The effect of ambient scent on time spent in retail stores

The mediating role of consumers' shopping mood

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This research aims to study the effect of an ambient scent on the time spent in store by consumers. Specifically, the mediating role of the shopping mood of the consumers is tested. The context of the experiment is a real-life field location, a small local coffee and lunch bar, with a little shopping space. Hard-copy questionnaires were used to collect data in this real-life experiment in order to determine whether the presence of an ambient scent could influence positively the consumers' shopping mood, and in turn increase their time spent in store. Furthermore, it was investigated whether the relationship between scent and shopping mood was moderated by store loyalty, in-store crowding and/or shopping motivation. Results show that the presence of an ambient scent in store increases the time spent by consumers but does not affect consumers' shopping mood. The effect of scent presence on time spent in store is also mediated by the shopping mood. However, no evidence was found for any moderating effects. Given the specific characteristics of the research location, a small local bar, further research will be needed to show whether these conclusions can be generalized.

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General Introduction

Retailers are constantly looking for new ways to maintain and strengthen their customer share because of the changing retail environment (Baker, Grewal, & Parasuraman, 1994; Denson, Perry, & Wade Clarke, 2012; Michon, Yu, Smith, & Chebat, 2007; Purcarea, 2017). They do not only use new technologies to compete against online shopping (Marcus, 2013), they also try to create an entire shopping experience (Krishna & Schwarz, 2014). Lately, people do not only go shopping because they need something, it is an uprising cultural phenomenon that consumers are spending more time and money without buying intentions in advance (Bäckström, 2006). Thus, different in-store atmospherics are used to meet consumers' demand for such a personal experience (Spence, Puccinelli, Grewal, & Roggeveen, 2014).

According to Spence et al. (2014), ambient scent is the most challenging sensory cue to implement because it is difficult to observe and describe. A well-known example in the world of olfactory marketing is lingerie retailer Victoria Secret. It has long used its own perfume as ambient scent in store, this perfume is also for sale, thus the consumer is confronted with the specific scent both in-store and at home (Floor, 2006). Furthermore, it is demonstrated that sales for Nike shoes were higher in a scented room than sales of the same shoes displayed in an identical but unscented room (Roxana & Ioan, 2013). Moreover, the combination of ambient scent and other sensory cues has been studied extensively (Krishna, Elder, & Caldara, 2010; Shah, 2015; Spence et al., 2014). It has even been used as a marketing strategy in retail stores. For instance, Abercrombie & Fitch is a retailer known for triggering different senses. Loud music, dim lighting, attractive staff and scent generously are applied in its stores. Perfect for the Abercrombie & Fitch brand and their target market of adolescents, but a huge turn-off for everyone else (Carter, 2013). These examples prove that retailers who better understand the combinations of store design attributes and that are able to manipulate them in an effective manner, can really benefit from it (Davies, Kooijman, & Ward, 2003). Specifically for scent, it is still a risky business since some scent effects are rather volatile, thus more methodical attention is necessary in order to allow retailers to use scents in a strategic manner (Bone & Ellen, 1999).

The sense of smell is the strongest, it acts directly on the limbic system which controls and triggers emotional reactions (Bell & Bell, 2007). This is an advantage for retailers who use ambient scents, since they can exert strong emotional influences on the consumer, who is often unaware of the use of scents in stores (Bradford & Desrochers, 2009). For this reason, Bosmans (2006) considers ambient scents, which are scents that do not come

from a specific product or product-class, as extraneous environmental cues (Bambauer-Sachse, 2012). Moreover, ambient scent may be of greater interest since it has the potential to impact consumers' perceptions of the whole store rather than product-specific scents can (Denson et al., 2012). Knowing how to use and diffuse an ambient scent, and what effect it could have on customers, is a real advantage for retailers.

In the field of ambient scent, extensive research has been done on the different responses it can trigger. These responses could be affective responses (Teller & Dennis, 2012), evaluative responses (e.g. store and product evaluations; (Bosmans, 2006; Spangenberg, Sprott, Grohmann, & Tracy, 2006), intentions (Barber, Kuo, Bishop, & Goodman, 2012; Fiore, Yah, & Yoh, 2000; Sherman, Mathur, & Smith, 1997) or actual behavior (Bone & Ellen, 1999; Madzharov, Block, & Morrin, 2015). Many of these studies only looked at the direct effects of ambient scent on responses without examining these effects and underlying processes in detail (Bambauer-Sachse, 2012). One variable is considered as possible mediating factor in the relationship between ambient scent and consumers' responses, namely the mood state of the consumer. This variable is important for scent since the sense of smell is associated excessively with emotional reactions (Bell & Bell, 2007). However it is often linked to ambient scent effects, inconsistencies exist in the literature about this mediating effect on the relationship between ambient scent and consumers' responses (Bagozzi, Gopinath, & Nyer, 1999; Bone & Ellen, 1999). Few researchers state that the mediating effect of mood has shown insignificant (Morrin & Ratneshwar, 2003). Further, Leenders and colleagues (2016) could not find proof that mood mediates the effect of scent on behavior, although it appeared to mediate the effect of scent on store evaluations (Leenders et al., 2016). When in fact, a large-scale field study about effect of store environment, like ambient scent, on consumer emotions and the resulting influence on actual shopping behavior, found support for a mediating effect of the shopping mood on the relation between ambient scent and shopping behavior (Sherman et al., 1997).

With the aim of analyzing this mediating effect of shopping mood on the relation between ambient scent and actual shopping behavior, an in-store field study was executed. An in-store field study gives the most valuable results, but in addition, the use of ambient scents in retail environments is mostly been tested in lab experiments rather than in real retail environments (Bambauer-Sachse, 2012). Besides, the inconsistencies and ambiguous results that exist about the aforementioned mediating effect may depend on differences in context. Consumer-specific moderators such as gender and impulsive vs. contemplative buyers have been studied in this context (Mattila & Wirtz, 2008; Spangenberg et al., 2006). However, this thesis aims to examine the relationship between ambient scent and shopping mood by incorporating possible consumer- and store-specific moderators that could

influence this relationship. Due to the fact they've already been linked to either ambient scent, shopping mood, or a combination of both.

An example that has been already studied a lot in relation with the mood state of the consumer is the (perceived) crowding in stores (Chebat & Michon, 2003; Mattila & Wirtz, 2008). Crowdedness in a store can negatively influence the mood state of consumers, such that people, women more than men, are more irritated in a crowding situation (d'Astous, 2000). Only a main effect is studied, but it may have a moderating effect here since crowdedness can be seen as an extra stimulus in the environment, and consumers processing too many stimuli have less time to process atmospheric cues like scent (Michon, Chebat, & Turley, 2005).

Another possible moderating factor is store loyalty. There is a lot of research on this variable, for example in the context of the restaurant industry (Han & Ryu, 2009). They found a clear relation between the store environment and loyal customers. According to Sui and Baloglu (2003), emotional attachment was found to be the most influential variable on loyalty. This raises the question whether ambient scent has still an effect on the consumer's mood, when the consumer already is a loyal customer and already has an emotional attachment.

Likewise, we could link shopping motivation to ambient scents and the consumers' mood state. Beside the task-related, utilitarian shopping motivation, where consumers want to shop to accomplish a specific goal, often purchasing a specific item in an efficient manner, some consumers want to go shopping for joy and entertainment. These consumers have a hedonic shopping motivation (Babin, Darden, & Griffin, 1994; Childers, Carr, Peck, & Carson, 2001). They are seeking a joyful and pleasant environment (Babin et al., 1994). Considering the hedonic value, shopping motivation may alter the relationship by determining consumers' openness to sensory and emotional experiences (Babin et al., 1994). Thus, these three moderators are considered, so as to analyze the possible relationship between scent and mood.

The purpose of this study will be to investigate the effect of ambient scent on time spent in stores or bars, and more importantly the mediating role of the mood state of the consumer. This study will use an actual shopping behavior that easily can be measured: time spent in store. (Herrmann, Zidansek, Sprott, & Spangenberg, 2013; Spangenberg, Crowley, & Henderson, 1996). An actual shopping behavior is used instead of intentions or perceptions, since they have not been studied much and it can give more valuable information for retailers (Barber et al., 2012).

The experiment is conducted in a local coffee- and lunch bar, which also has a small shopping area. A congruent scent with this store is used. In prior research about ambient

scents, the more congruent the scent with the store or product, the greater and positive the effects on shopping behaviors (Bosmans, 2006). During this in-store field study, customers were asked to fill in a questionnaire that inquired their current mood state, their level of store loyalty, their shopping motivation, the perceived crowding in store, and their time spent in store. Additionally, personal data is gathered. The study was conducted over two consecutive weeks. First, customers were not exposed to scent or other customized store atmospherics, then, in the second week, a congruent ambient scent was diffused throughout the whole bar and shop.

The results of this study will contribute to the knowledge of retailers on why and when they should use ambient scents. First, marketeers and shop owners will know whether the use of ambient scent really can increase sales, by increasing the time spent in store. Second, retailers could make greater use of personalized experience, by segmentation based on the achieved level on the different moderators. Different approaches can be developed for loyal and disloyal customers, crowding and non-crowding situations and the type of shopping motivation.

1   Literature review

1.1   Scent

Scents, we encounter them daily. Yet an actual definition of the concept of scent is more complicated than we think. We can identify different scents, but naming them is often difficult, if not impossible (Majid & Burenhult, 2014; Yeshurun & Sobel, 2010). The one thing humans can and do is indicating the pleasantness of the scent (Spence et al., 2014; Yeshurun & Sobel, 2010). Spangenberg and his colleagues (1996) broaden this vision by saying that scents can be identified and differentiated along three different dimensions. Next to the affective quality of the scent (e.g., how pleasant it is), there is the dimension of its arousing nature (e.g. how likely it is to evoke a physiological response) and the intensity dimension (e.g. how strong it is) (Mattila & Wirtz, 2001; Spangenberg et al., 1996).

Since olfaction belongs to our senses, it can be important how we process scents. Smell is a chemical alert system for our body. It is responsible for detecting whether the molecules around our bodies are beneficial or toxic (Vlahos, 2007). That is the reason why Pam Scholder Ellen once stated: "With all of the other senses, you think before you respond, but with scent, your brain responds before you think" (Vlahos, 2007). The sense of smell works directly on the limbic system, a part of the brain that is concerned especially with emotion and memory (Bell & Bell, 2007; Ward, Davies, & Kooijman, 2007). Humans also form emotional attachment to different scents. This because the sense of smell is strongly related to our memory. We can recall smells with around a 65% accuracy after a year, while our recall of images is a lot lower, at around 50% after only three months (Bell & Bell, 2007). Because our sense of smell is the most primal and deeply rooted sense, the growing interest of marketers in the use of scent isn't surprising in a time marked by the importance of sensory experience in retail (Purcarea, 2017; Vlahos, 2007).

Doucé and Janssens (2013) distinguish two types of scent in marketing applications: scents that are intrinsic to an evaluation object and ambient scents. An ambient scent is a scent that is not emanating from a particular product, but is present in the environment as part of it (Spangenberg et al., 2006). This type of scent can affect reactions to the entire store and all its products, without being intrinsic to any product (Doucé & Janssens, 2013; Gulas & Bloch, 1995; Parsons, 2009). Therefore, the use of an ambient scent can be considered as an extraneous environmental cue (Bambauer-Sachse, 2012; Bosmans, 2006).

Another classification of the types of scents used in marketing is given by Bradford and Desrochers (2009). They divide the possible scents into three categories: a marketer scent,

a product scent, and an ambient scent. A marketer scent is a scent that is used as a promotional tool. Some well-known examples are the smell of a new car and a baking scent in a home that is for sale (Bradford & Desrochers, 2009). A product scent is, obviously, the product itself. These products are made with the function of spreading a fragrance, for example perfumes, air fresheners, deodorizers… (Henshaw, Medway, Warnaby, & Perkins, 2016). Compared to the previous two, ambient scent is the most different since it does not result from a particular product. Here, Bradford & Desrochers (2009) give a definition of ambient scent which is very similar to the ones found in other research, stating that it is a scent used in a retail environment when not arising from a product itself (Doucé & Janssens, 2013; Gulas & Bloch, 1995; Parsons, 2009; Spangenberg et al., 2006).

In the remainder of this study, by talking about scent, we refer to the concept of an ambient scent. And so, the use of scent in the environment, not intrinsic to specific products, that can be distributed both via some form of technical intervention or naturally within the environment.

Prior research already investigated the effect of the use of ambient scents in the retail environment on consumers (Holland, Hendriks, & Aarts, 2005). This effects could be the responsiveness of consumers (Grossbart, Hampton, Rammohan, & Lapidus, 1990), consumers' intentions (Barber et al., 2012; Fiore et al., 2000; Sherman et al., 1997), consumers' behavior (Bone & Ellen, 1999; Chatterjee, 2017; Gulas & Bloch, 1995), consumers' preferences and consumers' perceptions and evaluations (Madzharov et al., 2015; Spangenberg et al., 2006). For example, the pleasantness of in-store atmospherics, in general, is an important component of predicting whether an individual wishes to approach, stay, or spend money in the store (Chatterjee, 2017). Another specific outcome of the use of ambient scent in a retail context is the enhancement of store image (Baker, Grewal & Parasuraman, 1994).

However, the effect of an ambient scent can differ among the different dimensions or properties of the scent (Bosmans, 2006). For example, if a scent is pleasant, it doesn't always mean that it will have a positive effect on shopping behaviors. If the scent isn't congruent with the retail environment, it can be viewed as inappropriate and the opposite effect can occur (Bosmans, 2006). Also, the intensity of the scent can influence the effect of scent on evaluations and behavior of consumers (Leenders et al., 2016). It is a crucial managerial variable, because the intensity level should be carefully calibrated. Too high or too low levels lead to unpleasantness with reference to scent (Leenders et al., 2016).
Besides the different dimensions of the scent itself, individual differences of consumers can also influence the effects of ambient scents. Morrin and Chebat (2005) describe this phenomenon as person-place congruency.

A common difference is the type of shopping trip or shopping motivation. Two types of shopping motivations exist: the hedonic and utilitarian shopping motivation. With the hedonic motivation, people want to have a joyful trip, whereas with the utilitarian motivation people want to fulfil a need or task (Babin et al., 1994; Doucé & Janssens, 2013). Chang and colleagues (2011) reported that consumers with a high hedonic motivation are more likely to be affected by store atmospherics because they pay more attention to the store environment. This effect has been confirmed specifically for ambient scent by Morrin and Chebat (2005).

The same effect can be observed with affect intensity, which is consumers' openness to emotions (Doucé & Janssens, 2013). The presence of an ambient scent has a positive effect on consumer behavior, especially when there is a high affect intensity, and thus people have a high degree of experiencing emotions (Doucé & Janssens, 2013).

Some simple individual differences like gender and age also can moderate effects of scents (Leenders et al., 2016). The moderating role of gender is mostly associated with different perceptions of which scents are pleasant and which not, due to the fact that women are more sensitive to certain scents and that women and men respond differently to olfactory cues (Spangenberg et al., 2006). As well, research demonstrates that older consumers cannot recognize and recall scents as well as younger customers (Chebat, Morrin, & Chebat, 2009).

1.2 Mood

In general, a mood is a person's internal state, which is a temporary state of mind or feeling (Morrin & Ratneshwar, 2003). Gardner (1985) defines mood as a feeling state that is subjectively perceived by individuals, referring to an affective state that is general and pervasive. He categorizes mood into feeling states that are temporary, particularized to specific times and situations (Gardner, 1985).

According to this definition, a distinction must be made from emotions, which are more intense and tied to an assignable behavior, which does not mean that a mood cannot be described in terms of emotions (Hastorf & Isen, 1982). In contrast, Bagozzi et al. (1999) state that mood lasts for a longer period and has a lower intensity than an emotion. They define emotion as a mental state of readiness that results from cognitive assessments of events or thoughts (Bagozzi et al., 1999).

In regard to mood in a retail or marketing context, it is important to make a distinction between a general mood state and a shopping mood state (Babin & Darden, 1996). In a

retail setting, mood states are often referred to as emotional states as pleasure, arousal and dominance, also called the PAD-scale (Doucé & Janssens, 2013; Mehrabian & Russell, 1974; Ward et al., 2007). Pleasure designates the extent to which a person feels good, happy or satisfied in a situation. Arousal is the extent to which a person feels excited, stimulated, or active in a situation. Arousal is also referred to as the psychological feeling state elicited by the environment (Mehrabian & Russell, 1974; Spangenberg et al., 2006). Dominance is determined by the degree a person feels he has control over the situation. Dominance is often omitted because of a lack of empirical support (Doucé & Janssens, 2013). In the remainder of this study, when referring to mood, the consumers' shopping mood is intended. This shopping mood can be explained by the PAD-scale of Mehrabian and Russell (1974).

A consumer's shopping mood can affect different factors in a retail context. First of all, it turned out that shopping mood has a dual role (Babin & Darden, 1996). The shopping mood of consumers does influence spending, but it has a greater effect on satisfaction with the retailer (Babin & Darden, 1996). Spending is one of the examples of possible shopping behaviors that can be affected by the shopping mood (Sherman & Smith, 1987). A specific case is the one where a consumer's mood state affects impulsive purchases (Chang et al., 2011). Consumers with a more positive shopping mood are more likely to make impulsive purchases (Chang et al., 2011). Next to spending, a variable that is often associated with it is time spent in store (Donovan, Rossiter, Marcoolyn, & Nesdale, 1994). Together, these variables are called purchasing behavior, they are taken together because the impact on these two is practically the same (Donovan et al., 1994)

The effect of shopping mood in various retail environments can differ depending on individual differences like familiarity with the store (Donovan et al., 1994), time pressure of consumers (Leenders et al., 2016), perceived crowding (Byun & Mann, 2011; Li, Kim, & Lee, 2009; Machleit, Kellaris, & Eroglu, 1994) and shopping motivation (Babin et al., 1994; Dawson, Bloch, & Ridgway, 1990; Doucé & Janssens, 2013; Faber & Christenson, 1996). That is, consumers who are familiar with the store may have made an emotional attachment with the store earlier, whereby this attachment may override the emotions induced by different atmospheric cues (Donovan et al., 1994).

The time pressure consumers experience while visiting a store may also differentiate the effect of the shopping mood in retail environments. Namely, consumers experiencing a high time pressure will already enter the store in a negative mood, which in turn will result in the fact that it will negatively influence outcome effects, like evaluations of the store (Leenders et al., 2016).

Extant research investigated the effects of perceived crowding on consumers' mood. Findings revealed that greater perceptions of human crowding result in more negative mood states (Argo, Dahl, & Manchanda, 2005; Byun & Mann, 2011; Eroglu, Machleit, & Barr, 2005; Machleit et al., 1994). Additionally, feelings of stress were related to a crowded environment (Hui & Bateson, 1991). Crowding could have a tremendous effect on the shopping mood (Li et al., 2009).

Finally, a link can be found between shopping motivation and mood. Just like affect intensity, shopping motivation can determine consumers' openness to emotional and sensorial experiences (Babin et al., 1994; Doucé & Janssens, 2013). A hedonic shopping motivation therefore, in contrast to a utilitarian motivation, can activate positive emotional states in the market place. Moreover, fulfilling this motivation has an effect on consumers' emotions (Dawson et al., 1990). Another example is the use of shopping to manage undesirable mood states. Here compulsive buying is a behavior that serves as a way of self-medicating depression and negative effect (Faber & Christenson, 1996). In this study pleasure and excitement were the most likely outcomes of an impulsive purchase. This gives proof to the fact that shopping can help to regulate your mood state and therefore, that shopping motivation can be related to a consumer's mood (Faber & Christenson, 1996).

1.3 The S-O-R model

The Stimulus-Organism-Response model is a theory introduced in behavioral and environmental psychology. This theory states that an environment as a stimulus can impact an organism, and this impact, in turn, will evoke specific responses. In general terms, the environment where psychologists refer to is a physical, biological or social environment. When referring to an organism, it could be either about biological or psychological factors. The S-O-R approach on behavior was first introduced in psychology by Robert S. Woodworth. He criticized the strictly Stimulus-Response (S-R) formula or the Input-Output model, by stating that the stimulus elicits a different effect or response depending on the state of the organism (O) (Jacoby, 2002; Pan, Lin, & He, 2017).

For example, an application of the model can be found in the human learning theory (Noble, 1966). Here, the S-O-R formula was used to analyze the empirical law of human learning and performance, by linking the parts of the formula with independent, dependent, and parametric variables (Noble, 1966).
Later, the interest and application of this model increased when introduced into the research on retail environment (Donovan & Rossiter, 1982; Mehrabian & Russell, 1974).

The organism was defined by three emotional states here: Pleasure, Arousal and Dominance (PAD) (Donovan & Rossiter, 1982; Mehrabian & Russell, 1974).

1.4 Conceptual framework

With regard to the relationship between scent and time spent in store, it will be investigated whether there is a mediating role of mood state of consumers and whether there are moderating factors that can influence the effect of smell on the shopping mood (Figure 1). Most research has applied the S-O-R model in the field of ambient scents in retail stores (Mehrabian & Russell, 1974), a stimulus-organism-response framework to explain and predict the effects of environmental variables on people's cognition or mood state and ultimately their behavior (Bitner, 1992; Donovan & Rossiter, 1982; Haberland, Sprott, Landwehr, Herrmann, & Spangenberg, 2010; Morrison, Gan, Dubelaar, & Oppewal, 2011). The S-O-R model (Mehrabian & Russell, 1974) applies to this study, meaning that ambient scent is the stimulus (S), that influences the consumer itself, and his mood (O), which leads to actual shopping behavior as an approach response (R).
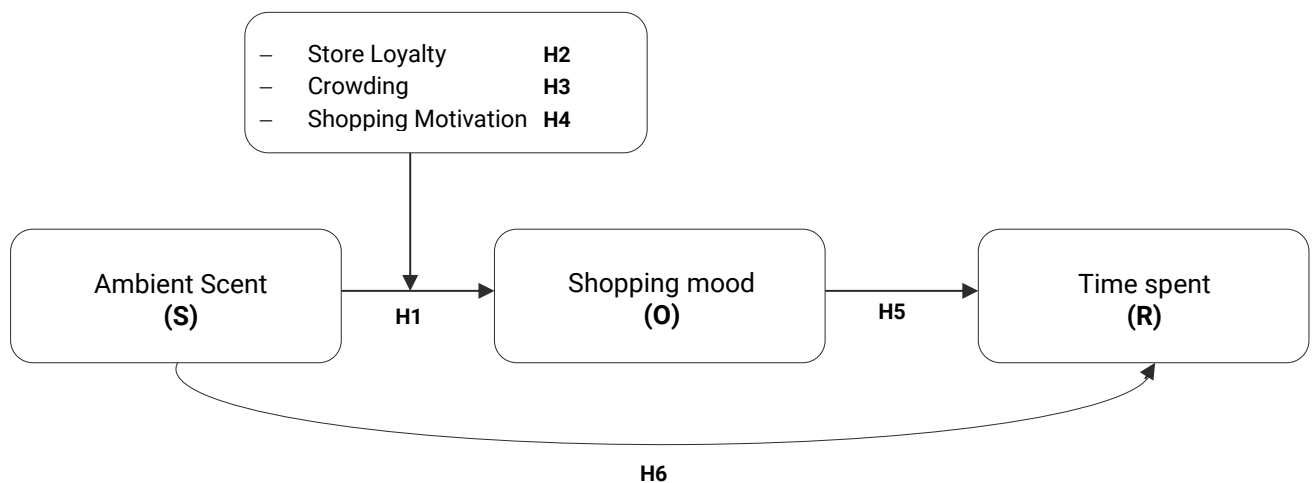
Figure 1: Conceptual model

The relationship between ambient scent and mood has been a hot topic in marketing research (Bambauer-Sachse, 2012; Morrin & Ratneshwar, 2003; Ward et al., 2007). The reason why can be found in the strong connection between scents and emotional reaction (Bradford & Desrochers, 2009; Henshaw et al., 2016). However, according to Michon & Chebat (2004), researchers have been unable to prove the link between ambient scent and emotional responses, and thus mood states. What already has been demonstrated is the stimulation of cognitive reactions by ambient scents (Chebat & Michon, 2003; Michon & Chebat, 2004; Spangenberg et al., 1996). Morrison et al. (2011) considers mood as an

important factor to better understand the way scent influences shopping behavior. Mood will be used as a mediating effect between ambient scent and shopping behaviors.

When trying to identify the relation between ambient scent and mood, this thesis looks at three possible variables who can moderate this relation. These three moderators may explain the ambiguity and inconsistency of these results in prior research. These factors could influence the relation between ambient scent and mood because they either are strongly associated to mood states, to ambient scent or both. Generally, only a main effect was found for these variables, but we assume they could have moderating effects on the relation between ambient scent and mood.

Store loyalty

We will define store loyalty as the loyalty of a consumer to the specific store. Loyalty as in, the consumer is a frequent visitor and has made a sort of emotional attachment to the store (Bowen & Chen, 2001; Donovan et al., 1994). Because an emotional attachment is already made, consumers could be resistant against changes in the environment (Donovan et al., 1994).

In-store crowding

There already is a consensus that spatial crowding generates negative emotional and behavioral reactions, yet there have been inconsistencies in the results regarding the effect of human crowding (Byun & Mann, 2011; Li et al., 2009). Crowding, both spatial and social, has been seen as an unpleasant experience (Michon et al., 2005). Whereas, a study of Li et al. (2009) found that human crowding has a positive effect on consumers' emotions (Byun & Mann, 2011). Only a main effect on the mood state is considered. However, ambient scent is an environmental stimulus that can be override by crowing as an extra stimulus (Byun & Mann, 2011). Therefore, this variable is included into the model as a moderator to investigate whether it could influence the relation between ambient scent and the shopping mood.

Shopping motivation

A hedonic shopping motivation is a motivation to go shopping to have fun and because you like it, a recreational motivation (Bäckström, 2006; Dawson et al., 1990). If the shopping trip was amusing, a hedonic shopper is satisfied, whether a purchase has been made or not (Doucé & Janssens, 2013). Therefore, hedonic shoppers experience a kind of openness to emotional states and sensorial experiences (Babin et al., 1994; Doucé & Janssens, 2013), In contrast to utilitarian shoppers who just want to satisfy their shopping needs, without being bothered by any other elements (Childers et al., 2001). Because of

this difference, hedonic shoppers will be more sensitive to store atmospherics and more affected by it, compared to utilitarian shoppers. From this perspective, this variable has a high probability to moderate the relation between ambient scent and mood.

Time spent in store

This study aims at investigating the effect of ambient scent on time spent in store, while considering a mediating effect of the shoppers' mood. Following the Mehrabian and Russell model (1974), the effect of the store environment would influence the mood state of the consumer, which will lead to specific responses like actual shopping behaviors (Donovan et al., 1994). As well, since Barber et al. (2012) reported that previous research has fallen short in considering consumers' actual purchase behavior versus self-reported purchase intentions, the focus here will be on actual behavior. Time and money spent in store are two examples of actual shopping behavior. These two are both easy to measure and can give a lot of useful information about the behavior of consumers (Sherman et al., 1997). However, only time spent will be considered since both are expected to have the same outcome.

Control variables

Beside this conceptual model, some control variables were added to analyze. For example, age and gender are two variables that may moderate the effect of an ambient scent on the time spent in store. It has been proven that women are more sensitive to certain scents and respond differently to olfactory cues in contrast to men (Spangenberg et al., 2006). As well, effects can differ based on the age of the consumer since it was showed that older shoppers are less able to perceive an ambient scent when it is present (Chebat et al., 2009). A third control variable is the actual behavior of consumers. Since a unique real-life experiment setting is used, where you can eat, drink and/or shop, these specific activities are included in the study as control variables. Whether there is a difference in what consumers intended to do and actually did, is measured along with the impact of the activities on the time spent in store.

Eventually, an important output variable when studying shopping behaviors is the money spent in stores. For example, Michon and Chebat (2004) accentuated that an ambient scent can have significant effects on the perception of product quality and on consumer spending. In a lot of studies, the effect of environmental stimuli on sales is examined (Chebat et al., 2009; Herrmann et al., 2013). When sales are defined as the amount of money a store has received by purchases, it could be equated with the money spent by consumers on

purchases. Also, the effect of the shopping mood on money spent has been showed to be positive (Sherman et al., 1997).To conclude, the same effects on time spent are expected for money spent in store. For this reason, money spent is added in order to control for this assumption of similar effects.

1.5 Hypotheses

1.5.1 Ambient scent and mood

Based on the S-O-R paradigm, the presence of an ambient scent can be a possible antecedent of the shoppers' mood state (Eroglu & Machleit, 1993). Knowing that researchers found that mood states could influence consumer reactions and behaviors (Bone & Ellen, 1999; Faber & Christenson, 1996), it is the sensory information from store atmospherics that influences mood states (Grossbart et al., 1990; Morrison et al., 2011). Moreover, since the sense of smell is the most closely related to emotional reactions, scents have an instantaneous good or bad effect on consumers' mood state (Bradford & Desrochers, 2009).

A first example of research on the effect of ambient scent on the mood state, considers a positive effect through the evocative power of smell (Davies et al., 2003). Here, scents are used to trigger memories that are linked to either pleasant associations or pleasant experiences with earlier shopping trips in the store. These memories will in turn lead to a good mood state (Davies et al., 2003). In a study of Bone and Ellen (1999), where empirical evidence on the effect of scent presence was checked, only for a small percentage a significant effect of the presence of a scent on the mood state was found. In examining whether the presence of an ambient scent has an effect on the purchase intention of the consumer, the mood state was seen as one of the possible mediating variables (Bambauer-Sachse, 2012). A significant positive effect was found of ambient scent on the mood state.

Although, the relation between ambient scent and mood hasn't always been significant, here the relation is considered positive since the presence of a pleasant ambient scent has been proven most to enhance positive mood states (Bambauer-Sachse, 2012; Bone & Ellen, 1999; Davies et al., 2003; Spence et al., 2014). The following hypothesis can be set up:

H1: The presence of an ambient scent will have positive effects on the shopping mood state.

1.5.2 Store loyalty

There are two relevant perspectives when examining store loyalty (Bustos-Reyes & González-Benito, 2008). Besides the attitudinal approach, that characterizes loyalty as a psychological state, they also consider the behavioral approach of store loyalty, which conceptualizes loyalty as a repeat purchasing behavior. The difference in these two approaches lies in the fact whether the repeat purchases are made voluntarily and the customer is willing to maintain the relationship based on the benefits it receives from this relationship (attitudinal) or that they are made out of habit, because some barriers prevent them from switching stores, or because of a shortage of attractiveness of alternatives, thus, customers may maintain the relationship by obligation (behavioral) (Picón, Castro, & Roldán, 2014). This study will look at attitudinal loyalty, since behavioral loyalty has the problem that repeat purchases are not always the result of an emotional commitment toward the store (Bowen & Chen, 2001).

When a consumer already is loyal to the store, it might mean that he has already reached a certain level of satisfaction with the store, and this might mean, indirectly, that the consumer's mood state would not be affected by the presence of an ambient scent (Donovan et al., 1994; Sui & Baloglu, 2003)

A first study examined the antecedents and consequences of commitment or loyalty in the case of a hotel casino and found that emotional attachment is the most critical attitudinal antecedent of loyalty (Sui & Baloglu, 2003). Another study on store atmosphere and loyalty considers, when being familiar with the store, you may have experienced some pre-conditioned emotional responses that would override the emotions induced by the store atmosphere (Donovan et al., 1994). An example of a pre-conditioned emotional response can be the satisfaction with the store. Because satisfaction in turn is preceded by a mood state (Bloemer & de Ruyter, 1999), we could assume that the presence of an ambient scent cannot influence the previously determined and established mood state. Whether this mood state already has been predetermined, is based on the degree of loyalty. Thus, these assumptions result in the following hypothesis:

H2: The effect of ambient scent on the consumer's shopping mood will be weaker when having a high store loyalty

1.5.3 In-store crowding

Many interrelated terms are used in empirical work on crowding, such as density, perceived density and perceived crowding (Mehta, 2013). In many of these studies, the terms are

used interchangeably. Density is defined as an objectively measurable variable (Eroglu & Machleit, 1990) or a physical state (Mehta, 2013), involving spatial limitation. Since it is cited that density can come from both people and objects, two types of density can be distinguished: spatial and social density (Mehta, 2013). Spatial density is created by objects or physical stimuli (Machleit, Eroglu, & Mantel, 2000). In a retail setting, this could be the amount of merchandise, as well as the layout of the store. This in contrast to social density, which is referred to as the actual number of people in a given space (Mehta, 2013). Human crowding refers to the same phenomenon, only the social interaction among people in the given location is included too (Byun & Mann, 2011; Eroglu et al., 2005; Machleit et al., 2000).

In general, we can state that crowding is created by levels of density (Eroglu & Machleit, 1990). When referring to crowding, which is subjective and individual, it is the same as speaking of perceived crowding. Therefore, perceived crowding can differ between different persons in the same space. This can be due to a lot of factors, including personal, situational (Eroglu et al., 2005) and cultural variables (Machleit et al., 2000; Mehta, 2013). Crowding is a psychological state that is the result of an excessively high rate and number of environmental stimuli, both spatial and social (Byun & Mann, 2011; Eroglu & Machleit, 1990).

One theory deals with this phenomenon of perceived crowding, namely the Social Impact Theory (SIT) (Argo et al., 2005). The theory suggests that people are influenced by the real or implied presence of others. Three important factors define the functionality of the theory, namely social size, immediacy and the strength of the source. Argo et al. (2005) found an inverted U-shape function when it comes to the social size. For example, people preferred one person present in the retail space over no one or three persons present (Argo et al., 2005).

To sum up, crowding is defined by a psychological state that is the result of an excessively high rate and number of environmental stimuli, both spatial and social (Byun & Mann, 2011; Eroglu & Machleit, 1990). In this study, perceived in-store crowding will be measured based on this definition.

In-store crowding can influence the consumer's mood. A study of d'Astous (2000) concluded that crowdedness in a store has a negative effect on the mood state of consumers. This because, women more than men, are more irritated in a crowded situation (d'Astous, 2000). Also, Eroglu and Machleit (1993) stated that consumers' feelings while shopping are affected by the level of perceived crowding. Furthermore, as the above definition of crowding claims, crowding is a result of an excessively number of

environmental stimuli (Byun & Mann, 2011; Eroglu & Machleit, 1990). Adding an ambient scent to the environment will only add more stimuli, which in turn would make the negative effect on the mood state even be bigger. Thus, combining these effects of both ambient scent and crowding on the shopping mood of the consumer, brings the ensuing hypothesis:

H3: The effect of ambient scent on the consumer's shopping mood will be weaker when consumers are perceiving a high level of crowding.

1.5.4 Shopping motivation

Recently, the perspective that shopping is only a utilitarian activity, where we want to accomplish our shopping goals in an efficient and timely manner with as little as possible irritation or distraction (Childers et al., 2001), has been abandoned by researchers (Bagozzi et al., 1999; Kang & Park-Poaps, 2010). Now, there is a rise of hedonic values as a motivation to go shopping, for instance shopping for leisure and pleasure (Hoffman & Novak, 1995; Kang & Park-Poaps, 2010). Visiting a store in the utilitarian case, is motivated by purchase needs or the desire to obtain product information (Dawson et al., 1990).

It already has been pointed out that the effect of a store atmosphere might be moderated by a consumer's shopping motivation (Babin & Darden, 1995; Michon & Chebat, 2004). Many shopping motivations are at play, but the distinction of a utilitarian and a hedonic shopping motivation is the most important in this study (Childers et al., 2001; Faber & Christenson, 1996). A utilitarian motivation is task-related, rational and often seen as a work mentality, where there is no place for pleasure (Babin et al., 1994; Childers et al., 2001). Although, the hedonic typology gives us most to investigate. With this motivation, consumers are sensitive to the shopping environment and the atmosphere, since amusement and pleasure is their goal (Childers et al., 2001). The presence of an ambient scent could influence these shoppers, rather than it would influence utilitarian shoppers (Doucé & Janssens, 2013).

Thus, a pleasant environment is a condition for hedonic shoppers to be satisfied, so a hedonic shopping motivation will have a positive impact of the use of an ambient scent in a retail environment (Doucé & Janssens, 2013). Moreover, Wagner and Rudolph (2010) concluded that shoppers with high hedonic values want increased levels of sensory stimulation, by which they are more attracted to a store. As a consequence, hedonic shoppers experience a certain openness to emotions and mood states (Babin et al., 1994; Doucé & Janssens, 2013). Due to this difference in shopping motivations, the following hypothesis can be set up, related to a moderation of shopping motivation on the relation between ambient scent and shopping mood:

H4: The effect of ambient scent in a retail environment on the consumers' shopping mood will be higher when consumers are having a hedonic shopping motivation, compared to shoppers with a utilitarian shopping motivation.

1.5.5 Time spent in store

From a managerial perspective, there is more interest in what positive and actual responses are of an ambient scent in a store. This study will focus on one specific actual shopping behavior: time spent in store. The time spent in store is often associated and taken together with money spent in store. For example, research shows that diffusing a scent into a retail environment can change people's perception of time and immediately affect the decision to purchase (Bell & Bell, 2007).

The effect of the mood state of the consumer is expected positive since previous research has determined that both pleasure and arousal mood states are significant predictors of extra time spent in the store (Donovan et al., 1994). Also, when being in a good mood while shopping, people spend more time than initially intended (Sherman & Smith, 1987). Thus, the following hypotheses can be offered:

H5a: If the consumer is in a good mood, he/she will spend more time in the retail store.

After assuming an effect of ambient scent on the mood state of the consumer (H1) and an effect of the mood state on the time spent in store (H5a), a mediating effect of the shopping mood on the relationship between ambient scent and time spent in store can be deduced.

Based on the S-O-R model, the mood state of the consumer induced by the ambient scent will affect the time spent in store. More specifically, the shopping mood induced by store atmospherics appears to be a strong cause of consumers spending more time in the store than intended (Donovan et al., 1994). Thus, following the reasoning set forth by extant research on the S-O-R model, it was hypothesized that:

H5b: The effect of an ambient scent in a retail store on the time spent is mediated by the shopping mood of the consumer

1.5.6 Main effect: ambient scent and time spent in store

Independently of the mediating role of mood, this study will also investigate whether an ambient scent has a direct effect on actual shopping behaviors, the so-called Stimulus-Response (S-R) effect (Jacoby, 2002; Pan et al., 2017). Previous research already has confirmed that ambient scent can influence perceived time in store (Mitchell, Kahn, & Knasko, 1995; Spangenberg et al., 1996). For example, the presence of an ambient scent had a positive influence on positive actual shopping behavior (Doucé & Janssens, 2013). Moreover, in the presence of a gender-congruent scent shoppers spent more time in the store (Spangenberg et al., 2006).

The main effect of this study, the effect of an ambient scent on actual time spent in store is considered a positive effect. Leenders, Smidts, and Haji (2016) suggested that a pleasant ambient scent may increase the time spent in store. Spangenberg et al. (1996) confirmed this suggestion but added that the presence of a pleasant scent decreases the perceived time spent in store. The same result was found several times (Herrmann et al., 2013; Morrison et al., 2011; Sherman et al., 1997; Sherman & Smith, 1987), which leads to the following hypothesis:

H6: The presence of an ambient scent has positive effects on the time spent in store.

2   Methodology

2.1   Field experiment

A field experiment was conducted in a local coffee- and lunch bar. In addition to this bar, there is a little shopping space where customers can purchase gadgets, second-hand clothes and products that are being used in the bar. Here, customers were asked to participate in the study at the end of their visit by completing a questionnaire. In addition to the questionnaire, customers were observed to determine the actual time spent.

In a between-subjects design, data collected over two consecutive weeks was compared. The first week is the control condition where no scent was present, while in the second week an ambient scent was diffused through the entire store. Also, the shop owners ensured that no special promotions or conditions would be launched during the two weeks of the study. The scent that will be used is a vanilla scent. This scent was diffused in an artificial way with a vanilla spray.

2.2   Scent selection

A vanilla scent has been used in previous research (Morrison et al., 2011; Spangenberg et al., 1996). This previous research has shown that a vanilla scent is a pleasant scent, in particular for females, and that it affects customer behavior by making them unconsciously stay longer in a store (Hultén, Broweus, & van Dijk, 2009; Spangenberg et al., 1996). The selection of the scent is also based on the theory of congruent ambient scents (Bosmans, 2006; Mitchell et al., 1995). The coffee- and lunch bar where the experiment was conducted serves a lot of fresh bakeries, coffee, and lunch. A vanilla scent can be interpreted as a congruent scent at this place. Thence, using a vanilla scent would be a good choice in this context. The selection of this scent and method was in consultation with the owners of the coffee place.

2.3   Data collection and sampling

In a natural testing situation, like in this coffee- and lunch bar, self-reported questionnaires are a good method to measure emotions in an explicit way (Danner et al., 2016). Furthermore, coffee shops seem to provide an appropriate service context in which to study the impact of store-related perceptions and customers emotions on actual store behavior.

The study took place on three days in each week: Tuesday, Thursday and Friday. In order to have a broad-based sample of customers, the data collection was performed on different times each day. However, the study in the second week is an exact copy of the first week in terms of days and times. Every customer that takes a seat in the store was asked to participate at the end of their visit. They were asked to complete a written/hardcopy questionnaire. In order to have a representative sample, approximately 50-100 customers would have needed to participate for each condition (Doucé & Janssens, 2013; Leenders et al., 2016; Mitchell et al., 1995).

The cover page of the survey describes the purpose of the study for the respondents. The first question tries to determine the consumers' mood. This question is followed by the questions asking after the store loyalty, the in-store perceived crowding and the shopping motivation. The questionnaire ends with some control and demographic questions. The questionnaire can be found the appendix (Appendix A).

In addition to the questionnaire, the actual time spent in the store was observed and listed for each customer individually. Also, other covariates were considered during the experiment, like weather and temperature. Although, no difference was observed between the two weeks.

2.4 Measures

The questionnaire consists of four sections: consumers' mood, consumers' loyalty to the store, perceived crowding, and consumers' shopping motivation. Measures are adapted from the extant literature on mood, consumer behavior in specific retail environments (Babin et al., 1994; Donovan et al., 1994; Leenders et al., 2016; Mehrabian & Russell, 1974; Spangenberg et al., 1996) and developed marketing scales (Bearden & Netemeyer, 1999; Bruner, 2009) (Table 1).

At the end of the survey, some questions are added as control variables. A first question asks about the initial intent of the shopping trip. According to the unique setting of the study, consumers could go to visit this store in order to eat, drink, or shop, or a combination of these three. This question is followed by a similar question with the same possible answers, asking what they actually did during their shopping trip. In addition, there is also a question about the amount of money being spent. There are four possible ranges to choose from, ranging from less than 10 euros to more than 40 euros. This is a non-binding question. To conclude, demographic questions are asked.

Since the store is located in Belgium, Flanders, a Dutch version of the survey is provided.

2.4.1 Consumers' mood

A commonly used method to measure the mood state of a customer is the Mehrabian and Russell's PAD semantic differential scale. The PAD scale was designed to measure emotional responses to environmental stimuli in a marketing context (Richins, 1997). In its original form, it contains 18 semantic differential items, six each for pleasure, arousal and dominance. Dominance is usually deleted as third basic emotional state (Donovan et al., 1994; Ryu & Jang, 2007). The PAD scale consists of bipolar pairs of adjectives at the outer poles of a semantic differential scale. Table 1 shows the different pairs. Using a 7-point semantic differential scale, the customers indicate the extent to which these emotions were triggered by the store (Doucé & Janssens, 2013).

Some studies used the modified version of the PAD scale, meaning the eight-item scale, where only the terms "happy" (as opposed to "unhappy"); "pleased" ("annoyed"); "satisfied" ("unsatisfied") and "contented" ("melancholic") are included to assess pleasure. For assessing arousal, the terms used here are "stimulated" (as opposed to "relaxed"); "excited" ("calm"); "frenzied" ("sluggish") and "aroused" ("unaroused") (Bearden & Netemeyer, 1999; Leenders et al., 2016). In order to be as accurate as possible, using the original scale for determining pleasure and arousal is preferred.

2.4.2 Store loyalty

Loyalty implies a certain level of continuity in how a customer is related to an object or store (Söderlund, 2006). A three-item scale was used to measure the level of loyalty a customer has towards the store. This scale was adapted from the scale provided by (Bruner, 2009; Hess, 1998) and uses a 7 point Likert with the following items: "I could easily switch from De Wereld van Alice to another store" (reverse coded), "I am a committed shopper at De Wereld van Alice" and "I feel a sense of loyalty to De Wereld van Alice" (Bruner, 2009).

2.4.3 Crowding

Perceived crowding can be measured using a four-item, seven-point Likert scale with following items: "The store seemed very crowded to me", "The store was a little too busy", "There wasn't much traffic in the store during my shopping trip" (reverse coded) and "There were a lot of shoppers in the store" (Machleit et al., 2000; Mattila & Wirtz, 2008).

2.4.4 Shopping motivation

Shopping motivation occurs when the consumer wishes to satisfy a need. This need may be utilitarian or hedonic. In order to measure what kind of needs customers want to satisfy,

a hedonic and utilitarian consumer attitudes scale is used (Bearden & Netemeyer, 1999) (see Table 1). This scale contains eight semantic differential items that cover the two dimensions. Items are scored on 7-point scales (Batra & Ahtola, 1991).

2.4.5   Shopping behavior

In order to measure the actual shopping behavior, the actual time spent in store was measured with a single item (Spangenberg et al., 1996). It is not measured using the questionnaire, it will be observed and measured in accordance with prior literature (Leenders et al., 2016). The time will be measured from the moment they enter the store until the moment they are asked to participate to the study. Here, the time of arrival and the time of leaving/queuing to pay was noted, deriving in a time spent in minutes. This only measures the actual minutes spent in the store, not how these minutes were spent. Therefore, two additional questions were added as control variables.

The actual money spent in store is not measured explicitly as this is a rather more sensitive variable to ask the customers. Since, the same effect is expected as with the actual time spent, the analysis will be executed only on time spent as an output variable. The money spent in store will be used as a robustness check.

2.5   Analytical methods

IBM SPSS was used to perform the analyzes. A multiple regression was performed to determine if the independent variable has a unique effect on the mood state of the consumer. As stated in the literature review, the relation between scent and mood is expected to differ depending on consumers' store loyalty, perceived crowding and shopping motivation. These effects are tested by looking at their interaction effect with scent.

Also, another multiple regression is executed to test for the effect of mood on time spent in store and the presence of an ambient scent on time spent in store. This regression checked for gender and age effects, and the three moderating variables as control variables.

In addition, it was tested whether there was a mediation effect from the mood state of the consumer using the four-step method by Baron and Kenny (1986). For this, three single and one multiple regression were performed.
At the end, a robustness check with money spent as a variable was conducted.

Shopping mood (12 items)		7-point semantic differential scale	(Mehrabian & Russell, 1974)
Pleasure	Happy – unhappy Pleased – annoyed Satisfied – unsatisfied Contented – melancholic Hopeful – despairing Relaxed – bored		
Arousal	Stimulated – relaxed Excited – calm Frenzied – sluggish Jittery – dull Wide awake – sleepy Aroused – unaroused		
Store Loyalty (3 items)	"I could easily switch from … to another store" (r) "I am a committed shopper at …" "I feel a sense of loyalty to …"	7-point Likert scale	(Bruner, 2009; Hess, 1998)
Perceived Crowding (4 items)	"The store seemed very crowded to me" "The store was a little too busy" "There wasn't much traffic in the store during my shopping trip" (r) "There were a lot of shoppers in the store"	7-point Likert scale	(Bearden & Netemeyer, 1999)
Shopping Motivation (8 items) *Utilitarian*	Useful – useless Valuable – worthless Beneficial – harmful Wise – foolish	7-point semantic differential scale	(Bearden & Netemeyer, 1999)
Hedonic	Pleasant – unpleasant Nice – awful Agreeable – disagreeable Happy – sad		
Time spent in store (1 item)	Measuring actual time spent from time of arrival until the moment they leave (in minutes)	/	(Leenders et al., 2016)

Table 1: Overview used measures/scales (r = reverse coded)

3 Results

3.1 Sample characteristics and scale reliabilities

A total of 125 respondents took part in this study. 65 in the first week (control) and 60 in the scented week. In total there were 30 men, of which 16 were present in the scented week. The average age in total was 36,01 (SD=14,69). In the control condition the average age was 33,38 (SD=13,18), this is lower than in the scented condition were there was an average age of 38,53 (SD=15,93). But, this little difference is due to a small outlier in the first week. Because in both weeks there was a minimum age of 15, but in the first week a maximum age of 83 and in the second week this was only 73. This finding was confirmed by executing an independent t-test, which confirmed no significant difference (t(123) = -1,804, p >0,05).

The results show that the average time spent in store over the two weeks was 67 minutes (SD=29,92). For the first week only, it was 58,12 minutes (SD=25,10) and for the second, scented, week it was 76,62 (SD=31,89). Which already gives us a little finding of the direct effect on the presence of an odor on the time spent in a store.

	N	Minimum	Maximum	Mean	SD
Control	65	18	115	58,12	25,104
Scented	60	27	155	76,62	31,885
Total	125	18	155	67,00	29,918

Table 2: Descriptive statistics 'Time spent in store'

In order to prepare the data, a scale reliability measure was used to be sure the different scales were able to measure the proposed constructs. The measure used was Cronbach's α. The first scale inquires the shopping mood of the consumer and consists of two factors. The first six items should refer to pleasure and the last six items to arousal. For the first six items, the Cronbach's alpha was found to be .856. This a very high value, which means a high internal consistency, which in turn means that the six items all measure the same construct, namely pleasure. And in turn, the six items were used to compute a new variable 'Pleasure'. The last six items have a Cronbach's α of .617. This is a rather questionable value since extant literature agrees upon .70 as a lower limit (Tavakol & Dennick, 2011). However, removing one or more items of this scale won't raise the reliability much,

therefore, the lower limit can decrease to .60 (Hair, 2014). The factor 'Arousal' is computed from the last six items of this scale.

The same is done for the other scales, determining loyalty, crowding, hedonic motivation and utilitarian shopping motivation. After computing the alpha for the loyalty scale (α=.633), the first item of the scale was removed to get a more reliable scale with an alpha of .869. The first item was removed here because it raised the internal consistency extremely. Thus, the degree of consumers' loyalty to the store will be determined by two items.
The alpha for the perceived crowding scale of four items was .614. As well as for the factor Arousal, we consider a lower reliability limit of .60. All four items measure the perceived crowding in store.

The last variable is shopping motivation. From this last scale, the first four items should measure utilitarian shopping motivation, an alpha of .831 confirmed this. All four items were consistent in measuring utilitarian shopping motivation. The remaining four items represent the hedonic shopping motivation. These items were found to be very internal consistent with an alpha of .924. Therefore, these four items were included in computing the variable representing the hedonic shopping motivation. Considering the expectation that the effect of ambient scent on shopping mood will be higher for consumers with a hedonic shopping motivation, compared to shoppers with a utilitarian shopping motivation, a dummy variable is created (hedonic = 1; utilitarian = 0).

Scale	Cronbach's α
Pleasure (PAD)	0,856
Arousal (PAD)	0,617
Store loyalty	0,869 (0,633)
In-store crowding	0,614
Utilitarian shopping motivation	0,831
Hedonic Shopping motivation	0,924

Table 3: Scale reliabilities

3.2 Hypotheses testing

A multiple regression is used to test for the first four hypotheses. The independent variables included in this model are scent, loyalty, in-store crowding and shopping motivation. The dependent variable is the consumers' shopping mood. Hypotheses 2, 3 and 4 are the moderation effects. Moderation effects are usually discussed as an interaction between variables. In order to test the moderation effects of story loyalty, in-store crowding and shopping motivation, next to these variables, their interaction terms with scent, where added to the model as independent variables. Mean-centered values of the independent and moderating variables were used. In this way, multicollinearity and larges standard errors are reduced, but moreover, it enhances the interpretability of data, whereby the direct effects in the regression could be well-interpreted. The outcome of this regression analysis can be found in Table 4.

	B	Std. Error	t	Sig.
(Constant)	,068	,591	,115	,909
Scent	2,141	1,183	1,810	,073
Loyalty	-,197	,163	-1,211	,228
Crowding	-,233	,117	-1,988	,049
Shopping motivation	2,348	1,450	1,619	,108
Scent*Loyalty	,274	,323	,846	,399
Scent*Crowding	,117	,236	,496	,621
Scent*Shopping motivation	-1,936	2,906	-,666	,506

Table 4: Multiple regression with shopping mood as dependent variable

3.2.1 Ambient scent

In contrast to the expected positive effect of ambient scent on the consumers' shopping mood, no significant effect can be found (β = 2,141, p>.05), this effect is only marginally significant (p = 0,73). We reject hypothesis 1.

3.2.2 Store loyalty

The moderating effect of the shoppers' degree of store loyalty on the relation between ambient scent and shopping mood state is not significant (β = ,274, p>.10). In contrast to the expectations, the relationship between ambient scent and shopping mood is not affected by the degree of store loyalty of the consumer. This contradicts hypothesis 2.

3.2.3 In-store crowding

A negative linear effect was expected for the moderation effect of in-store crowding on the relation between ambient scent and shopping mood. Results show that this moderating effect is not significant (β = -,117, p>.10). Hypothesis 3, stating that the effect of ambient scent on the time spent in store is the strongest when consumers perceive a moderate level of crowding, is rejected. On the other hand, the variable for in-store crowding itself does have a significant effect on shopping mood (β = -,233, p<.05).

3.2.4 Shopping motivation

In like manner, the interaction term with scent was added to the multiple regression. Results show no significant effect (β = -1,936, p>.10). The relation between scent and shopping mood is not influenced by a consumers' shopping motivation. Hypothesis 4 cannot be supported.

3.3 Time spent in store

In order to test for hypotheses 5a, 6 and the overall effect on time spent in store, another multiple regression is executed. The independent variables included in this model are scent and shopping mood. Also, loyalty, crowding and shopping motivation are added to the model to control for their effects on time spent in store as control variables. Finally, all other control variables were added to the model (Section 3.5).

The outcome of the regression analysis (Table 5) shows that four variables are significant predictors for the time spent in store: the presence of an ambient scent, store loyalty and two other control variables. For shopping mood, crowding and shopping motivation no significant effect on time spent can be found. Thus, the theory that a mood state could have an effect of time spent in store isn't supported here. Therefore, hypothesis 5a cannot be confirmed based on these results.

The multiple regression model confirms hypothesis 6. There is significant direct effect of ambient scent on time spent in store (β = 12,702, p<.05). We even see a strong positive effect.

The other significant predictor for time spent in store is store loyalty (β = -2,763, p<.001). The results show a negative significant effect on time spent in store. This effect is unrelated to this study or the proposed hypotheses but shows that there is a direct effect between loyalty and time spent. Meaning that when a consumer has a high store loyalty he will spend less time in a store.

Multiple regression	B	Std. Error	t	Sig.
(Constant)	-,002	2,290	-,001	,999
Scent	12,702	5,160	2,462	,015
Shopping mood	,554	,378	1,465	,146
Loyalty	-2,763	,674	-4,099	,000
Crowding	,012	,498	,024	,981
Shopping motivation	,964	5,880	,164	,870
Age	,031	,173	,177	,859
Gender	5,853	5,613	1,043	,299
Morning	16,808	8,770	1,917	,058
Noon/Lunch	,768	7,837	,098	,922
Initial eating	-10,051	13,062	-,769	,443
Initial drinking	2,110	12,141	,174	,862
Initial shopping	25,574	16,239	1,575	,118
Actual eating	30,309	12,971	2,337	,021
Actual drinking	10,257	10,010	1,025	,308
Actual shopping	45,002	20,699	2,174	,032

Table 5: Multiple regression with time spent as dependent variable

3.4 Mediating role of mood

In order to determine whether mood mediates the relationship between ambient scent and time spent in store, the four-step plan of Baron & Kenny (1986) was used. For this, three single and one multiple regression had to be performed. Four conditions need to be met in order to have a mediation effect. First, the independent variable needs to have an influence on the mediating variable. The second condition states that the independent variable influences the dependent variable, the direct effect. The third condition consists of the mediating variable influencing the dependent variable. Finally, the last condition says that the effect of the independent variable should decrease when the mediator is added. Using this method of three single regressions and on multiple regression, moderating variables are not included (Baron & Kenny, 1986). Because the interpretation of mediation in the presence of moderation can be complex statistically and conceptually, moderators are not included in this model and only checked for the relation on ambient scent and shopping mood (Baron & Kenny, 1986; MacKinnon, 2011).

In a first step, a single regression was performed with ambient scent as an independent and mood as the dependent variable. Ambient scent proved to be a significant predictor of mood ($\beta = 2.537$, $p<.05$). That is, when an ambient scent is present in a retail environment it has a positive effect on consumers' shopping mood. Here, in contradiction to earlier results, hypothesis 1 is confirmed by computing only a single regression. This may indicate the presence of moderating effects since adding them to the regression reduces or even withdraw the significance of the direct effect of ambient scent on mood.

In the second step, the relation between ambient scent and time spent in store was tested in the form of a single regression. This direct effect of ambient scent on time spent seemed to be significant ($\beta = 18.494$, $p<.001$). So, the presence of an ambient scent has a positive effect on the time spent in store. This already supports hypothesis 6a.

Subsequently, in the third step, a single regression was tested with mood as independent and time spent as the dependent variable. The analysis showed that mood isn't a significant predictor of time spent in store ($\beta = .779$, $p>.05$). This is a doubtful result since the significance was equal to 0,051 which is just above the significance level of 5 percent. This p-value of 0,051 is marginally significant, because it would be significant at a 10 percent significance level. Assuming the third condition is also met, we proceed to the last step.

When performing the fourth step, a multiple regression with ambient scent and mood as independent variables and time spent in store as dependent variable, we could see if adding mood as a second independent variable to the model will reduce the effect of ambient scent on time spent. This is indeed the case ($\beta = 17.131$, $p<.01$), thus the fourth condition is met. We can conclude that partial mediation of the mood state of the consumers occurs on the relation between ambient scent and time spent, which supports hypothesis 5b.

	Time spent in store		Mood	
	β	SE	β	SE
Step 1				
Ambient scent			2.537*	1.185
Step 2				
Ambient scent	18.494***	5.113		
Step 3				
Mood	.779	.396		
Step 4				
Ambient scent	17.131**	5.188		
Mood	.537	.388		

Note: *p<.05, **p<.01, ***p<.001

Table 6: Mediation analysis (Baron & Kenny, 1986)

3.5 Control variables

3.5.1 Age en gender

Two demographic control variables were added to the multiple regression model with time spent in store as dependent variable. Both for age and gender, no significant effects could be found (age: β = .031, p>.05; gender: β = 5,853, p>.05). Correspondingly, the demographic characteristics of the consumers does not impact the effect of scent on time spent in store. No differences exist between either young and old shoppers, nor male or female shoppers.

3.5.2 Initial versus actual planning

In the questionnaire two questions were added that asks after what the consumers initially wanted to do in the coffee- and lunchbar, and what they actually did. Comparing these responses could give us an additionally measure in the extent of what the effect of scent is on the time consumers spent, and how they spent it. Is there an effect on the way they wanted to spend their shopping trip?

Results show that in total 17 respondents changed their plan while in the coffee- and lunch bar. eight of them in the control condition and nine of them in the scented condition. An overview can be found in the Appendix (Appendix 2). Relevant is to look at whether they wanted to do more or just less, and what exactly differed.

In the control condition, two consumers came to have a drink, but actually ended up eating and drinking during their visit. Four other consumers only wanted to eat something, but actually also stayed for a drink. Another customer wanted to eat and drink something but did only eat something. Then finally, one respondent came to eat and drink and buy something in the shop but ended up only drinking in the bar. So here, six customers did more than they initially planned to do, and two customers did less.

In the scented condition, one customer only wanted to drink something, but ended up eating and drinking. Another person did the other way around and wanted to eat and drink but only stayed for a drink. Two customers only wanted to eat but extended their stay by also drinking something. Two other customers who wanted to shop, didn't do that, one did only drink like planned, the other only did eat like planned. One person that planned to only drink something, actually only did eat something. The last two customers that changed their plan, only changed the fact that they didn't want to buy something from the shop but actually did, that besides eating and drinking like planned. In summary, five customers did more than they had planned, three did less and one just changed plans. To conclude, it is almost the

same for the two conditions, there cannot be found a significant difference. The only striking thing is that here customers have entered the retail space to buy something, while that was not actually their plan. However, no pattern can be found from the data.

Besides this descriptive analysis of this control variable, the variables were added to the multiple regression analysis to test whether they have a direct effect on the time spent in store. For the 'Actual eating' variable and 'Actual shopping' variable significant effects are found (Table 5). Customers who eat breakfast or lunch in the bar tend to spend more time in the store (β = 30,309, p<.05). Also, people who purchase something in the shopping space spend more time (β = 45,002, p<.05).

3.5.3   Shopping trip at which time of the day

The experiment was conducted over two weeks, three days each week. The time of the day when customers were asked to fill in a questionnaire was not the same for each day. The time of the day may have an impact on the time spent in store. Therefore, two dummy variables were created in order to determine when the customers visited the shop: in the morning, around lunchtime or in the afternoon. According to logical reasoning, it can be expected that customers stay longer during the morning or around lunch, because mostly it is associated with having a meal.

Both dummy variables were added to the multiple regression model. Results show that neither of them are significant predictors for the time spent in store. Not the 'Morning' dummy (β = 16,808, p>.05), nor the 'Noon/lunch' (β = ,768, p>.05) were significant predictors for the times spent in store. The p-value for the morning dummy has a rather marginally significant value of 0,058.

3.6   Robustness check

Because the same effect on time and money spent in store was assumed, we took only one of these dependent variables into data analysis. A question was added to the survey to check whether it is correct to make this assumption. If the assumption that time spent in store equals more money spent in store, the same effects should occur for both variables. To test this assumption, all regressions were executed again with money spent in store as dependent variable instead of time spent in store.

In contrast to our findings for time spent in store, the presence of an ambient scent does not have a significant effect on money spent in store (β = 0,225, p>.05). Neither does store loyalty (β = -,006, p>.05). But in line with previous results for time spent in store, the two

control variables indicating the activity in store, are also significant predictors for money spent in store. Customers who eat something spend more money in the store ($\beta = 1,121$, p<.01), just like customers who purchase something in the store ($\beta = 1,472$, p<.05). The effects are smaller but still significant. An overview can be found in the Appendix (Appendix 3).

The method of Baron & Kenny (1986) will also be used to examine if a consumers' shopping mood mediates the effect between an ambient scent and money spent in store. Results show that no significant relationship can be found, meaning that no mediation effect of shopping mood occurs between ambient scent and money spent in store (Appendix 3).

General Conclusion

3.7 Research findings

The purpose of this study was to determine whether the presence of an ambient scent in a real-life store environment would extend the time consumers spent in this store. More specific, it was examined whether the shopping mood of the consumer mediated this effect of ambient scent on the time spent. Furthermore, three specific variables were considered and investigated as possible moderators on the relationship between ambient scent and shopping mood. This research question was examined by conducting a survey during an in-store field experiment. Results showed that customer stayed longer when an ambient scent was diffused to the store.

3.7.1 Theoretical implications

Ambient scent and shopping mood

The results show that when an ambient scent is present in a store environment, the shopping mood of the consumer is positively affected. This finding is in line with what was proposed in hypothesis 1. This reinforces previous propositions in literature, stating the fact that ambient scent enhances positive mood states (Bone & Ellen, 1999; Davies et al., 2003; Spence et al., 2014). This effect of scent on mood may be related to previous social experiences with odors or other learned associations (Bone & Ellen, 1999). The usage of ambient scent has been seen as a potential for researchers to use smell as a trigger of pleasant associations, which is another confirmation for the positive effect found (Davies et al., 2003). As well, this effect of ambient scent on shopping mood can differ depending on individual differences. This study proposed three possible moderators.

The degree of store loyalty a consumer has, was hypothesized to negatively influence the relationship between ambient scent and mood. Although, this hypothesis cannot be supported according to the results. No moderation effect was found. This is in contrast with previous findings. For the reason that, having a high degree of store loyalty represents having a high level of satisfaction and commitment to the store, which in turn implicates that these consumers would not be affected by the presence of an ambient scent (Sui & Baloglu, 2003). This phenomenon can be explained based on the most important antecedent of store loyalty, store satisfaction (Bloemer & De Ruyter, 1998). To reach store loyalty, you first need to be satisfied with the store. Bloemer and De Ruyter (1998) found that a positive mood state is reached before being satisfied. Hence, store loyal consumers

already have a positive shopping mood in store, and therefore are resistant to the presence of an ambient scent.

A second proposed moderating effect on the relationship between ambient scent and shopping mood was the perceived crowding in store at the time of visit. It was assumed from literature, using the insights from the Social Impact Theory, that consumers are negatively influenced by real or implied presence of other shoppers (Argo et al., 2005; d'Astous, 2000; Eroglu & Machleit, 1993). In addition, next to the presence of an ambient scent, consumers could be irritated or overwhelmed by the excessive number of stimuli. This expected negative moderating effect could not be confirmed by the results. This may be due to the experiment context of this study. Other research about the moderating effect of in-store crowding was mostly about real retail environments, while this experiment is conducted in the hospitality industry. People took place in the 'store' rather than walking around, which could give another feeling of crowding.

A last suggested influence in this study was the shopping motivation of consumers. A distinction has been made between hedonic and utilitarian shoppers. Since hedonic shoppers are seeking for a pleasant and sensory environment, it was expected that for these shoppers, the effect between ambient scent and mood would be strengthened. In contrast to the expectations, no significant effect was showed by the results. A rather unexpected outcome, since extant research already pointed out the moderating effect of shopping motivation on the relation between store atmospherics and shopping mood.

The mediating role of mood on the effect of ambient scent on time spent in store

Extant literature considers mood and affect shifts as most frequently proposed mediators of ambient scent effects on behavior (Bone & Ellen, 1999). However, conflicting evidence exists about this mediating effect. The purpose of this study was to identify the mediating effect on the relation between ambient scent and time spent in store. In contrast to the ambiguous results in extant literature, a mediator analysis in this study showed that mood is a mediator for the effect of scent on time spent in store (Leenders et al., 2016). When an ambient scent is present, people are positively affected by this scent, which in turn let them stay longer in the store. This supports the findings by Donovan and Rossiter (1982) and Sherman et al. (1997), proving the existence of the mediating effect. Although, it contrasts previous research that did not found significance for this mediating effect (Leenders et al., 2016; Morrin & Ratneshwar, 2003). A possible explanation for the difference between the findings in this study and their results may lie in the fact that for the study of Morrin and Ratneshwar (2003) a lab-experiment was conducted instead of a real-life experiment and for the study of Leenders et al. (2016) the mediating effect of mood on the relationship between ambient scent and evaluations was tested rather than actual shopping behaviors.

Furthermore, Leenders et al. (2016) stated that the effect of scent on approach behaviors, like time spent, was more likely to be direct. This is in contrast with our results, where no significant direct effect can be found from shopping mood on time spent in store (H5a). However, the findings showed strong support for the overall direct effect of ambient scent on time spent in store. Hypothesis 6 assumed that the presence of an ambience scent would positively affect the time customers spent in a store. In fact, this hypothesis was approved by the results. This is in line with previous literature and confirms the aim of this study.

Control variables

Some control variables are included in the study. Deriving from literature, gender is expected to moderate ambient scent effects since women are more sensitive and have more developed schemas with regard to olfactory cues (Bone & Ellen, 1999). In contrast to this proposition, the results did not show any significant effect of gender on time spent in store. As well, the age of consumers does not significantly impact the effect on time spent in store. This is in contrast to the assumptions that older consumers are more likely to experience some problems in understanding and responding to marketing stimuli (d'Astous, 2000), and that there is a decline in the ability to recognize and recall scents for older consumers (Chebat et al., 2009).

Two other types of control variables were added to the study in order to get some insights in the time spent in store by consumers. The first was to determine how they want to spend their shopping trip, and how they then actually spend it. Did they change their plans? No significant difference was found here whether there was a scent present in store or not. Adding these variables to the regression model on time spent in store, pointed out that when people actually eat or purchase something in the store, they spent more time. For eating, it is a logical outcome considering that eating is a more time-consuming activity then drinking. The fact that purchasing something also increases the time spent, probably depends on the fact that it is an extra activity and not a main activity. Results show that people didn't visit the store only for shopping, but rather to eat or drink something, sometimes extended with a quick visit to the shopping space.

The time of the day on which consumers visited the shop or bar, didn't influence the time spent in store. It might be suggested that when the visit occurred during the morning or noon, associated with breakfast or lunch respectively, consumers would spend more time in store. However, no evidence was found for this assumption.

3.7.2 Managerial implications

For retailers, it is essential to know, when using an ambient scent as store atmospheric and sensory marketing cue, how to actually use this and what the effects can be on consumers and their behavior. This study focused on two big effects of the presence of an ambient scent in store. On the one hand, it examined the effect on the time spent in store by consumers, on the other hand it took into account the possible mediating effect of shopping mood on the proposed direct effect of ambient scent and time spent. First of all, this research shows that diffusing an ambient scent in store excessively increases the time spent in the store. This effects also exist indirect through the shopping mood state. For this reason, ambient scent can be used as a marketing element in order to maintain customers for a longer period in store. The study strengthens previous theory of the use of ambient scent, by investigating the effects in a real-life setting. Extant research about ambient scent examined these effects in lab experiments.

Besides this direct and mediating effect, a distinction was made between different consumers. Store loyalty, in-store crowding, and shopping motivation were suggested to influence the relationship between ambient scent and mood. At least, no support was found for the moderating effects of this possible individual differences. Neither for the age and gender of the consumers. So, based on these results, individual differences should not be considered when trying to use ambient scent in order to let consumers spent more time in the store.

Moreover, the study assumed that when people spend more time in a store, they automatically spend more money in the store. A robustness check was performed to investigate this assumption. Neither for the direct effect of ambient scent on money spent, nor for the mediating effect of mood on the relation between ambient scent and money spent, a significant effect was found. Retailers therefore could not link more time spent in store to more sales. This raises the question for what reason a retailer would want consumers to stay longer in the store.

Although, another effect that could be relevant for retailers is the direct effect of store loyalty in time spent in store. Results show that a consumer with a high degree of store loyalty, tends to spend less time in the store. Even though, it may be hard to distinguish store loyal customers from nonloyal customers. Loyal customers are defined by their commitment made in store, which means you cannot identify a loyal customer at sight, when walking in the store.

3.8   Limitations and further research

The fact that the majority of the proposed hypotheses could not be confirmed, may have been due to methodological factors. These factors may be seen as limitations of this investigation and as warnings or recommendations for possible future research.

First of all, the aim of the study was to examine the effect of ambient scent in a retail environment. Due to a limited choice of stores who want to participate in this study, the in-store field experiment was conducted in a small, local coffee and lunch bar. An environment with a unique setting, because next to the consuming space, a shopping area was present too. Three major consequences can be derived from this limitation. Firstly, the research findings are not generalizable for the retail industry since the experiment was conducted in a store or bar that is more in line with the hospitality industry. Nor can the results be generalized for this industry since it was only a small bar with limited customers a day. Which brings us to the second consequence, being the fact that only 125 respondents were reached. A larger number of respondents would have yielded more reliable and more generalizable results. With a large sample, for example, significant effects could occur regarding the moderating variables. A sample size that is too small can ignore certain existing effects (Simmons, Nelson, & Simonsohn, 2013). A third consequence is due to the clientele characteristics of the participating store. The store is well known to attract on average more women than men, resulting in a sample size that consists of more women than men. For this reason, conducting the study in another retail environment with a bigger sample size, could give more insights into the effect of ambient scent on shopping mood and behavior. Subsequently, during this in-store field experiment, a survey was used as data collection method. Since a survey involves self-reporting behavior, it benefits the measurement of the shopping (Danner et al., 2016), but it can influence consumers' degree of loyalty and their perceived crowding.

Further, the presence of an ambient scent in a retail environment and its associated effects is the central question in this study. But the selection of the scent being used in the experiment, was only based on simple literature review, like the congruency theory (Bosmans, 2006). Moreover, only one scent was used, not taking into account different characteristics of scent, like intensity or pleasantness. It should be pointed out that different scents and different intensities or other characteristics of a scent could trigger different emotions and behaviors. Further research is needed in order to determine these differences.

Considering the other variables in the study, the effect of ambient scent on the shopping mood was significant. Nevertheless, this shopping mood could also be induced by another

antecedent than the presence of the ambient scent. We have no proof that the mood state is really induced by the scent. Future research should measure the shopping mood prior to entering the store as well as some time after entering the store.

Additionally, the mediating effect of mood was measured using the four-step method of Baron and Kenny (1986). This is a well-known and often used method for measuring a mediation, though the indirect effect is not quantified using this method and every hypothesis has a margin of error (Hayes, 2009). Additional tests like the Sobel test and bootstrapping could strengthen the results (Hayes, 2009).

Both the direct effect of ambient scent and the indirect through the shopping mood were tested on the time spent in store. Thus, only one possible behavior was included in the study. But maybe other behaviors could have the same or opposite effects. This provides an opportunity for further research.

Finally, this research focused only on one specific store atmospheric, ambient scent. In real life, a retail environment is not only adding scent to the store, also other cues will be present. Possible atmospherics could be music, colors, light… This study held the other ambient cues constant. Thus, in order to be able to make better substantiated statements about the results, more studies should be conducted that focus on different store atmospherics and the possible combinations.

Appendices

Appendix 1: Survey

Beste,

Allereerst wil ik u bedanken voor uw deelname aan dit onderzoek. Ik ben een laatstejaarsstudent in de richting Handelsingenieur aan de KU Leuven en in het kader van mijn masterproef doe ik een onderzoek omtrent het consumentengedrag van de klanten in De Wereld van Alice. Het doel is om inzicht te krijgen op hoe klanten reageren op een bepaalde winkelruimte en -sfeer.

Het invullen van deze vragenlijst zal hoogstens vijf minuten in beslag nemen. Uw deelname is volledig vrijwillig en mag op elk moment stopgezet worden. Uw gegevens zullen vertrouwelijk behandeld worden.

Mocht u nog vragen of opmerkingen hebben over het onderzoek, kan u me steeds contacteren via *anke.vanmalder@student.kuleuven.be*

Nogmaals hartelijk dank voor uw deelname aan dit onderzoek,

Anke Van Malder

1. Duid hieronder voor elke omschrijving aan hoe u zich het meest voelde tijdens uw bezoek aan De Wereld van Alice.

Gelukkig	○	○	○	○	○	○	○	Ongelukkig
Verheugd	○	○	○	○	○	○	○	Geërgerd
Voldaan	○	○	○	○	○	○	○	Misnoegd
Tevreden	○	○	○	○	○	○	○	Melancholiek
Hoopvol	○	○	○	○	○	○	○	Wanhopig
Ontspannen	○	○	○	○	○	○	○	Verveeld
Geprikkeld	○	○	○	○	○	○	○	Relaxed
Opgewonden	○	○	○	○	○	○	○	Kalm
Uitzinnig	○	○	○	○	○	○	○	Traag
Overspannen	○	○	○	○	○	○	○	Saai
Klaarwakker	○	○	○	○	○	○	○	Slaperig
Opgewekt	○	○	○	○	○	○	○	Onverschillig

2. Duid hieronder aan op een schaal van 1 (helemaal niet akkoord) tot 7 (helemaal akkoord) in welke mate u akkoord bent met de volgende stellingen.

	Helemaal niet akkoord						Helemaal akkoord
	1	2	3	4	5	6	7
Ik kan gemakkelijk overstappen van De Wereld van Alice naar een andere (gelijkaardige) winkel/bar	○	○	○	○	○	○	○
Ik ben een trouwe bezoeker bij De Wereld van Alice	○	○	○	○	○	○	○
Ik heb een gevoel van loyaliteit ten opzichte van De Wereld van Alice	○	○	○	○	○	○	○

3. Duid hieronder aan op een schaal van 1 (helemaal niet akkoord) tot 7 (helemaal akkoord) in welke mate u akkoord bent met de volgende stellingen.

	Helemaal niet akkoord						Helemaal akkoord
	1	2	3	4	5	6	7
De winkel leek me erg druk	○	○	○	○	○	○	○
De winkel was een beetje druk	○	○	○	○	○	○	○
Er was niet veel verkeer in de winkel tijdens mijn bezoek	○	○	○	○	○	○	○
Er waren veel shoppers/klanten in de winkel	○	○	○	○	○	○	○

4. Duid hieronder voor elke omschrijving aan wat voor u het meest van toepassing is met betrekking tot uw motivatie of intentie om de Wereld van Alice te bezoeken.

"Ik bezoek de wereld van Alice omdat het ... is."

Nuttig	○	○	○	○	○	○	○	Nutteloos
Waardevol	○	○	○	○	○	○	○	Waardeloos
Gunstig	○	○	○	○	○	○	○	Nadelig
Verstandig	○	○	○	○	○	○	○	Onverstandig
Plezierig	○	○	○	○	○	○	○	Onprettig
Leuk	○	○	○	○	○	○	○	Verschrikkelijk
Aangenaam	○	○	○	○	○	○	○	Onaangenaam

"Ik bezoek de Wereld van Alice omdat ik er ... van word."

Blij	○	○	○	○	○	○	○	Verdrietig

5. Met welke intentie bent u naar de Wereld van Alice gekomen?
   - ○ Ontbijt/lunch
   - ○ Koffie/taart of 'even iets drinken'
   - ○ Artikelen uit winkel kopen

6. Wat heeft u werkelijk tijdens uw bezoek gedaan?
   - ○ Ontbijt/lunch
   - ○ Koffie/taart of 'even iets drinken'
   - ○ Artikelen uit winkel kopen
       (Zo ja, welke artikelen? ……………………………………………………………………………)

7. Hoeveel geld heeft u tijdens dit bezoek gespendeerd?
   - ○ < 10 euro
   - ○ Tussen 10 en 20 euro
   - ○ Tussen 20 en 30 euro
   - ○ > 30 euro

8. Wat is uw leeftijd?   ………………… jaar

9. Wat is uw geslacht?
   - ○ M
   - ○ V
   - ○ X

Bedankt voor uw deelname aan mijn onderzoek!

Appendix 2: Control variable analysis: Actual versus initial planning of shopping trip

CONTROL	Case Number	Initial			Actual		
		Eat	Drink	Shop	Eat	Drink	Shop
	16	**No**	Yes	No	**Yes**	Yes	No
	17	**No**	Yes	No	**Yes**	Yes	No
	54	Yes	**No**	No	Yes	**Yes**	No
	55	Yes	**No**	No	Yes	**Yes**	No
	56	Yes	**No**	No	Yes	**Yes**	No
	57	Yes	**No**	No	Yes	**Yes**	No
	64	Yes	**Yes**	No	Yes	**No**	No
	65	**Yes**	Yes	**Yes**	**No**	Yes	**No**

.

		Initial			Actual		
SCENTED	Case Number	Eat	Drink	Shop	Eat	Drink	Shop
	85	**No**	Yes	No	**Yes**	Yes	No
	115	Yes	No	**No**	Yes	No	**Yes**
	116	Yes	No	**No**	Yes	No	**Yes**
	117	Yes	**No**	No	Yes	**Yes**	No
	118	Yes	**No**	No	Yes	**Yes**	No
	122	**No**	**Yes**	No	**Yes**	**No**	No
	123	No	Yes	**Yes**	No	Yes	**No**
	124	Yes	No	**Yes**	Yes	No	**No**
	125	**Yes**	Yes	No	**No**	Yes	No

Appendix 3: Robustness check

Multiple regression with money spent as dependent variable:

Multiple regression	B	Std. Error	t	Sig.
(Constant)	,000	,066	-,006	,995
Scent	,225	,147	1,525	,130
Shopping mood	,007	,011	,680	,498
Loyalty	-,006	,019	-,309	,758
Crowding	-,004	,014	-,263	,793
Shopping motivation	,102	,170	,599	,551
Age	,005	,005	1,101	,273
Gender	-,297	,160	-1,860	,066
Morning	-,012	,253	-,048	,962
Noon/Lunch	,222	,225	,984	,327
Initial eating	-,233	,377	-,618	,538
Initial drinking	-,475	,348	-1,366	,175
Initial shopping	-,307	,468	-,655	,514
Actual eating	1,121	,359	3,123	,002
Actual drinking	,353	,287	1,231	,221
Actual shopping	1,472	,581	2,534	,013

Mediation analysis (Baron & Kenny, 1986):

	Money spent in store		Mood	
	β	SE	β	SE
Step 1				
Ambient scent			2.537*	1.185
Step 2				
Ambient scent	.164	.168		
Step 3				
Mood	.014	.013		
Step 4				
Ambient scent	.133	.172		
Mood	.012	.013		

*Note: *p<.05, **p<.01, ***p<.001*

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