1974), which uses a Stimulus-Organism-Response (S-O-R) paradigm within an environmental psychology context. The S-O-R paradigm proposes that cues within an environment cause behavioural responses (i.e. approach or avoidance) to the environment through altering subject affect, specifically, pleasure, arousal and sometimes dominance.

2.2 Webmosphere

Web atmospheric is defined by Dailey (2002) as "the conscious designing of web environments to create positive effects (e.g., positive affect, positive cognitions, etc.) in users in order to increase favourable consumer responses (e.g. site revisiting, browsing, etc.). When marketers design web interfaces in order to entice consumers, they are using web atmospherics".

To explain the influence of the webmosphere

(Childers et al., 2001) on consumers, the major online atmosphere research is outlined in table 1.

Within the S-O-R paradigm, in the context of online retailing, stimulus is defined as "the sum total of all the cues that are visible and audible to the online shopper" (Mehrabian and Russell, 1974). We include the auditory dimension because it has become a standard feature on computers in the last years. Nevertheless, the online retail environment lacks of some of the dimensions present in a real environment, such as temperature, smell, and textures (three of the five sensory appeals) which are defined by Baker (1986) and Bitner (1992). However, it possesses some other properties such as flexibility across time and space.

As traditional environment, to illustrate the influence of web atmospherics on consumers, most authors use the Stimulus-Organism-Response paradigm (Eroglu et al., 2001, 2003; Dailey, 1999).

The traditional store designer's ability to appeal to all the shopper senses through a complex combination of ambient, structural, social, and aesthetic elements has now been constrained to a predominantly visual appeal through the screen. Given that the accepted classifications of the traditional store atmospherics cannot be entirely applicable to this context, some authors suggest an alternative taxonomy. Eroglu et al. (2001) classify the environmental characteristics of the virtual store in two general categories: high and low task relevant cues (see table 1).

3 HYPOTHESES

Taking into account all this previous research streams, our research is focused in the study of the

Table 1: Main literature about web atmospherics

RESEARCHERS	RESEARCH
Dailey (1999)	Stimulus-organism-response paradigm: Atmospheric cues influence consumers through altering their cognition and affect, which influence their consumer behaviour towards the online shop
Eroglu, Machleit and Davis (2001)	
Childers, Carr, Peck and Carson (2001)	Attitudinal model: While the instrumental aspects of the new media are important predictors of online attitudes, hedonic aspects of the new media play at least an equal role
Dailey (2002)	Influence of restrictive navigation cues as specific online atmosphere variable
Koernig (2003)	Increasing the tangibility of cues in the e-scape elicits more positive evaluations of the service and reduces the perceived risk associated with the service and subsequently leads to a more positive response
Yoh, Damhorst, Sapp and Laczniak (2003)	Theory of reasoned action and innovation adoption theory: The importance of prior experience with the Internet and with in-home apparel shopping in predicting apparel buying intention through the Internet indicate that experience with subcomponents of the innovative process facilitate adoption of the new process
Eroglu, Machleit and Davis (2003)	Online store atmosphere comprised of high task-relevant cues (all the site descriptors that appear on the screen which facilitate and enable the consumer's shopping goal attainment) and low task-relevant cues (site information that is relatively inconsequential to the completion of the shopping task, such as, colour, music...). Increasing the atmospheric qualities of the online store website increases the level of pleasure felt by the shopper.

influence of music, as a hedonic aspect of web medium, on online consumer responses (internal and behavioural).

According to Oakes (2003), managers suggest that atmospheric music affects the following aspects: (1) according to the beat of the music the atmospheric music influence customers to eat (e.g. Caldwell and Hibbert, 1999...); (2) affects customers' perceptions of the atmosphere of a store (e.g. Hui et al., 1997...); (3) must cater to the preferences of different age segments (e.g. Yalch and Spangenberg, 1990...); (4) can distract customers from cognitive tasks (e.g. Park and Young, 1986...); (5) can facilitate interaction between customers and staff (e.g. Dube et al., 1995...); (6) can drive customers away from an establishment depending on if they like it (e.g. Donovan and Rossiter, 1982...); (7) makes time pass more quickly when it is enjoyable (e.g. Wansink, 1992...); (8) can convey an upscale or downscale image depending on the specific genre or format (e.g. Areni and Kim, 1993...); (9) can make customers stay longer than they otherwise would (e.g. Milliman, 1986...); (10) eliminates unacceptable silences (e.g. North et al., 1999...).

The new media represent an important opportunity for marketers (Alba et al., 1997) in order to offer to their consumers a pleasant shopping experience. Hirschman and Holbrook (1982) describe consumers as either "problem solvers" or in terms of consumer seeking "fun, fantasy, arousal, sensory stimulation, and enjoyment". Both visions have been represented in a retail traditional context in order to compare the shopping functional perspective (e.g. Sherry et al., 1993...) versus the shopping enjoyable perspective (e.g. Babin et al., 1994...).

In an online context, this twofold characterization of motivations is consistent with the adoption of interactive shopping behaviour. Creating a more enjoyable environment may require the use of more powerful web languages, and the inclusion of images, video, colour, humour, sound, music, games, animation, and all of the other interactive aspects that could define an enjoyable experience. A technology oriented perspective that attempts to treat media shopping as cold information systems, rather than immersive, hedonic environments, is likely to be misguided, mainly for products with strong hedonic attributes, as can be the case of apparel (Childers et al., 2001).

Music or sounds are considered as *low task-relevant cues* (Eroglu et al., 2001, 2003) because they do not directly affect the completion of the task, although they can create an atmosphere that has the potential to make the shopping experience more

pleasurable. So, we suggest the following hypothesis:

H1: The users who are exposed to an online shopping environment with music will show affective responses more positive than those who are exposed to an online shopping environment without music.

Eroglu et al. (2001) found that, within online environments, *low task-relevant cues* affect positively users' cognitive states. Because that concept includes several kinds of online atmospheric cues, our intention is focused in the analysis of a specific cue (i.e. music) and whether it affects users' cognitive states (attitudinal process and learning/knowledge). So, regarding cognitive responses we propose the following hypothesis:

H2: The users who are exposed to an online shopping environment with music will show cognitive responses more favourable than those who are exposed to an online shopping environment without music.

In online environments, satisfaction has been tested by Eroglu et al. (2003) as a behavioural response which includes measurement variables relating to loyalty and satisfaction toward web site. However, literature found that behavioural responses (e.g. loyalty) are consequence of satisfaction, both in brick-and-mortar and in online environments (Bigné and Andreu, 2004; Zeithaml et al., 1996; Flavián et al., 2004). In fact, Vanhamme (2000) accepts customer's satisfaction as "a relative psychological state which is a result of purchase/consumption experience". In spite of this conceptual difference, the most of works obtain that store atmosphere affects satisfaction and, in turn, behavioural responses (Eroglu et al., 2001, 2003; Bigné and Andreu, 2004; Childers et al., 2001...). Thus, we propose the following hypothesis:

H3: The users who are exposed to an online shopping environment with music will show more satisfaction than those who are exposed to an online shopping environment without music.

Finally, regarding behavioural responses we proposed the following hypothesis, attending two groups of variables analyzed (loyalty and approach/avoidance behavioural). Specifically, as regards users' loyalty toward online store after their visit in the web site is measured by Eroglu et al. (2003) as satisfaction measurement. However, according to above works, loyalty is considered as the consequence of the satisfaction (Zeithaml et al., 1996; Bigné and Andreu, 2004; Flavián et al., 2004...). In spite of this conceptual difference, the most works posit that atmospheric cues (specifically, low-task relevant cues according to Eroglu et al., 2001, 2003) affect positively loyalty toward store, although this relationship is mediated by consumers'

internal states. Taking everything into account, we suggest the following hypothesis:

H4: The users who are exposed to an online shopping environment with music will show a loyalty level toward the online store bigger than those who are exposed to an online shopping environment without music.

As will global studies about store atmosphere, some works found similar approach/avoidance responses when supermarkets were exposed to different tempo of background music (Milliman, 1982; Oakes, 2003...). Within the online shopping context, the model proposed by Eroglu et al. (2001, 2003) posits similar approach/avoidance behaviours depending on the perceived store environment and the mediating effects of individual traits and internal states. They analyzed whether the online store information and the low-task relevant cues facilitate or impede the attainment of shopping goals and, in turn, whether the online shopper exhibited positive or negative behaviours toward the particular web site. Finally, they obtained that as is produced a rise of atmospheric cues (i.e. high and low task relevant cues), the approach responses are also increased. Because our intention is focused on study of specific atmospheric cue (i.e. music), we suggest the following hypothesis:

H5: The users who are exposed to an online shopping environment with music will show more approach responses than those who are exposed to an online shopping environment without music

4 A MODEL OF ONLINE ATMOSPHERIC EFFECTS

We propose a initial model based on the S-O-R paradigm suggested and empirically tested by Eroglu et al. (2003), as it is shown in figure 1. In our model, we introduce three modifications relating to the Eroglu et al. (2003) model: (a) introduction of cognitive variables (learning and knowledge about the web site) to complement the *cognitive states* described by these authors in their model, (b) recognition of satisfaction as an internal state which affects behavioural responses, and (c) introduction of loyalty variable as additional behavioural response.

4.1 Design of the experiment

A between-subjects experimental design was used to test the hypotheses above. In order to eliminate the effects of prior experience with a retailer, a fictitious store named *e-fashion*, was made for our research.

That online shop offered fashion apparel for women and men. The content of online shop is based on a homepage (Nielsen, 2001; Schneiderman, 1998) which includes the same links and web sites as other online apparel stores (e.g. 'our company', 'our services', 'novelties'...).

Within this frame we include music and a non-music condition. Music is considered as hedonic dimension (Childers et al., 2001) and a "low task-relevant" (Eroglu et al., 2003) because it neither facilitate nor enable the consumers' shopping goal attainment. The music is relatively inconsequential to the completion of the shopping task and specifically, it is considered a hedonic aspect which entices the consumer's affective, cognitive and behavioural responses.

As a result, two web sites were defined, although the content was same across both sites. These different apparel stores representing each of the experimental conditions were created for this experiment by an experienced Web-site designer.

Finally, the web-based tool developed for this research included an automatic tracking process based on e-agent software to track and record all *click-throughs* and times related with the browsing behaviour during the experiment.

4.2 Sample and procedure

The final sample consisted of 70 people randomly assigned to the experimental groups. All members of group were undergraduate students due to convenience of researcher. All people were asked by the same questionnaire. All groups were exposed same environment conditions (date, place, space...).

After subjects finish the task they were complete a final on-line questionnaire which includes measures of satisfaction, attitude, emotional responses, behavioural responses and Web familiarity questions. A pretest was conducted to ensure that subjects' responses give us different perception by inclusion of the above atmospheric manipulations.

4.3 Measurement of variables

According to Eroglu et al. (2003), we considered as independent variables the affective and cognitive internal states and behavioural responses to the online shopping experience. The *affective responses* were measured with the Mehrabian and Russell (1974) pleasure-arousal-dominance (PAD) scale. This scale is widely used in studies of environmental psychology and, although it is meant to represent the dimensions of emotional response rather than a complete typology of emotional responses, its

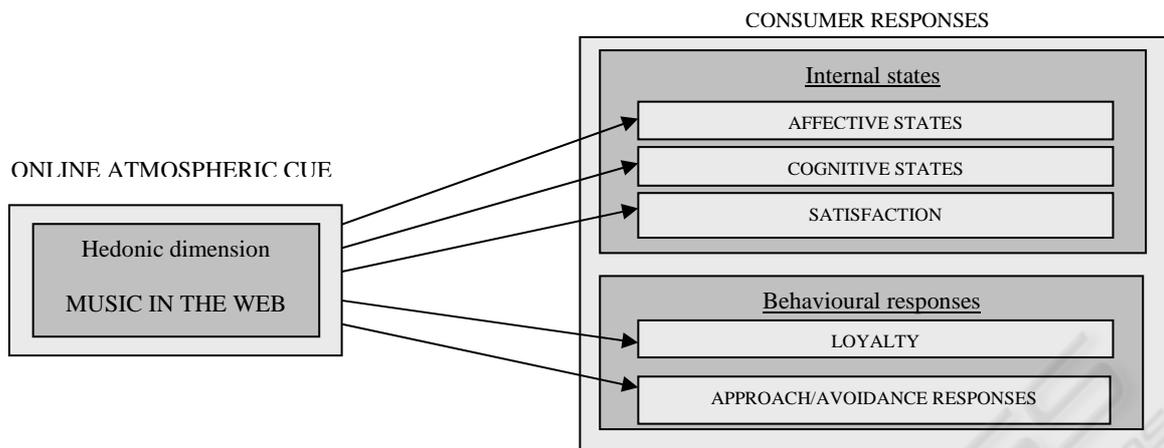


Figure 1: Influence of web music on consumer responses in an online shopping environment

simple structure and widespread use made it the appropriate choice in this context (Eroglu et al., 2003).

Thus, *pleasure* and *arousal* were measured with the five-point semantic differential items (e.g. unhappy/happy; excited/calm...) (Sherman et al., 1997; SUMI scale). *Dominance* was not included Russell (1979) posits that pleasure and arousal adequately capture the range of appropriate emotional responses. However, according to Eroglu et al. (2001), in the online retail context, it is possible that shoppers choose online rather than traditional retail outlets for the increased control over the shopping situation. Therefore, online users may feel a decreased level of dominance in situations where download times are slow, when there is no way to contact the retailer for more information, when the site is difficult to navigate, or when links are missing or inactive. Nevertheless, Eroglu et al. (2003), after testing that variable, did not include it because reliability was low.

To test *cognitive states*, we have included two dimensions: The interpretation of information provided on the screen by online consumer (i.e., *learning and knowledge* of web site) and the attitudinal process (Eroglu et al., 2003). In forming these *attitudes*, the online shoppers address questions such as whether it is negative/positive shopping alternative for them...(Eroglu et al., 2003; Childers et al., 2001).

Satisfaction, as other internal variable, was measured with five-point Likert-format items scale (e.g. "I am satisfied with the navigation across this web site"...) (Cristóbal, 2002; SUMI scale; Flavián et al., 2004).

The dependent variables used to test the *behavioural responses* were loyalty and approach/avoidance responses. *Loyalty* was measured by a Likert scale (five points) including

the questions like "I would probably go back to the site" (Eroglu et al., 2001, 2003; Sherman et al., 1997; Bigné and Andreu, 2004; Dailey, 2002). *Approach/avoidance responses* were measured by a Likert scale (five points) including aspects such as "I would have spent more money". Moreover, the web-based methodology allows us to track responses about time and money spent and the products that the subject finally bought (Sherman et al., 1997), which will be called by us as *real shopping outcomes*.

5 RESULTS

To test our hypotheses we used multivariate analysis of variance (MANOVA). We have used the Wilks' Lambda static to test the global significance (Hair et al., 1999; Iacobucci, 1994). We consider an alpha level of 0,1 as significance level to test our hypotheses.

On the other hand, we evaluated the observed power of the test and, according to Hair et al. (1999), we established a lowest power level (0.8). Moreover, it is necessary to notice size effect in the different contrast. This effect was measured by *Eta Squared* statistic (Iacobucci, 1994).

5.1 Affective variables: Pleasure and arousal

The multivariate test (see table 2) shows us that the consumers who were exposed to online shopping environments with music do not show significant differences in affective responses to those who were exposed to an online shopping environment without music ($\alpha > 0.1$). Consequently, the hypothesis H1 is rejected. Curiously, in the individual analysis about

affective variables, users show more positive affective states in the shopping environment without music. It could be caused the kind of music was not to their liking (either too classic or too modern, either too fast or too slow...) and, in consequence, in general consumers felt annoyed with this atmospheric cue manipulated. Moreover, we have not included moderator variables (Eroglu et al., 2003; Dailey, 2002) in our model such as atmospheric responsiveness, involvement, perceived risk... These variables could affect to consumer responses and, consequently, cause significant differences between groups of people.

5.2 Cognitive variables

The multivariate test (see table 2) also shows us that subjects who were exposed to online shopping environments with music do not show significant differences versus the users who were not exposed to this atmospheric manipulation, concerning their cognitive responses ($\alpha < 0.1$). In consequence, the hypothesis H2 is rejected. In fact, after an individual analysis about each one of cognitive variables we have noticed that the questions relating to attitude show more significant differences between both groups ($\alpha < 0.1$) than learning and knowledge variables. This result is logical due to our analysis only is focused on study of hedonic dimensions. Moreover, another variable which could affect on consumer is the beliefs toward online apparel shopping. In fact, according to Yoh et al. (2003), consumers who have more positive beliefs about Internet apparel shopping have more positive attitude toward Internet apparel shopping than consumers who have less positive beliefs about it.

5.3 Satisfaction variables

The multivariate test (see table 2) shows us that subjects who were exposed to music show significant differences with subjects in the non-music condition ($\alpha < 0.1$). In fact, after individual analysis of satisfaction variables the results show us that consumer exposed to online environment with music answered that music is a factor which improves them the entertainment during shopping. Nevertheless, in an online shopping environment without music, consumer show more satisfaction during the navigation. In fact, involvement with apparel and perceived risk toward online apparel shopping are two moderator factors that affects to consumers' internal states (Eroglu et al., 2003) which have not been included in our model. Moreover, the users' cognitive and affective states also affect directly to satisfaction as intermediate

factors between atmospheric cues and shopping outcomes (Eroglu et al., 2001, 2003; Bigné and Andreu, 2004). Therefore, within this shopping environment in which involvement, perceived risk and others internal states affect on consumer, music could be an irrelevant aspect for the consumers and, consequently, it could not affect significantly to their satisfaction.

5.4 Loyalty variables

The multivariate test (see table 2) shows us that subjects who were exposed to online shopping environments with music show significant differences versus the users who are not exposed to this atmospheric manipulation, concerning their satisfaction ($\alpha < 0.1$). However, these results show us that consumers who were exposed to online shopping environments with music do not show a loyalty level toward the online store bigger than those who were exposed to an online shopping environment without music.

Consequently, the hypothesis H4 is rejected. In fact, one of the major factors that cause loyalty toward store, mainly in online environments, is the product's brand. In this kind of environments, brand loyalty is stronger than in traditional environments. Moreover, brand loyalty is bigger in the products with more sensory attributes (Cebollada, 2004). In our experiments used a fictitious brand (e-fashion) to prevent a possible brand loyalty effect. However, we think that it could have discouraged to users' purchase intention, independently of the existence or not of music in the online store.

5.5 Approach/avoidance responses

The multivariate test (see table 2) shows us that the users who were exposed to an online shopping environment with music show more approach responses than those who were exposed to an online shopping environment without music ($\alpha < 0.1$). Thus, the hypothesis H5 is accepted. Specifically, the variable "duration of visit" show significant differences between both groups. If duration of visit is longer, the probability of purchasing will be higher too and, obviously, it is positive for web marketers.

6 CONCLUSIONS

The major conclusion from this work is that online hedonic motivations influence on consumer's internal states and behavioural responses.

Table 2: Multivariate Tests: Internal states and behavioural responses

Variables	Wilks' Lambda	F	Significance
Affective	0,926	1,023	0,411
Cognitive	0,911	1,252	0,296
Satisfaction	0,854	2,193	0,066
Loyalty	0,899	3,751	0,029
Approach/ Avoidance responses	0,798	3,246	0,011

Most works of this issue have demonstrated the increasing the atmospheric qualities of the online store web site increase the level of pleasure felt by the shopper.

Moreover, it is demonstrated that this effect is moderated by some variables, such as involvement and atmospheric responsiveness (Eroglu et al., 2003), expectation and importance of control, magnitude of threat, reactance and flow (Dailey, 2002) and even, brand loyalty (Cebollada, 2004). In turn, these emotions and attitude influence positively on approach/avoidance behaviour (Dailey, 2002; Eroglu et al., 2003, 2001; Childers et al., 2001...), satisfaction (Eroglu et al., 2003) and loyalty toward store (Flavián et al., 2004...). Moreover, within online apparel shopping, psychological and social variables and prior experience with the Internet also affect to intention to purchase apparel through the Internet (Yoh et al., 2003).

7 LIMITATIONS AND FUTURE RESEARCH

We have not obtained completely significant results owing to several limitations. On the one hand, we only have focused this research on the analysis of direct relationships between online atmospheric cues manipulated and internal states and behavioural responses. It is important limitation because, according to the literature, the relationship between web atmospheric and behavioural responses is not direct. The internal states mediated this relationship. Moreover, we have not considered any moderate factors which, according to literature, moderate the relationship between web atmospheric and consumer's internal states. Apart from that, aspects such as the kind of music and musical tempo, could cause different sensations on consumer and, in consequence, affect different way to them. In addition to that, the measurement variables included in the questionnaire, in spite of they have been tested by some authors, could be interpreted by subject in different form. Finally, we also want to remark the

idea that our research is focused in the study of one specific cue. Perhaps, the online atmospheric cue which we have chosen is not sufficiently significance as individual atmospheric element and, in contrast, it is very significance in an environments where were studied all online atmospheric cues together.

So, we suggested as future research to improve the above limitations and to realize other manipulations on web atmospheric (animations of products, colour...). Moreover, it would be appropriate to complement our empirical research including the study of relationships of influence between variables through a structural equations model (Bagozzi and Yi, 1989).

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