

THE EFFECTS OF AMBIENT SCENT ON CONSUMER BEHAVIOR: A REVIEW OF THE LITERATURE

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Abstract *The main purpose of this paper is to present an extended literature review of relevant empirical studies which examine the effect of ambient scent on consumers' perception, consumers' emotions and consumers' behavioral responses in the context of retailing. Compared with other atmospheric stimuli (such as background music), ambient scent has received little attention from researchers. This paper is also concentrated on identifying the principal dimensions of ambient scent (presence versus absence; congruity versus incongruity and pleasantness versus unpleasantness) and examined how these dimensions of ambient scent have an impact on evaluation of a product, of a store or of a shopping mall and their impact on shopping behavior within a store. The paper also presented the Gulas and Bloch (1995) model, a complex conceptual framework on the influence of ambient scent on consumer responses, in their model the authors introduced the influence of mediating factors on behavioral responses to scent. Their model is a first step on the understanding the role of ambient scent in influencing consumer behavior. Davis, Kooijman and Ward (2003) extending and elaborating the Gulas and Bloch (1995) model by introducing concepts from cognate disciplines and examines mediating factors that help shape the emotional and behavioural responses that are stimulated to encompass current research on human olfaction and brings another specific points for future research. Based on the results of the relevant studies the authors of the present paper concludes by identifying gaps in the literature and suggest future research to explore how the use of scent help to create an overall store atmosphere which influence shopping behavior in the context of retailing.*

Keywords: *ambient scent; store atmosphere; consumer behavior; consumer perception; consumer emotion; retail stores.*

JEL classification: *M31, M39*

1. Introduction

Many retailers have long used ambient scent to influence consumer cognition, emotion and behavior. The notion that ambient scent can be used to influence consumer behavior is derived from the concept of atmospherics. The impact of store atmosphere on consumer behaviour has widely been considered in research over the decades (Kotler, 1973; Turley and Milliman, 2000). Numerous atmospheric stimuli were investigated by researchers including music (Bruner, 1990; Milliman 1982, 1986; Yalch and Spangenberg, 1990, 1993; Herrington and Capella, 1996; Dube, Morin 2001, Morin, Dube, Chebat 2007), color (Belizzi, Crowley, and Hasty 1983; Crowley 1993), lighting (Areni and Kim, 1994) crowding (Harrell and Hutt 1976; Hui and Bateson, 1991) and window displays (Sen, Block and Chandran, 2002, Oh

and Petrie, 2012). Referring to the ambient scent, this can be considered an underdeveloped aspect of the store environment because only a few atmosphere related studies have considered the role of ambient scent and its impact on consumer behaviour (Chebat and Michon, 2003; Turley and Milliman, 2000). The body of the literature based on the impact of ambient scent can be considered somehow as fragmented, some of the earlier research were concentrated to examine the effect of scent in terms of products or brands evaluation (Bone and Jantrania, 1992; Mitchell, Kahn and Knasko, 1995; Morrin and Ratneshwar, 2000) others in terms of stores evaluation (Spangenberg, Crowley and Henderson, 1996) and more recently researchers have concentrated on the effectiveness of ambient scent in retail store and shopping mall settings (Hirsch, 1995; Knasko, 1995; Mattila and Wirtz, 2001; Chebat and Michon, 2003; Michon, Chebat and Turley, 2005). The results of these studies reported ambiguous findings and shortcomings of measurement approaches as can be seen in the next part of this paper.

2. Literature review

Ambient scent have not gain so much attention as other atmospheric stimuli. Spangenberg, Crowley and Henderson (1996:67) defined ambient scent as “*scent that is not emanating from a particular object but is present in the environment*”. Wilkie (1995) noted in his seminar work that scent as one of the five senses is considered to be the most closely attached to emotional reactions because the olfactory bulb is directly connected to the limbic system in the brain, which is the seat for immediate emotion in humans, so smell perception and interpretation is a complex phenomenon that involves a mixture of biological responses and psychology. This is one of the main reason why odor in a retail environment is important to study as an atmospheric stimulus because scent enhanced likelihood of producing an emotional reaction from consumers (Michon, Chebat and Turley, 2005).

A review of the literature of the studies on the effects of scent on consumer behavior allow us to understand that in-store scent have concentrated on three dimensions: the first dimension is *scent congruity* with the products sold in the store (Bone and Jantrania, 1992; Mitchell et al., 1995; Mattila and Wirtz, 2001). The second dimension is *presence of a scent*, prior research had demonstrated that simply having a scent present may result in affective or behavioural responses (Spangenberg et al., 1996; Morrin and Ratneshwar, 2000). The third dimension is *scent pleasantness*, prior research reveals that having a pleasant scent may result in positive affective or behavioural responses, whilst having an unpleasant scent may result in negative affective or behavioural responses (Mitchell, Kahn and Knasko 1995; Bone and Ellen, 1999; Morrin and Ratneshwar, 2000). Some of the prior studies on ambient scent (Spangenberg, Crowley and Henderson, 1996; Morrin and Ratneshwar, 2000), have tended to look at the pleasantness of the scent, ignoring any association of the scent with the store. As Gulas and Bloch (1995) pointed out, the scent of flowers may be generally perceived as pleasant, but totally inappropriate for a motorcycle shop.

3. The effects of ambient scent on product and store evaluations

Prior research reveals that *pleasant odors* influence feeling states, evoke associations from memory, and affect product judgments (Cox, 1969; Hirsch, 1990). Cox (1969) show how odor aroma can influence product sold, they demonstrated that nylon stockings with an orange odor sold better than unscented stockings. Subjects of the study associated smell with the product quality, they felt that the scented stockings were of better quality than the unscented ones. Knasko (1989) suggest that ambient aroma had an influence on the amount of time consumers spent at a jewelry counter. Hirsch (1991) demonstrated that respondents were more likely to purchase Nike shoes in a perfumed room rather than the same shoes displayed in an identical but unodorized room. The results of these earlier studies suggest that the *effects of odor* is associated to its *pleasantness or unpleasantness*. Based on these studies Bone and Jatrana, (1992) states that consumers are influenced by *pleasant odors* which are pleasant experience, which, in turn these pleasant experiences create a mood or an overall feeling, which makes the product as being judged. They conducted an experiment and the findings suggest that product evaluations are enhanced when are scented, the primary olfaction effect is on overall product evaluations rather than the attribute belief level. Congruent scents tend to improve evaluations more than incongruent scents (Bone and Jantrania, 1992).

Morrin and Ratneshwar (2000) investigated the effects of ambient scent on evaluation, attention and memory for familiar and unfamiliar brand, they exposed respondents to familiar and unfamiliar brand names, in a *pleasantly scented* environment or no scented environment and evaluated how much time spend respondents to evaluate each brand through a computer recorded. They demonstrated that a pleasant ambient scent for unfamiliar brand names increased attention and memory also improved evaluations primarily rather than for familiar brand names. Morrin and Ratneshwar (2003) continued their work and examined the relationship between scent congruity and brand memory. The first study tested participant evaluations of images of household cleaner and personal care/toiletries in a scented (geranium and clove) or unscented environment. The results indicated that a pleasant scent with the product category increased subjects'attention to brand stimuli, ambient scent improved consumer memory for familiar and unfamiliar brands as assessed by recall and recognition measures. The impact of congruent and incongruent ambient scent was the same on brand recall and brand recognition (Morrin and Ratneshwar, 2003). In the second study was studied how the presence of ambient scent during both encoding and retrieval phases may be critical based on two different factors. The results reveals that brand memory was affected only by the presence of ambient scent at the brand encoding stage and substantially increased attention. Brand recall or brand recognition was not affected by ambient scent at the brand retrieval stage (Morrin and Ratneshwar, 2003).

Mattila and Wirtz (2001) examined the effects that *pleasant ambient scent* and *pleasant background music* on customer evaluations of a store's environment. They consider three situations of scent and music (no music/scent, pleasant low arousal music/scent and high arousal music/scent). The results of the study reveals that when ambient scent (low and high arousal) and ambient music (low and high arousal) were congruent with each other a positive interaction effects on approach behavior, pleasure, satisfaction and store evaluations were found. Spangenberg,

Grohmann, Sprott, (2005) examined the effects of *ambient scent* and background music on consumers' evaluations of a store, its environment and offered merchandise. The results of the study show that a consistence between ambient Christmas scent and the presence of Christmas music (as compared to no scent and Christmas music) means more favourable store attitudes, stronger intention to visit the store, greater pleasure, arousal and dominance and a more favourable evaluation of the environment.

4. The effects of ambient scent on consumer perception

Mitchell, Kahn and Knasko (1995) examined the effects of *scent congruity and incongruity* on cognitive variables that are involved in the consumer decision making processes. The results revelas that pleasant ambient odor influnce consumer decision making, congruent odors lead to a greater access to congruent attitudes, autobiographical memories, thoughts regarding prior experience with the product class and product class knowledge. Incongruent scents may determine cognitive interference. Scent congruity condition resulted in more time spent in decision-making and increased distribution of decisions across product choice groups in each product category compared with scent incongruity. Chebat and Michon (2003) found that ambient scent is used directly to build a favorable perception of the mall environment and indirectly for product quality. Since odors may affect mall perception, retailers should consider that citrus scent as a powerful way of influencing product perception. Perception of the mall environment affects shoppers' arousal very strongly, whereas perception of product quality has very little impact although it is significant on emotions (Chebat and Michon, 2003).

Michon and Chebat (2004) studied the effects of background music and ambient scent on shopper's perception of service quality in a mall atmospheric context. The results show that ambient scent, background music have no direct effect on consumers' perception of service quality, these variables act as mediators rather than moderators of service quality. Michon, Chebat and Turley (2005) examined the effects of ambient odors on shoppers'emotions, perceptions of the retail environment and perceptions of product quality under various levels of retail density in the context of shopping mall. The authors combined moderating effects of ambient scent and retail density which are measured on shoppers' positive affect and on their perception of the mall environment.

5. The effect of ambinet scent on consumer behavior

Numerous studies has demonstrated that ambient scent influence consumer behavior. Hirsch (1995) examined if the effect of the *presence of a pleasant scent* on the amount of money gambling on slot machine in Las Vegas casino, odorized with different aroma over a period of time. The author revelas that the presence of a particular scent increased slot revenues produced in one area of the casino, while a section of the casino that was treated with a second scent and a section of the casino that remained unscented were not observed any significant change in revenues. Knasko (1995) exminated the effect of *ambient olfactory stimuli* on approach behavior, mood and perceived health. The results suggest that when individuals were exposed to the pleasant ambient odors had certain effects rather than no odor (longer looking time, better mood and lower hunger ratings). These findings are consistent with prior reserch which show that pleasant environments can improve

mood and increase various types of approach behavior (Knasko, 1989; Ehrlichman and Bastone, 1992).

Gulas and Bloch (1995) develop a model on the influence of ambient scent specifically as an environmental cue on emotional responses and shopping behaviors. Based on the literature from several discipline, scent was demonstrated to be relevant to consumer behavior in two forms: on the one hand scent can be directly associated with an evaluation object while on the other hand scent is part of the overall ambient environment. The model proposed by the authors (see Figure 1) is congruent with other models of environmental effects developed earlier on the work of environmental psychologist (Mehrabian & Russell, 1974; Bitner, 1992). Scent preferences in combination with consumers' perceptions of ambient scent influence affective responses. Between perceived ambient scent and affective responses can be seen potentially significant moderators. Affective responses to ambient scent are expected to result in approach or avoidance reactions relevant to the consumption situation. Gulas and Bloch (1995) model is one of the first step in developing and understanding a specific consideration of ambient scent perception.

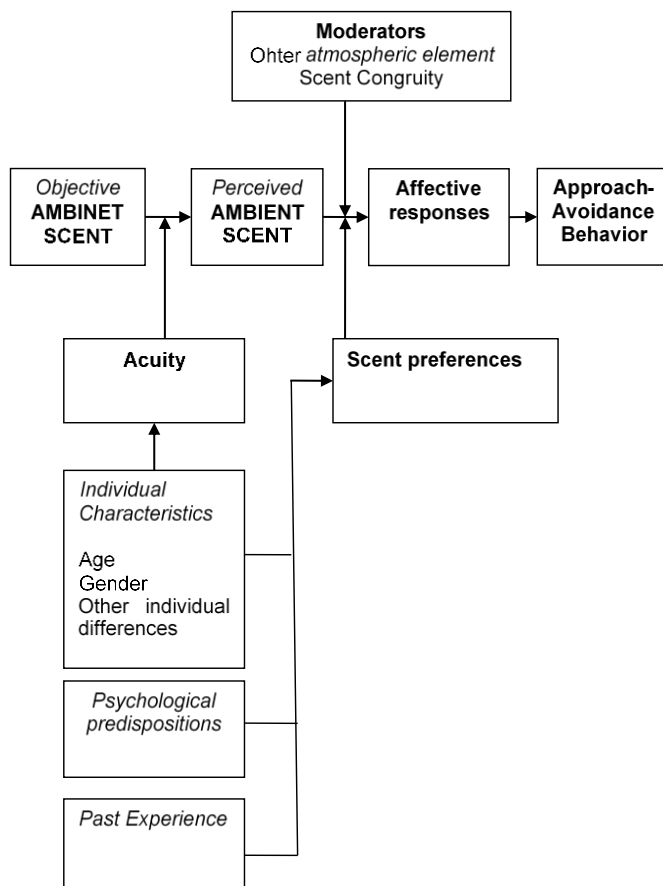


Figure 1: The Model of the Influence of Ambient Scent on Consumer Responses

(Source: Bloch and Gulas, 1995:90)

In a study conducted by Spangenberg, Crowley and Henderson (1996) were tested the effect of adding a *pleasant ambient scent* to a simulated retail environment. The authors want to find whether the presence of an inoffensive ambient scent (scents as being either pleasant or neutral) versus no scent affects evaluations influence approach/avoidance behaviors in a retail environment and whether this impact varies according to the affective nature and intensity of the ambient scent. The results of the study demonstrated that the presence or absence of a scent significantly affected evaluation of the environment and subjects evaluations of the products but weaker effects to product judgement. Subjects in the scented conditions did not actually spend significantly less or more time in the store than subjects in the unscented condition, the time consumers spend examining merchandise, waiting in lines, or waiting for help may be perceived themselves as having spent less time there than it actually is by introducing ambient scent into the environment. More specifically odors in the store environments may be perceived as part of the store atmospherics. The results of the tests suggested that only one of three product evaluations appear to be affected by the scent.

Bone and Ellen (1999) defined three dimensions of the odor which are considered to be important: the presence (or absence) of smell; pleasantness of smell and the congruity of smell with the object studied. The authors reveal that smell influence respondents in relation to: elaboration, as defined from both discursive and image-processing perspectives; affective and evaluative response; purchase and repeat visit intention; behavior in terms such as time spend and decision making. Bone and Ellen (1999) suggest that researchers have to examine whether odor effects on affective and behavioral outcomes are direct or are partially or fully mediated by mood state, cognition and other variables.

Ward, Davis and Kooijman, (2003a) examined the linkage between the research conducted in various fields of scholarship and its potential application in retailing using the model developed by Gulas and Bloch (1995) and introduce other considerations that might be useful to increase the model focused on issues of totality and congruity. The authors consider that ambient smell is a stimulus which leads consumers to develop a holistic impression of the store which can be considered its atmosphere which links to the notion of retail identity, retail image and consumer behavioral responses in terms of approach and avoidance behavior (Ward, Davis and Kooijman, 2003a). The holistic impression of a store helps retailers to develop a clear, consistent and coherent brand identity that is communicated and vested in the store itself, and the understanding on the importance of the use of smell in this process it is very important (Ward, Davis and Kooijman, 2003a).

Davies, Kooijman and Ward (2003b) extending and elaborating the Gulas and Bloch (1995) and introduces in their paper the ability of smell to communicate a "sense of place" and its potential as a differentiator in crowded marketplace. Compared with original model proposed by Gulas and Bloch (1995), the extending model implied important issues for researchers and retailers such as (Davis, Kooijman and Ward 2003b: 622): smell can be perceived through pre-attentive processing, this means that in some situation consumers respond to a smell without realizing; scent memory provides retailers with a mechanism for triggering memories of emotions; when such emotions are pleasant, appear facilitates the development of a "bond" between retailer and researchers; cultural background must be incorporated to the model to reflect the potential importance of group membership on individual characteristics

and preferences; ambient scent is one of the important stimuli which lead consumers to development a holistic impression of the store; the notion of holistic impression can be linked to the creation of a "sense of place" where smell has a potential to act as place-marker in this context; psychological state is one of the most important intervening factor in scent perception and interpretation which was not incorporated in initial model proposed by Gulas and Bloch (1995). The model proposed Davis, Kooijman and Ward (2003b) recognized the need for future research which will examine the extensions of elaboration model proposed by Gulas and Bloch (1995). Spangenberg et al., (2006) examined evaluative and behavioral effects of congruity between the perceived gender of an ambient scent and a store's gender-based products. They investigated customers' responses to an congruent versus incongruent scent between the gender-based product offerings and the perceived femininity or masculinity of ambient scent in a clothing store. The results reveal that the presence of an ambient scent congruent with gender-based products influence shoppers to evaluate the store and its merchandise more favorable, shoppers are more likely to exhibit approach behavior in comparison to an incongruent scent. These results were obtained when other store factors (price or advertising) were held constant. (Spangenberg et al., 2006). Also the presence of a gender congruent scent increases the majority of approach behavior in an actual store including money spend. This study is the first published study which demonstrated the effects of varying scent on actual sales. The results of the actual study extend prior research (Spangenberg, Crowley and Henderson 1996) showing that beyond merely incorporating ambient scent it is important to managers to identify gender preferred or gender congruity scent in their store environments. Parsons (2009) noted that some of the earlier studies scent (Spangenberg, Crowley and Henderson, 1996; Morrin and Ratneshwar, 2000) on the effects of ambient scent tended to look at the pleasantness of the scent, and does not consider any association of the scent with the store. Parsons (2009) analysed whether an associated scent differs from a non-associated scent on its effect on customer liking for the store and consumers' behavioural intentions regarding the store. In this way, the author chose three generic store-types (bookstore only new books; a lingerie store; white-ware appliance store) that were unlikely to have product specific scents. Each respondent view the video of a store, then was measuring affect and behavioural intention. The results reveal that for the store which is odourless, the use of an associated ambient scent will have a strong positive effect on shopper liking for the store. While for all three store categories the presence of a non-associated scent has a negative effect on affect of the store. These results are consistent with prior research (Mitchell, Kahn and Knasko, 1995; Bone and Ellen, 1999). The scenario no scent also has a negative effect on affect, these findings are contrary with prior research (Spangenberg, Crowley and Henderson, 1996; Morrin and Ratneshwar, 2000), which suggested that merely having a scent present may have positive effects, but the results of this study suggest that the absence of scent may have negative effects, rather than the implied null effect suggested by the Spangenberg, Crowley and Henderson (1996) study and that the scent present needs to be one associated with the store type (Pearson, 2009). The effects of scent on purchase intent were found that for the book and lingerie stores the presence of a non-associated scent has a negative effect, whereas the no scent option (congruent) has no effect these results are consistent with Ellen and Bone's (1998) findings. Presence of an

associated scent has a significant positive effect on intention (Pearsons, 2009). The results of the field study was not necessary convincing but reveals that the results of experiment findings have resonable validity. Scent with other atmospheric stimuli can be use to create an attractive store environment to shoppers. The Pearsons' (2009) study reveals that for a normally odourless store an appropriate scent in the form of an associated scent can enhance shopping behavior.

In a real retail setting of young fashion shoppers Morrison et. al. (2011) examined the effects of music (high/low volume) and aroma (the present/absence of vanilla scent) on customers' arousal and pleasure levels and how these affect approach/avoidance behaviour in term such as time spent in store, expenditure levels and customers satisfaction. The results of the study reveals that music volume and the presence of aroma have a significant effects on shoppers' emotions and subsequently influence shopper behaviors and satisfaction level. More specifically arousal induced by music and aroma results in increased pleasure levels which affect positively shoppers behaviors in terms of money spend, approach behavior satisfaction and overall staisfaction. Teller and Dennis (2012), conducted a field experiment in a regional shopping mall to examine the *effectiveness of ambient scent*, the results reveals that ambient scent did not affect any observed or surveyed variable on consumer behaviour no matter which experimental design was simulated. These results are not consistent with prior research (Hirsch 1995; Knasko 1995; Mattila and Wirtz 2001; and Spangenberg, Crowley and Henderson, 1996)

6. Discussions and future research

Scent as other atmospheric stimuli influence consumer behavior in terms of cognitive, emotional and behavioral responses in retail setting and service environment. Turley and Milliman (2000) noted that smell did not received sufficient attention from the researchers as deserved, recently numersous researchrs examined the effect of scent or interaction between ambient smell and backgorund music on consumer behavior in retail store or shopping mall. If earlier studies were concentrated more on the effects of scent on product evaluation (Bone and 1992) and brand evaluation and association of scent with product sold (Cox, 1969; Hirsch, 1990; Bone and Jantrania, 1992; Mattila and Wirtz, 2001) recently researchers recognized the influence of smell on cosumers' perception or shopping behavior in fashion store or shopping mall (Spangenberg, Crowley and Henderson, 1996, Chebat and Michon, 2003). Gulas and Bloch (1995) observed that the scent of flowers may be generally perceived as pleasant, but totally inappropriate for a motorcycle shop. The Pearsons' (2009) study reveals that for a normally odourless store (electronics store, stationery shop, fashion outlet, or bookseller) an appropriate scent in the form of an associated scent can enhance shopping behavior.

The model proposed by Gulas and Bloch (1995 was one of the first step in developing and understanding a specific consideration of ambient scent perception even if the authos request additional research on smell, specifically in the context of retail environments, not so many researchers try to test their model. Ward, Davis and Kooijman, (2003a) organise their work trying to cover these ares which did not fully developed in Glas and Bloch's (1995) framework starting with those focused on issues of totality and congruity. Davis, Kooijan and Ward, (2003b) contentrated their work on the use of ambient scent in the retail environment and examined the mediating factos that help shape the emotional and behavioural responses that are

stimulated. Bone and Ellen (1999) proposed a model for conventional wisdom view of odor which influence approach/avoidance behaviors, altering mood state and affecting elaboration. As can be observe non of these studies did test the model proposed in a filed experiment in retail store or in mall environments.

The authors of present study identified some studies on interaction between ambient scent and background music (Mattila and Wirtz, 2001; Michon and Chebat, 2004; Spangenberg, Grohmann, Sprott, 2005; Morrison et al. 2011) future research have to consider the influence of more interior variables (music, scent, color, lighting; crowding) on their impact on shopping behaviour. These studies reveals that scent influence consumer behaviour in terms such as : perceptions of the store, mood, pleasure, arousal, time spend in store, money spend in store, approach avoidance behaviour. A lack of studies are identifies on the influence of ambient scent in service environment or in online environments we identified only a few studies on the effect of scent in services for example Guenguen and Petr (2005) examined the effects of ambient scent on consumer behavior in a restaurnat. Vinitzky and Mazursky (2011) exmined the effect of the iteration between cognitive variable and the presence of scent on online search motivation purchase characteristics, and telepresence.

In the majority of previous papers were investigated the influence of scent on consumer behavior and exclude the impact of scent on employee bahaviour, future researh can consider this and also the importance of factors which moderates this relationship. Our purpose for future research is to develop a framework on the effect of ambient on shopping behavior in clothing store and mentioned the importance of moderators in this relationship.

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References

- Bone, P.F. and Jantrania, S. (1992) “Olfaction as a cue for product quality”, *Marketing Letters*, Vol. 3, pp. 289–296.
- Bone, P.F. Ellen, P.S. (1999) “Scents in the marketplace: Explaining a fraction of olfaction”, *Journal of Retailing*, Vol. 75, pp. 243–262.
- Chebat, J.C. Michon, R. (2003) “Impact of ambient odors on mall shoppers’ emotions, cognition, and spending - A test of competitive causal theories”, *Journal of Business Research*, Vol. 56, pp. 529-539.
- Cox, D.F. (1967) “The Sorting Rule Model of the Consumer Product Evaluation Process” *In Risk Taking and Information Handling in Consumer Behavior*, Boston, MA: Graduate School of Business Administration, Harvard University, pp. 324-369.
- Davis, B.J. Ward, P. Kooijman, D. (2003b) “The Sweet Smell of Success: Olfaction in Retailing”, *Journal of Marketing Management*, Vol. 19, pp. 611-627.
- Hirsch, A.R. (1990) “Preliminary Results of Olfaction Nike Study” note dated November 16 distributed by the Smell and Taste Treatment and Research Foundation, Ltd. Chicago, IL cited in Bone, P.F. and Jantrania, S. (1992) “Olfaction as a cue for product quality”, *Marketing Letters*, Vol. 3, pp. 289–296.
- Hirsch, A.R. (1995) “Effects of Ambient Odors on Slot-Machine Usage in a Las Vegas Casino”, *Psychology & Marketing*, Vol. 12, No. 7, October, pp. 585-594.

Gueguen, N. and Petr, C., (2005) "Odors and consumer behavior in a restaurant", *Hospitality Management*, Vol. 25, pp. 335-339.

Knasko, S.C. (1989) "Ambient Odor and Shopping Behavior" *Chemical Senses*, Vol. 14, pp. 718.

Knasko, S.C. (1993) "Lingering Time in a Museum in the Presence of Congruent and Incongruent Odors" *Chemical Senses*, Vol. 18, October, pp. 581.

Knasko, S.C., (1995), "Pleasant odors and congruency: Effects on approach behavior, *Chemical Senses*, Vol. 20, pp. 479-487.

Mattila, A.S. and Wirtz, J. (2001) "Congruency of scent and music as a driver of in-store evaluations and behavior", *Journal of Retailing*, Vol. 77, pp. 273-289.

Michon, R. and Chebat, J.C. (2004) "The Interaction Effect of Background Music and Ambient Scent on the Perception of Service Quality", paper presented at the Eighth International Research Seminar in Service Management, La Londe-Les-Maures, June.

Michon, R. Chebat, J.C. Turley, L.W. (2005) "Mall atmospherics: the interaction effects of the mall environment on shopping behavior", *Journal of Business Research*, Vol. 58, pp. 576-583.

Mitchell, D.J. Kahn, B.E. Knasko, S.C. (1995) "There's Something in the Air: Effects of Congruent or Incongruent Ambient Odor on Consumer Decision Making", *Journal of Consumer Research*, Vol. 22, September, pp. 229-238.

Morrin, M. and Ratneshwar, S. (2000) "The effect of retail store environment on retailer performance", *Journal of Business Research*, Vol. 49, pp. 167-181.

Morrison, M. Gan, S. Dubelaar, C. Oppewal, H., (2011) "In-store music and aroma influences on shopper behavior and satisfaction", *Journal of Business Research*, Vol. 64, pp. 558-564.

Parsons, A.G. (2009) "Use of scent in a naturally odourless store", *International Journal of Retail and Distribution Management*, Vol. 37, No. 5, pp. 440-452.

Spangenberg, E.R. Crowley, A.E. Henderson, P.W. (1996) "Improving the Store Environment: Do Olfactory Cues Affect Evaluations and Behaviors?", *Journal of Marketing*, Vol. 60, April, pp. 67-60.

Spangenberg, E.R. Grohmann, B. Sprott, D.E. (2005) "It's beginning to smell (and sound) a lot like Christmas: the interactive effects of ambient scent and music in a retail setting", *Journal of Business Research* Vol 58, pp. 583-1589.

Spangenberg, E.R. Sprott, D.E. Grohmann, B. Tracy, D.L. (2006) "Gender-congruent ambient scent influences on approach and avoidance behaviors in a retail store, *Journal of Business Research*, Vol. 59, pp. 1281-1287.

Teller, C. and Dennis, C. (2012) "The effect of ambient scent on consumers' perception, emotions and behaviour: A critical review", *Journal of Marketing Management*, Vol. 28, No. 1-2, pp. 14-36.

Vinitzky, G. Mazursky, D. (2011) "The Effects of Cognitive Thinking Style and Ambient Scent on Online Consumer Approach Behavior, Experience Approach Behavior, and Search Motivation", *Psychology and Marketing*, Vol. 28, No. 5, May, pp. 496-519.

Ward, P. Davis, B.J. Kooijman, D. (2003a), "Ambient Smell and the Retail Environment: Retailing Olfaction Research to Consumer Behavior", *Journal of Business and Management*, Vol. 9, No. 3, Summer, pp. 289-302.

Wilkie, Maxine (1995), Scent of a market, *American Demographics*, Vol. 17, No. 8, August, pp. 40-48.