UCLouvain

LOUVAIN
School of Management

Louvain School of Management

# Measuring in-store customer experience online: an experimental study

Author: Sophie Vandenbemden
Supervisor(s): Prof. Nadia Steils
Academic year: 2021-2022
Dissertation for the master of Management
Daytime schedule

# Abstract

This master thesis examines the effects of spatially crowded supermarkets and emotionally salient packaging on customer experience, negative emotions, and purchase intention. Furthermore, it analyses the role of customers' shopping values as a moderator between the spatially crowded store environment on one side and the customer experience and negative emotions on the other side. The Customer experience has been split up in three different dimensions: the cognitive, affective, and physical dimension.

The results indicate that only the affective dimension of customer experience is significant for both the level of spatial crowding and the emotional saliency of the packaging. When we look at the effect of the customer experience and negative emotions on the purchase intention, we see that the cognitive and affective dimensions of customer experience are important, as well as the negative emotions. So, the indirect relationship between the spatial store crowding and purchase intention as well as the indirect relationship between the emotionally salient packaging and the purchase intentions are only significant through the affective dimension of customer experience.

The direct effect of the spatially crowded supermarket and the emotionally salient packaging on the purchase intention were both non-significant.

Furthermore, the customers' shopping values did not seem to have a moderating effect.



**Keywords: customer experience, supermarket environment, packaging, emotions, purchase intention**

# Acknowledgements

I would like to express special thanks to my supervisor Professor Nadia Steils, who has been a huge help during this thesis.

Many thanks to everyone who took the time to fill in and/or helped sharing the survey. Without them, it would not have been possible to successfully execute and complete this master thesis.

I would also like to thank my family who helped me to create the questionnaire and the stimuli. But most importantly, I thank them for their support and encouragement.

Last but not least, I am also thankful to my friends and all other people that directly or indirectly influenced me positively throughout this journey.

# Table of Contents

# Introduction

Over the years more and more attention has been given to customer experience as a measure of customer satisfaction. This is partly due to the shift from a provider-centric view to a customer-centric view of the customer's shopping journey (Becker & Jaakkola, 2020). Customers also show interest in in-store experiential moments, 32% of them say they are likely to engage with these. Brands respond to this demand by offering retail experiences to their customers. In fact, 40% of brands consider offering experiential retail as a top priority and 46% of brands are investing over the next year to improve the in-store experience (Damen, 2022). Through research, quickly became clear that the notion of customer experience was not easy to develop nor to measure because it considers a very broad array of elements. Soon, many different versions and interpretations made an appearance and the term became very confusing. (Bascur & Rusu, 2020). To cope with this, different authors tried to develop frameworks, one of these frameworks is the Customer Experience Framework (CEM) that will be explained in more detail (Schmitt, 2010).

In this thesis a deeper look will be taken at the effects of store environment and product packaging on customer experience. Concerning store environment, it was decided to measure the effects of spatial store crowding (and not social store crowding) on customer experience because of its result on traditional measures such as satisfaction, brand image, store evaluation… that have been proven to be quite consistent. (Mehta et al., 2013). Nonetheless the effect of spatial crowding has never been measured in terms of customer experience. The aim will be to see how the results will compare to the traditional measures and if the customer experience measure leads to new insights into this subject.
Concerning the packaging, it was decided to alter the emotional saliency of the packaging through a foreground and background representation of the product, the foreground representation being the most emotionally salient one. The underlying framework is the Construal Level Theory that states that the physical distance of the product results in a psychological distance to the product. The bigger the psychological distance, the less attracted you become to the product (Vergura & Luceri, 2018).

Another measure that was added in parallel to the customer experience is a measure of negative emotions. Emotions play a big role in customer experience, but it was strange to notice that only positive emotions were considered in the selected measure of customer experience.

Therefor we decided to see if the negative emotions show exactly the opposite trends as the customer experience or if it is not as straightforward as that.

The experiment was carried out with an online survey through which 142 responses were collected.

Out of previous paragraphs, we can deduct two research questions that will be answered through this empirical study.

RQ1: How does the packaging and store environment influence customer experience?
RQ2: How does customer experience affect customers' purchase intention?

# Literature review

## 1 Customer Experience

### 1.1 Definition

The definition of customer experience is quite broad, it could be defined as: the internal and subjective response customers have to any direct or indirect contact with a company. Direct contact happens during the purchasing process, product use and service. Most of the time it is initiated by the customers themselves. While indirect contact involves unplanned encounters with the company's products, services, or brands (Schwager & Meyer, 2007).

In next paragraphs, it will become clear that defining customer experience is not that easy because there are some issues and unclarities.

### 1.2 issues with customer experience

Customer experience seems like a promising measure. Nevertheless, there has also been a lot of confusion and different interpretations around it. There are disagreements on different aspects of the customer experience, which result in many different definitions (Bascur & Rusu, 2020). In this first part, we will go over some of the different interpretations that have been created and used in different papers according to multiple different aspects of customer experience.

Most of the time customer experience is seen as the subjective response to an offering or brand. But, sometimes experience is also defined as a characteristic. These views are very different and highly problematic for the understanding of the term and the interpretation of the studies' results. This leads to misunderstandings about which studies' insights can be compared or combined (Becker & Jaakkola, 2020).

A second point of confusion is related to the intensity of the experience. Often, a good experience is defined as one that is very intense, memorable, or even extraordinary. The current literature often distinguishes mundane and extraordinary experiences, which are treated as different phenomena. The issue is that the difference in experience is not based on the person's responses but on the nature of the stimulus. For example, extraordinary offerings, such as river rafting would automatically be categorized as an extraordinary experience without taking notice of the possible different responses. Indeed, these responses can vary from weak to strong

(Becker & Jaakkola, 2020). So, the response intensity would be a better way to distinguish mundane and extraordinary experiences. To illustrate this, a person could have a mundane response to an extraordinary offering as well as a strong response to a mundane experience.

An additional aspect that leads to confusion and different interpretations is the difference between Customer Relationship Management (CRM) and Customer Experience Management (CEM). Many companies have invested in measuring CRM which is seen as a more traditional measure of customer satisfaction and quite different from CEM. Indeed, CEM cannot exactly be defined with CRM-measures. On one hand, CRM measures what is known about the customer such as past purchases, returns etc. This goes along with the idea of the customer as a more rational decision maker (Andajani, 2015).
On the other hand, Customer Experience Management (CEM) is more concerned with the immediate responses to the company's various touchpoints (Same & Larimo, 2012). We could also say that CRM captures the objective customer characteristics, while CEM captures the subjective elements of consumer interactions with the firm. Nevertheless, does this contrast between both approaches also prove their complementarity.

The downturn of CEM compared to CRM is that the data collection is much more complex. If the company wants to understand the reason behind the subjective responses of the customer, they will need supplementary information about the customer, for example, emotional reactions. Furthermore, timing issues also occur because the immediate response is of interest (Same & Larimo, 2012).

In addition, Becker & Jaakola (2020) express that instead of trying to identify which experiences are desirable or not, it would be better to identify for whom certain experiences are good or bad. This follows the idea of the existence of (personal) contingencies that will be explained further on in this part.

## 1.3 Experience

When we take a wider scope and analyse the word experience in general, we notice that some more problems and confusion arise that are also applicable for customer experience.

In English, experience can be both used as a noun (the experience) or as a verb (to experience). So, it can be used to describe different situations. It could be used to describe the outcome of something or the process itself (Same & Larimo, 2012).

Besides, another problem is that in certain languages a distinction is made between two significations of experience. On one hand, you have an experience in an immediate and isolated way, this is linked to present perceptions, feelings, and observations. In German this is called Erlebnis. On the other hand, you have the signification of experience as a continuous process of doing and undergoing. This is more linked to the past; accumulated experience and knowledge over time. In German this is called Erfahrung (Schmitt, 2010).

Most of the time though, and especially in marketing research, experiences are defined in the present. So, as present feelings, thoughts and perceptions people have regarding a certain stimulus (Schmitt, 2010).

In philosophy and psychology, the subjective aspect of experience is very important. Subjectivity can be seen as a unique relationship that exists between a person and the outside objective world. Furthermore, experiences are always "of" or "about" something which shows that they happen in response to something, they are induced by a stimulus or multiple stimuli, and are not self-generated (Schmitt, 2010). Besides, Same & Larimo (2012) adds to this that during this process, special attention is given to emotions and senses (Same & Larimo, 2012).

Based on previous research, crucial discoveries about the functioning of experiences have been brought to light. These characteristics and knowledge about experiences are selected from a review paper written by Schmitt (2010).

The first question they investigated was about the preference of individuals regarding interruptions during the experiences; do individuals like this or do they prefer to have a continuous experience?
Their answer was that before the experience, participants indicate that they prefer to break up the negative experiences but that positive experiences should be continuous. Studies afterwards showed that, the opposite is preferable. Because splitting up negative experiences, makes them worse. And inconsistently to what the individuals thought, taking a break during positive experiences makes them better. So, their conclusion was that splitting up experiences, makes

them more intense. Consequently, it should be avoided for negative experiences and be integrated in positive ones.

Next, they investigated how individuals remember experiences. Different studies concluded that individuals do not average out the different experiences in a sequence of interest to form their opinion about these experiences. It has been for example shown that peak moments and the evolution of the experience over time (improvement or deterioration) are very important for remembering experiences.

Lastly, they tried to find out if it is possible to experience positive and negative experiences at the same time.
The coexistence of negative and positive affect has been demonstrated in multiple studies. For instance, when individuals put on a so-called 'protective frame. This happens when individuals are in a situation that is perceived as dangerous but the person believes this situation is not dangerous or that they are confident they can handle it. This coexistence could be seen in extreme sports. When taking the intensity level a little bit down, it is also quite common for individuals to have good and bad feelings at the same time. Examples are all kind of indulgences such as buying luxury goods, wasting time doing nothing or eating high-calorie desserts (Schmitt, 2010).

## 1.4 Experiential marketing

In this part, the term "experiential marketing" will be explained as well as its main difference with "experience marketing".

Generally, it could be said that experience marketing is broader than experiential marketing: experience marketing is more strategic, while experiential marketing is more tactical. Therefore, experiential marketing is defined as: a process of identifying and satisfying customer needs and aspirations profitably, engaging them through two-way communication that brings brand personalities to life and adds value to the target audience. Especially, the notion of communication is important because it is through this communication that people engage with the brand, the products, and the services. (Same & Larimo, 2012) This communication is diverse and mainly related to the senses and emotions (Andajani, 2015).

We saw before that the word “experience” is confusing, mainly because it is a verb as well as a noun but in experiential, we don’t have this issue anymore because it can only be used as an adjective. The fact that it is an adjective also shows its tactical identity; experiential marketing shows managers how to create experiences through for example: experiential communication, experiential packaging, etc. At large, it tells us how to do marketing experientially (Same & Larimo, 2012).

Because experiential marketing is more tactical, it is the right moment to explain the many different stimuli that are involved and can be perceived through one or several senses, adding an extra layer of complexity (Andajani, 2015).

The stimuli can reside inside as well as outside the firm-controlled touchpoints. 3 groups of important contingencies that have an impact on the perception of the undergone experience (as a response to the stimulus) have been identified. The first is the group of personal contingencies, such as personality, demographics, and values, but also resources such as time, skills and knowledge. Secondly, there are the situational contingencies, these include the contingencies in the immediate context, such as the type of store and the presence of other customers. Finally, sociocultural contingencies cover the broader system in which the customers are embedded, for example language, cultural aspects and norms and rules (Becker & Jaakkola, 2020).

These contingencies can impact the evaluative outcome of the responses. Taking the example of the context (situational contingency), experiencing fear can have a negative effect in a dentist’s office, while it can have positive effects when you are practicing extreme sports. Consequently, responses to stimuli are not universally good or bad but they depend on the customer contingencies. (Becker & Jaakkola, 2020).

Besides, touchpoints happen at different times. We can distinguish pre-purchase touchpoints, purchase touchpoints and post-purchase touchpoints. For example, pre-purchase touchpoints include websites, advertisements, as well as incentives such as coupons, deals and promotion. During the purchasing, customers encounter touchpoints such as packaging, point-of-purchase displays, and sales environment. Post-purchase touchpoints include product performance, customer service and loyalty programs (Bascur, 2020). In this master thesis, the touchpoint during the purchase encounters will be used.

All these touchpoints may be further broken down into even smaller stimuli such as names, logos, designs etc., they are often called experiential stimuli. Notice that these touchpoints may or may not have functional benefits. This becomes clear when you look at the packaging for example, it could be designed to be functional but also just to be aesthetically pleasing and attractive. Both can produce experiences. When the experiential stimulus doesn't have a functional role, it is called an experiential attribute. (Bascur, 2020).

## 1.5 Customer Experience Framework (CEM)

First it is important to mention that some debate exists about whether it is possible for firms to create specific customer experiences because customers perceive them differently because of different contingencies. Therefore, it is more widely accepted that firms cannot create the experiences but still have an impact by monitoring and designing the stimuli that precede the experience (Becker & Jaakkola, 2020). The company's task is to simulate and control the reactions resulting from the stimulation process but they cannot decide the interpretation of the customer (Andajani, 2015).

This framework will give an approach on how to manage customer experiences in three steps. The first step is to analyze the experiential world of the customer. Here, the customers' consumption, user patterns and socio-cultural contexts are considered because this affects the customer's needs and wants (Schmitt, 2010).

During the second step, the experience platform is built. It includes a dynamic and multisensory representation of the desired experience, also called experiential positioning as well as an experiential value promise. This is the value that the customer can expect from the experience in terms of the four experience-dimensions, which are: sensations, feelings, cognitions and behaviors (Brakus et al., 2009). Of course, this second step needs to be in line with the findings of the first step, in addition to being in line with the brand personality and values.

The last step of the CEM is the implementation of the experience platform, which results in the designing and implementation of the experience. This needs to be done for the different customer interfaces (store, online, etc.). The design of the experience needs to be present in the visual aspects such as products and stores but also in the verbal (or even unspoken) messages (Schmitt, 2010).

## 1.6 Measuring customer experience

Customer experience is a multidimensional and complex notion. Thus, finding a way to measure it is difficult. Nonetheless, numerous researchers have attempted to do so, and have achieved more than satisfactory results that will be discussed in this chapter. First, I will give the results on how customer experience should not be measured (directly) and then an alternative model/scale will be discussed.

Often, customer experience is measured by using the customer satisfaction (or its derivative, the net promoter score), but this tells you very little about the actual experiences. Customer satisfaction could be seen as the aggregation of all the customer experiences through which the customer went. So, to better understand the customer experiences, measuring the satisfaction is not detailed enough because it only measures a current state, it needs to be deconstructed. After this deconstruction, you end up with all the different experiences, called component experiences, which are much more enlightening to study (Meyer & Schwager, 2007). This means that measuring customer satisfaction is not completely useless in the field of experiences, but it is certainly not sufficient. It could still give great insights because research has shown that satisfaction drives loyalty (Klaus & Kuppelwieser, 2021).

Other constructs to which customer experience is related but still conceptually different from are attitudes, motivational and affective concepts, and brand associations/image. Attitudes and experiences are different because attitudes are general evaluations based on automatic affective reactions, while experiences also include specific sensations, cognitions (the mental response to the stimuli) and behavioral reactions (Bustamante & Rubio, 2017). Experiences are also different from motivational and affective concepts such as involvement, brand attachment and customer delight. Involvement includes a motivational state that is not presumed in experiences. The fact that experiences can happen when consumers do not show interest in the product/brand illustrates this.
It is also not because you are strongly attached to a brand (high brand attachment) that the experiences are the strongest. Equally, you could experience strong experiences for a brand or product that you are not particularly attached to. This is because experiences involve more than only emotions, (which are often evoked when you have high brand attachment) They also include ordinary sensations, feelings, cognitions, and behavioral responses.

Experiences and brand image and associations are also not equivalent because associations are inferred from the customer's associative network. Thus, customers don't feel it sincerely, they only project these traits on the brand/product (Schmitt, 2010).

Many different models/scales have been proposed for measuring the customer experience. (e.g EXQ, SEM, CEI, etc.) But, in the end, we decided to select the ISCX which is short for "In Store Customer Experience" because of its completeness, and its validation in research.

The ISCX includes the customer's internal processes (cognitive, affective, social, and physical) as well as the service context. It tries to capture the experiences when there are interactions between the customer and the products or the physical environment.

Each dimension will be shortly explained to make the model clear. First, there is the cognitive dimension. It is essential to understand that this is not limited to the acquisition of knowledge. However, it is a mental response to the stimuli in the environment. This response engages the customer's creative thinking. Equivalently, it is the outcome of processes that transform interactions into thoughts.
Secondly, there is the affective dimension. In this model, emotions as well as moods are considered. The researchers still emphasize that they are aware that emotions are unquestionably more important than moods because they are directly linked to the stimuli, and thus, are the main subject of attention in this category.
Thirdly, the model includes a social dimension. Retail stores are social environments, and this has an impact on the experiences. More precisely, there are interactions between the customer and salespeople as well as between different customers.
Lastly, the physical dimension is also a part of the ISCX. This is the customer's individual and subjective sensation of well-being as a reaction to his/her environment.

For each of the different dimensions, they developed a scale reaching between 4 and 10 items. The social experience has been split up in "social experience with customers" and "social experience with employees" (Bustamante & Rubio, 2017).

# 2 Product Emotions

In the previous chapters, we briefly touched upon the importance of emotions as a metric for

measuring experiences (Same & Larimo, 2012). We are further going to explore emotions in this chapter.

## 2.1 Fundamental terminologies in emotional research

To be sure to fully understand this chapter, about product emotions, it is useful to first define some key terms in emotional research.

Vaidya & Kalita (2021) sought to determine the 4 most pertinent terms in emotional research. These 4 terms are: emotions, affects, feelings and moods. They performed an integrative review of journal papers and included all relevant ones, since the beginning of this century. This convinced us that deriving the definitions from this paper would be very reliable and integrative of different points of view.

The first term to define is "affect". Some authors, like Hayes-Roth et al. (1998) and Arnold (1960) use the term emotion and affect interchangeably. This can be done, but in more recent literature, is accepted that there is a difference, or more precisely, that one includes the other. The concept of affect is broad because it includes many different psychological states like emotions, feelings, moods, sentiments, and passions. Each of these terms are different, mainly because they vary in duration, impact, and eliciting conditions.
Afterwards, it is interesting to have a look at emotion. The outcome here was a definition created by Hekkert & Desmet. They state that "emotions are considered the mechanisms that triggers when circumstances are favorable or adverse to one's concern" (Hekkert & Desmet, 2002). Two major factors exist in this definition: emotions and concerns. These can either be in line with each other or not. Depending on this, you can experience different kind of emotions (Vaidya & Kalita, 2021).

Next, there is the concept of feelings. It is commonly accepted that this concept is the same as mood. This cannot be separated from the concept of emotions, but it is still different. A professor in neuroscience, Antonio Damasio defines feelings as: "the conscious perception of an emotional state". So, this would mean that the feeling only happens after the emotion has been interpreted and/or has been assigned meaning to. Furthermore, moods are also affected by personal factors such as memories, beliefs, and surroundings (Vaidya & Kalita, 2021).

To end this part, it is relevant to briefly point out the main differences between emotions and moods/feelings. One of the main differences is the timeframe during which the affect happens; while an emotion is temporary and happens quickly, feelings are slower, less intense, and more long-lasting. We can conclude from this that using emotions as a direct measure is more appropriate than using feelings (Vaidya & Kalita, 2021).

## 2.2 Difficulties emotions

In this part, some difficulties related to emotions will be discussed.

First, many different emotions can be elicited by products. Some examples are: admiration, irritation, annoyance, and many more (Desmet, 2008).

Secondly, a certain product never elicits only one emotion, always a multitude of them are elicited simultaneously, these are called compound or mixed emotions (Desmet & Hekkert, 2003). This is due to the multitude of different product's aspects, that can each elicit different emotions. these emotions can coincide but also diverge (Desmet, 2008).

Third, there are differences in evoked emotions by the same product between different individuals. This is because emotions are personal, they are subjective. (Desmet, 2003)

Additionally, emotions can be conscious or unconscious, so, you experience way more emotions than you believe you do. Consequently, it is important to analyze both kinds of emotions. On one hand, conscious emotions can be self-reported and have valence and arousal. Valence is measured on a scale ranging in the positivity of the emotion (very negative to very positive). And arousal measures the intensity of the emotions (weak to strong) (Liao et al., 2012). On the other hand, unconscious emotions are spontaneous affective reactions (Shiv & Fedorikhin, 1999).

Emotions have also a physiological component. When experiencing certain emotions, biochemical reactions are happening, which can be measured. Nevertheless, it is not that straightforward to link specific emotions to physiological measures because often different emotions are linked to the same physiological outcomes (Vaidya & Kalita, 2021).

## 2.3 Basic model of product emotions

Now that we have a clear view of what product emotions and emotions in general are, we can look at a model that includes product emotions and links it to other concepts.

This model is the basic model of product emotions, created by Desmet (2002). It aims to create a theoretical basis that explains persons' emotional responses to products. In his analysis, he included five different categories of emotions evoked by products. These five different categories will be explained further on, after having established the logic of the framework itself.

The cognitive basis of the model is built around the idea that when a shopper is in contact with a product, he or she undergoes an appraisal process in which the product is appraised. This appraisal can be harming or in favor of one or several of his or her concerns. Thus, in this model the appraisal and concern are key factors to determine which emotion is evoked.

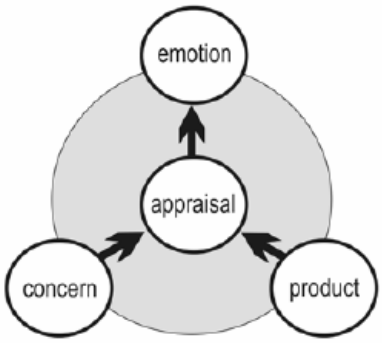
To make this clearer, let's explain what "appraisal", "concern" and "product" mean. A synonym for appraisal could be assessment, even though, an appraisal is non-intellectual and automatic. It is important to note here that the appraisal-process is highly subjective; it is the meaning one attaches to a certain product that is important, not the product itself. So, this would mean that one of the reasons why not everybody encounters the same emotions regarding a certain product, is because they don't appraise it in the same way.
A concern is defined by Frijda (1994) as: "a more or less stable preference for certain states of the world". The meaning a product has for an individual is determined by the match or mismatch with his or her concern(s) (Frijda & Mesquita, 1994).
"Product" is the easiest term; it is the stimulus that is appraised. This can be a physical object, but also something intangible. For example, it could be someone that calls our name or even just a memory of something that happened. In the context of emotional product packaging, the product will be the packaging or the entire consumer product.

In the article they illustrate theses terms with an example. They give the example of the feeling of attraction (emotion) to an umbrella (product). This attraction towards the umbrella would depend on your current concern (staying dry), which in its turn would depend on the current situation. Depending on the situation, the concern and the product will match or not. For example, when it is raining or when rain is expected, you, will have a greater concern for staying

dry and thus, you will be more attracted to the umbrella. Besides, the extend of the concern also depends on how worried someone is about getting wet by the rain, if this matters a lot to them or not.

**Figure 1**

*The Basic Model of Product Experience*




Source: (Desmet, 2002)

In the model we see that depending on the concern and the product, a certain appraisal-process will exist. The next step is to analyze more in detail what happens between the appraisal-process and the actual elicited emotion. In order to analyze this, Desmet classified different product emotions that are each linked to certain appraisal types.

First, we have the surprise emotions, these are elicited when you appraise a certain product as novel. Secondly, there are the instrumental emotions that result when we have certain instrumental expectations for products, when we expect or hope that this product will help us to attain the goal for which we bought the product. Here, the goal is the concern we have.

Next, we have the aesthetic product emotions. These emotions are mainly the outcome from the perceptions of our senses that can be delighting or offending. These can result from certain (predetermined) attitudes we have for product style, colors, materials etc. Attitudes are dispositional likings for certain products or attributes of them.

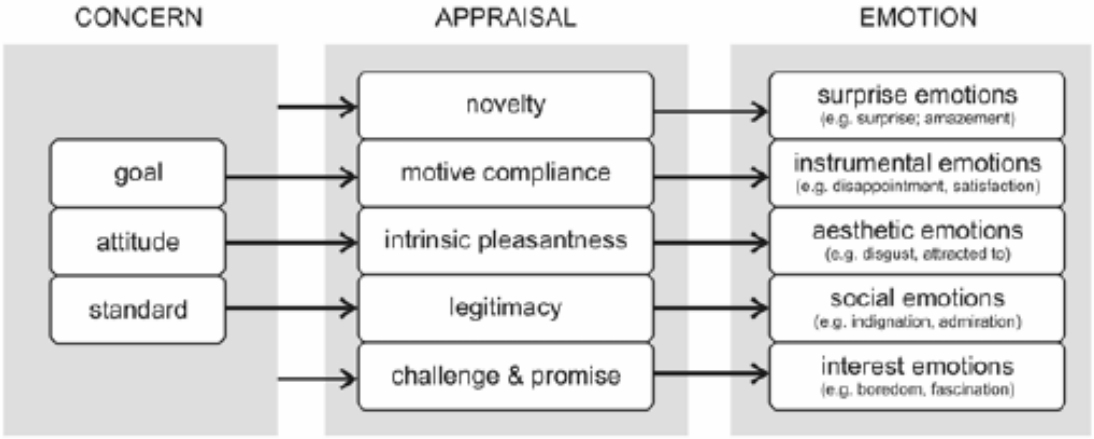
Fourthly, we look at the social product emotions. These are based on our standards. Standards are the third type of human concerns that are applicable to product emotions. They are defined as how we believe things should be and how people should act. Standards are often socially learned and rely on our (social) environment. We could think that products don't have a lot to do with this, but actually they do, because we often don't only pay attention to the product itself

but also to the people we associate them with. This could be the people that use the product, own the product but also the ones that designed them. One example of this are trends. When someone that you know or admire possess or uses a certain product, you will feel more attracted towards it.

Lastly, there are the interest product emotions. These emotions happen when there is an appraisal of challenge, and they involve an aspect of simulation. These emotions can make us laugh, simulate, or motivate us. Humans are intrinsically motivated to maintain an optimal level of arousal. When we deviate from this optimal level, we feel unpleasant. When we appraise something as "not having enough challenge" we experience the emotion of boredom.

**Figure 2**

*Classification of Product Emotions*




Source: (Desmet, 2003)

We will conclude this part by enumerating some elements that we can learn from the model. Firstly, this model shows us that our emotional responses relate to different qualities; both the aesthetic and functional qualities are important.

Furthermore, they were able to identify 5 different classes of emotions. Therefore, when designing for emotion, a deep understanding of the emotional meanings is required.

Besides, the fact that there are five different relevant emotional response categories, illustrates that many different layers of emotion coexist and that some of them can be predicted.

Furthermore, this model shows that it is possible that a single product evokes multiple emotions simultaneously. This is the case because we have various concerns that coexist at the same time, furthermore you can have several of each one of them at the same time.

This model also cannot support the idea that there would exist general rules for the relationship between the product appearance and the emotional responses, because the relationship between the product appearance and the shopper's emotional responses are very personal (Desmet, 2002).

Nonetheless, one year later Desmet et al. (2003) published another paper in which they especially pointed out that even though the same product evokes different emotions in different persons, when we look at the underlying process of how the emotions are evoked, similarities can be found between people.
To explain this, they rely on the theoretical foundations of the functionalist approach, which is the basis for their appraisal theory in the model. During the appraisal process by the shopper, pleasant emotions will appear when the appraisal corresponds to the concern and unpleasant emotions will appear when they collide. In their study, they showed that people with different values, undergo different emotions towards the same car model. This shows that having the knowledge about the values of the potential buyers can be useful for predicting the emotional response that they will have in response to certain car models. Furthermore, this shows that rather than linking certain emotions to certain designs, it is better to understand why these emotions are evoked (Desmet, 2003).

Not all papers agree with the statement that no unique link can be set between product design and emotions. For example, Vaidya & Kalita (2021) states that if most consumers experience the same emotions towards a certain product design, then there is an emotional continuity. Likewise, if most consumers evoke different emotions, then there would be an emotional discontinuity (Vaidya & Kalita, 2021).

# 3 Emotional Packaging design

## 3.1 Importance of emotional packaging design

Emotional packaging is strongly linked to the notion of product emotions; the first would elicit the second.

Everybody experiences many (different) emotions a day. A considerable amount of these emotional responses is evoked by what is called "cultural products". These products can be all kinds of consumer products like for example: clothes or food, but also other products like cars. Products belonging to the same category are still very different from one another because they

are differentiated, in this way, companies can target different consumer groups. So, one reason why it could be interesting to pay attention to a product's design, is to appeal to your target consumers (Desmet, 2003).

Another reason to design for emotion, especially in the field of FMCG, is the fact that it will make it easier for consumers to select a particular product among similar goods, which could have a positive impact on the company's sales (Desmet, 2003).

Furthermore, packaging is often the first in-store contact that a consumer has with a product, so it is key that it efficiently reflects the intended characteristics and purchasing psychology. Besides, products that are emotionally neutral do not exist. (Desmet & Hekkert, 2009) So, it is important to know how to create a positive emotional outcome that is favorable for your sales and to avoid the negative outcomes of emotional 'side effects' (Vaidya & Kalita, 2021).

Visual neuroscience research has concluded that products' visual attributes that influence the stimuli's saliency can also impact where and for how long shoppers fixate a complex display, like supermarket shelves. Thus, the more visual salient an item is, the longer consumers focus on it. The longevity of the fixation is important because it has been shown that choice depends on it; the longer an individual looks at a product, the more likely it is that he or she will choose it (Krishna et al., 2017).

Often consumers have different requirements that a product must meet. These requirements can be functional, but often also emotional. The functional requirements are features that aim to resolve the "problem" that the consumer faces. Designing trends show that consumers are inclined toward objects that motivate them to raise emotion and improve their quality of life. Therefore, it is very important to pay attention to the emotional part of a product and because emotion is often obtained through first impression visual elements, packaging design is key. Indeed, a first impression about a product is often formed in the first milliseconds after exposition to the product (Vaidya & Kalita, 2021).

## 3.2 Emotional experience

The aim of the emotional packaging design is that shoppers would undergo a positive emotional experience when being in contact with the product. This positive emotional experience can be

defined as: the joyful experience which users gain in the process of appreciating and using the product (Yang, 2016).

Donald Arthur Norman, a cognitive psychologist, argues that emotional experience can be divided into three different levels: the visceral level (also called the instinct level), the behavioral level and the reflexive level. Only the visceral level is experienced in-store, so this one is the most interesting one for this paper.
However, it is still interesting to analyze the entire model, which is broader than only the in-store experience in order to get a complete view. Besides, the interactions between the different levels are also important to obtain a holistic approach to this emotional design (Norman, 2004).

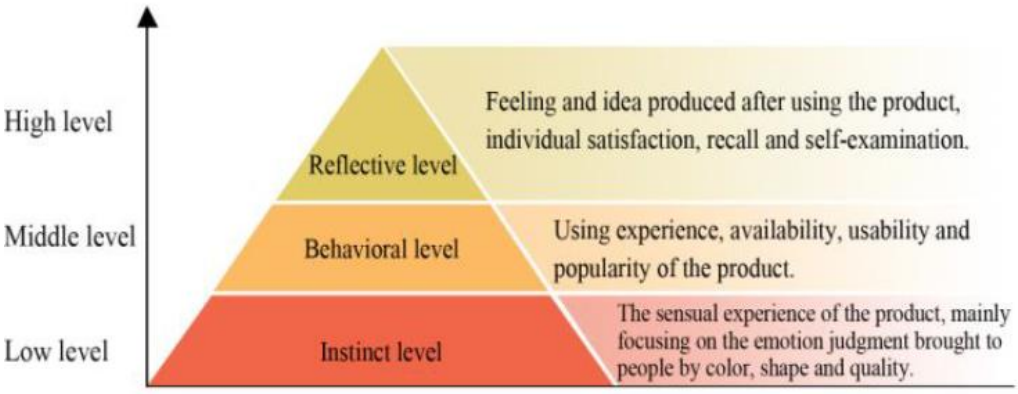
The visceral level is the starting point of the emotional-experience-process. This can also be seen as the first interaction that shoppers have with a product combined with their impressions of it. (Yang, 2016) This level is characterized by very strong, immediate, and powerful responses. Important to know about this level, is that these responses happen most of the time unconsciously. Furthermore, is it strongly linked with the sensory aspects of design; how a product looks, feels, smells and sounds (Norman, 2004).

The behavioral level is the second level of the model, it happens subsequently to the first one. Even though, it can be noticed that there is a time-gap between both, because the product has already been bought. The main difference with the preceding level, is that it is not in-store anymore and that the responses mainly happen consciously. At this level, the focus is set on the feelings that consumers experience when using the product (Yang, 2016). At this level, the key elements that decide on the "positivity" of the emotions are product performance and functionality. These can manifest themselves through the products, but also the packaging is important. (i.e., easily open, and closeable packaging) (Norman, 2004).

Finally, there is the highest, subsequently last emotional experience level, which is the reflective level. This is when the question: "is the product meaningful for the consumer?" is answered (Norman, 2004).

**Figure 3**

*Three Levels of Emotional Experience*




Source: (Yang, 2016)

## 3.3 Features of positive emotional packaging

It has been shown that when a packaging is perceived as aesthetically pleasing, affective brain areas are activated. This will have a positive effect on product choice. Furthermore, this effect will be amplified when these perceptions are coming from stimuli that require little cognitive effort (Liao et al., 2015).

Besides, it has been shown that there is a difference in emotional responses depending on the spatial representation of the product on the packaging when the product is represented on the foreground (left picture) or background (right picture). When the product is represented on the foreground, it generats more positive emotional responses. The conceptual background for this outcome is the Construal Level Theory. This theory states that when we perceive objects as being more distant (background representation), there is a higher perceived psychological distance, which results in more negative emotions (Vergura & Luceri, 2018).

**Figure 4**

Foreground and background representation


Foreground representation


Background Representation

Source: (Vergura & Luceri, 2018)

In addition, literature has pointed out that the 3 most fundamental aspects to create emotional impact are the form, material, and color. So, when doing research in this field, most attention should be given to these attributes (Vaidya & Kalita, 2021).

One of the fundamental aspects of emotional packaging is color. The role of color has been studied copiously in the field of consumer psychology. The conclusion is often that color plays an essential role in creating brand recognition and building brand identity. (Vaidya & Kalita, 2021). Additionally, color is also the element that triggers the fastest response, which makes it a very important element to catch shoppers' attention (Spence & Velasco, 2018).

In terms of the composition of a color, it is accepted that brighter colors are more visually salient. Although, it is necessary to also take the color of the environment into account; if the color stands out into the environment, it is visually salient (Krishna et al.,2017).

## 3.4 Measuring emotions in emotional packaging design

When talking about the ways to measure emotions, it is useful to know that 2 different ways to approach packaging exist. The first is as a collection of individual elements such as: colors, imagery, shapes, sizes, and typefaces. When consumers evaluate a product, they appraise the individual elements separately. Each of them, will then influence the overall response to the product. The second approach is a holistic approach that views packaging as an assemblage of different elements that are combined. Here, the point of view is that instead of perceiving the individual elements of the packaging, the consumers perceive the packaging as a whole. Most researchers follow the first approach because it has been shown on multiple occasions that the different elements have different influences on the consumers. Nevertheless, the interaction (especially the congruence or incongruence) between different elements should still be considered because in an in-store situation, the packaging is still presented as a totality (Liao et al.,2015). In the holistic approach, some problems also arise because some points of view are contradicting each other. One example is the discrepancy between congruence and contrast. On one hand, it is accepted that different packaging elements should be congruent with each other because this increases the processing fluency and acceptance of the product. But, on the other hand when the elements are not congruent, they stand out on the shelf and catch attention (Spence & Velasco, 2018).

Regarding the ways to measure these emotional responses, two big classes of measures exist: physiological measures and self-reported measures. In most research, self-reporting methods

are used because of convenience and limited resources. Furthermore, they are also shown to be the most reliable when measuring subjective feelings such as anger, joy and surprise. Nevertheless, is suggested that physiological measures could give additional information about emotions in the context of emotional packaging designs (Liao et al.,2015).

To illustrate the usefulness of self-reported measures, let's look at a particular measure: the visual images. The idea is that the emotions are illustrated and that participants need to select the image/pictogram of how they feel. Advantages of this kind of measures is that it can be used in-person as well as for web-based studies. Besides, and maybe even more importantly: it (partly) takes away the rationality of response, which self-reported measures are often blamed for. One of the first, and definitely the most well-known scale that uses visuality is the Self-Assessment Manikin scale (Bradley & Lang, 1994).

### 3.5 Role of buying intentions

If consumers have a predetermined purchase intention in mind or not matters for experiencing emotions. When a consumer has established criteria (for example, brand, quality, price etc. or a mixture of these) about the product he or she wants to purchase, the emotional response will be different. Products that do not fulfill the wanted criteria, elicit more negative emotions, and will consequently be avoided (Vaidya & Kalita, 2021).

Indeed, Young & Asher (2015) suggest that when a consumer's shopping is more task-oriented and shoppers don't find the products they want, the most prominent emotion will be frustration. Therefore, it is very important for brands and products to be recognizable (Young & Asher, 2015).

## 4 Store Crowding

The last part of the literature review is about store crowding. Over the years, there has been a considerable increase in online purchases, which has put pressure on retail stores to optimize their in-store customer experience, in which the store environment plays an important role (Swetha Kodali & Kumari, 2021). Despite the growth of online purchases still 31% of brands are planning to establishing or expanding their physical retail footprint, so this shows that paying attention to in-store situations has definitely not become obsolete (Damen, 2022). Furthermore, studying the effect of the store environment is especially useful because most

buying decisions are made in the store; the Point of Purchase Advertising Institute (POPAI) announced that three quarters of supermarket-purchases are not planned in advance (Sujana et al., 2020).
Moreover, many choices are made unconsciously, which is also in favor of the importance of environmental factors (Dijksterhuis et al., 2005).

When we are talking about the term "crowding", we need to be careful, because it is a subjective term; the threshold for defining a space as "too crowded" is different for everybody. That's why we need to use the term "perceived crowding". This perceived crowding is an important element for defining the shoppers' perceptions about the store atmospherics. Thus, it also has impacts on multiple retail factors such as: attitude towards the store, satisfaction and behavioral outcomes (Bandyopadhyay, 2020).

Duikershuis et al. also used this "perception is reality" argument and called it the perception-behavior link. This states that the perception of the environment has a direct and unconscious influence on shoppers' behavior. The managerial implication of this is that stores should be aware of and focus on how consumers perceive the environment (Dijksterhuis et al., 2005).

## 4.1 Definition and types

Crowding can be split up in two different sub-categories: human crowding (also called social crowding) and spatial crowding. These terms are self-explanatory. The author Bandyopadhyay refers to human crowding by using Machleit's definition: "the shopper's perception of the extent of human density in a shopping space and their social interaction among them". Spatial crowding is defined as: "the number of non-human elements in an environment and their relationship to each other" (Bandyopadhyay, 2020).

## 4.2 Consequences of perceived crowding

A study, that analyzed the effects on behavioral factors, found that the human crowding doesn't have a significant relationship with impulse buying tendency and in-store browsing. These results are not concluding because it could be that the location where the study was conducted is highly populated. So, people there are used to crowdedness and adapted themselves to it (Bandyopadhyay, 2020).

At the same time, spatial crowding shows significant negative impacts on impulse buying. This can be explained by the fact that when shoppers perceive a store as spatially crowded, they don't want to spend more time in the store and their urge to buy will also decrease. The urge to buy is positively correlated with impulse buying behavior and will consequently also decrease (Wei et al., 2020).

Another reason that could explain the decrease in impulse buying is the negative effect that spatial crowding has on positive emotions. The managerial advice of this study was to develop a strategy that aims to lower perceived spatial crowding to bolster impulse buying (Bandyopadhyay, 2020).

When we look at the environment in general, one study showed a positive relationship between the environment and pleasure and arousal (Heidarzadeh Hanzaee & Javanbakht, 2013).

Besides, A recent study, that also analysed the store environment, found that 46,9% of positive emotions in consumers are affected by this (Sujana, 2020).

Overall, there were quite some inconsistencies in the studies' results. Therefore in 2020, researchers did a meta-analysis on this topic. On one hand, they found that social crowding has no significant relationship with overall emotions or consumer satisfaction. A significantly positive relationship was identified between social crowding and product purchase. On the other hand, they found that spatial crowding has a negative relationship with positive emotions and impulse buying (Wei et al., 2020).

## 4.3 Shape of relationship and mediators

Mehta's study, among others, showed that the relationship between perceived crowding and patronage intention follows an inverted U-shape. This would theoretically mean that there exists an "optimal" crowding level. This means that having a store that is not crowded enough, could be as detrimental to the customer experience as an overcrowded one. Furthermore, an inverted U-shape relationship was also identified between the perceived crowding and arousal. This suggests that a low perceived crowding is unarousing, while high perceived crowding is unpleasant (valence) instead of arousing (Mehta et al., 2013).

When analyzing the relationship between the perceived store crowding and patronage intention, there are a few mediators that come into play. In many studies, emotions have been accounted as a mediating factor. (e.g. Donovan, 1994/ Gilboa 2003). Most of the time, these studies used the Mehrabian-Russell model (Mehrabian & Russell, 1974), where this idea was raised and used for the first time. In this model, emotional states are measured by pleasure and arousal. The outcome was most of the time that shoppers' emotional states accurately predict their actual purchase behavior. Besides, when the store environment induces pleasure in the consumers, they tend to spend more time and money in the store (Donovan, 1994). Mehta showed that there are actually more mediating factors than only emotions; also store evaluation and the way people think are important (Mehta et al., 2013).

# Hypotheses

## 5 Store crowding

In the experiment, two different store environments will be compared to each other, the difference between both is that one is more spatially crowded than the other.
Based on prior research is expected that the more crowded environment will have a negative effect on the customer experience measures. No article was found that explicitly explores the relationship between spatial crowding and customer experience. Nevertheless, some articles have found results that could support this hypothesis. For example, Blut and Iyer found in their meta-analysis that spatial crowding leads to a lower satisfaction. (Blut & Iyer, 2020) And in the literature review it was already explained that satisfaction could be seen as the aggregate of all the customer experiences (Klaus & Kuppelwieser, 2021). In this thesis, we will go a step further because the customer experience is split up in three different dimensions namely the cognitive, affective, and physical dimension. In this way it will be possible to see on which dimension the crowding has the most effect.

Besides, spatial crowding would also have a positive effect on the negative emotions. The reason why spatial crowding increases negative emotions is because shoppers feel more pressure in these kinds of environments. Furthermore, when they perceive that they don't have enough space in the store to do their shopping, negative emotions such as stress and anxiety increase (Wei et al., 2020). These studies have all been performed in in-store shopping environments. This thesis will explore if these feelings are also present when a picture is shown instead of the shopper being present in the store.

**H1**: The spatial crowded store will trigger lower dimensions of customer experience than the less spatial crowded store.

**H2**: The spatial crowded store will have a stronger negative effect on the negative emotion than the less spatial crowded store.

# 6 Product packaging saliency

There are two different levels of emotional saliency present in the packaging. One version is more salient than the other because it displays a foreground representation of the product. Previous research has shown that the foreground representation increases positive emotions (Vergura & Luceri, 2018). From here, it is reasonable to assume that the emotionally salient product has a positive effect on customer experience and a negative impact on negative emotions.

**H3**: The emotionally salient product will trigger higher dimensions of customer experience than the less salient product.

**H4**: The emotionally salient product will have a weaker effect on the negative emotions than the less emotionally salient product.

Next hypotheses are linked to the purchase intention. The effect of customer experience on purchase intention has been shown in several studies. Nonetheless, when looking at the results of other studies, we need to make sure that they split the dimensions of customer experience in the same way as we did. These studies show us that most of the time all dimensions were positively related to the purchase intention. One example of such a study is one carried out by Esmaeilpour & Mohseni (Esmaeilpour & Mohseni, 2019)). Regarding the negative emotions, it can be reasonably assumed that they would show the inverse effect of the affective dimension of customer experience that contains only positive emotions.

**H5:** Higher dimensions of customer experience have a positive effect on the consumers' purchase intention.

**H6**: Negative emotions have a negative effect on the consumers' purchase intention.

Past research has shown that the relationship between perceived crowding follows an inverted U-shape, so that a small amount of crowding, would increase the purchase intention. (Mehta et al., 2013). Nevertheless, this was only the outcome in studies where the social and spatial crowding were not differentiated. When they were differentiated, the outcome was that social crowding had positive behavioral effects, while spatial crowding had negative effects (Blut & Iyer, 2020).
There is also a direct relationship between the emotional saliency of a product and the purchase intention because of the Construal Level Theory that says that you feel closer to the product when it is displayed on the foreground, so this would also increase your intention to buy (Vergura & Luceri, 2018).

**H7**: Spatial store crowding has a negative relationship with the purchase intentions.

**H8**: The emotional saliency of the packaging has a positive relationship with purchase intentions.

# 7 Moderators

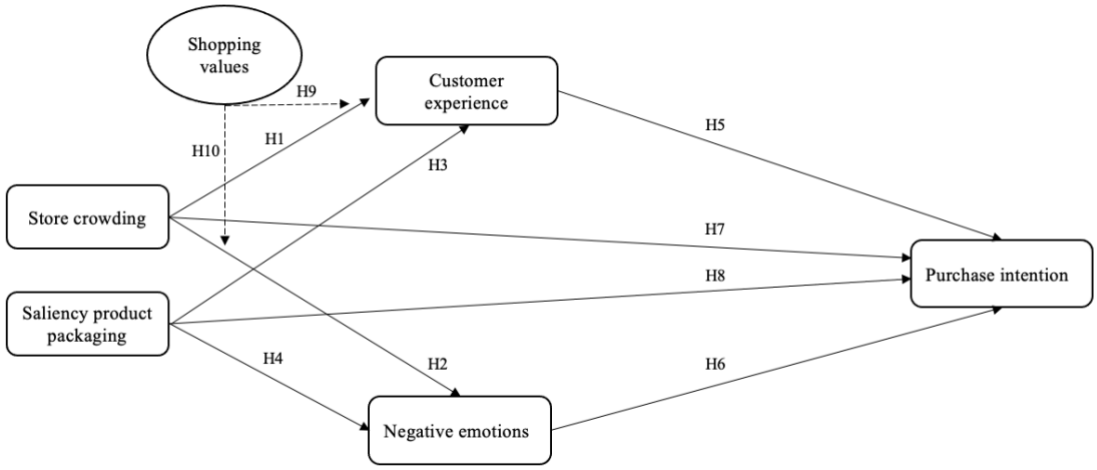
Shoppers' shopping values act as a moderator on their emotions. There are two different types of shoppers: people with utilitarian shopping values and people with hedonic shopping values. For utilitarian shoppers, shopping is more seen like a task and needs to be practical and easy. This is the reason why they will experience more negative emotions when the store is crowded (Blut & Iyer, 2020; Machleit & Eroglu, 2000).

**H9**: Participants with higher hedonic shopping values will trigger higher levels of customer experience when they perceive a store as spatially crowded.

**H10**: Participants with higher hedonic shopping values will experience less negative emotions when they perceive a store as spatially crowded.

## 8 Conceptual model

**Figure 7**
Conceptual model




As can be seen in the conceptual model, a spatially crowded store and non-salient packaging, both have an impact on the purchase intention (H8 & H9). But the conceptual model above also shows that the main explanation for this would be, the role of negative emotions and the customer experience. They act as a mediator between the dependent variable (purchase intention) and the independent variables (store crowding and saliency product packaging).

# Methods

## 9 Stimuli

### 9.1 Product stimuli

Cookies were selected as product category. One of the measures of the study is "emotions as a result of product packaging", so, the product used, needs to be able to evoke emotions. This is mainly done by product packaging, but the product itself is also important because not all products are equally efficient in evoking emotions. Eventually cookies were the product of choice because they are a good example of an "emotional food" which are especially efficient in evoking emotions. Indeed, emotional foods are often highly processed, high in fat and sugar and offer limited nutrition. The success of these kinds of food is partly due to the use of successful designs and marketing strategies (Wrigley & Ramsey, 2016).

Afterwards, two different versions of the box of cookies were created and differentiated using a different level of emotional saliency. This was done by using foreground and background product representations. Vergura & Luceri showed in their article that this is an efficient way to create differences in emotional saliency of packaging. The idea behind this is that when the product is displayed on the foreground of the packaging, the psychological distance between the product and the user is smaller. This creates more positive emotional responses than when the product is displayed on the background (Vergura & Luceri, 2018).

A box of cookies was selected from Google Images. Selection criteria were the following: the brand couldn't be known or sold in Belgian supermarkets, nor could it resemble one that is. Besides, it also needed to be easily modifiable in Gimp. The image that was eventually selected can be found in Appendix A.

This image was then transformed in two version: one with the background representation of the product (Figure 8) and one with a foreground representation (Figure 9). The emotionally salient one shows cookies on the foreground, and a bottle of milk and chocolate chips on the background. For the less-emotionally salient one, the background and foreground have been switched. For both pictures, a little bit of perspective has also been added in such a way that they fit more realistically in the picture of the supermarket aisle.

**Figure 8**
*Less emotionally salient box of cookies*


**Figure 9**
*emotionally salient box of cookies*


## 9.2 Supermarket aisle

A meta- analysis on the consequences of perceived crowding showed that the results about the effect of spatial crowding are more concluding than the ones about the effect of human crowding (Blut & Iyer, 2020). This indicates that it would not be reliable to create the stimuli

and form hypotheses according to social crowding. Therefore, the stimuli will be created using spatial crowding. As a short reminder, spatial crowding is defined as: "the number of non-human elements in an environment and their relationship to each other" (Bandyopadhyay, 2020).

The base for the crowded and uncrowded image was the same. It was also an image from Google Images that showed a supermarket aisle. By using Gimp, all the elements were removed to make the image "neutral". Both the original and neutral images are available in Appendix A.

Afterwards, crowding elements were added in both visuals. Two elements were added in the uncrowded version: a kick stool and an empty box. In the spatially crowded aisle, four elements were added: 2 boxes, a kick stool, and a shopping cart. Especially the shopping cart aims to give the impression that the aisle is spatially crowded. Other elements that were added in both visuals are five other different brands of cookies to make the aisle look more realistic.
In addition to this, the box of interest was also added on the same spot in all versions of the aisle. The only difference is that in the uncrowded version, the boxes of cookies are more spaced out because there is more room on the shelf.

**Figure 10**

*Uncrowded aisle with less-salient product*

**Figure 11**

*Uncrowded aisle with salient product*


**Figure 12**

*Crowded aisle with less-salient product*


**Figure 13**

*Crowded aisle with salient product*

## Experimental Design

The stimuli are differentiated according to two different criteria: the crowdedness of the store and the packaging design. So, the design of the study follows a 2x2 design; there are 2 categories with each time 2 levels. The experimental design is between-participants because the participants are not assigned to the same conditions in the stimuli. In total, there are 4 different groups (and thus 4 different conditions) that will be compared to each other. These groups are profiled by both the crowdedness of the store and the emotional saliency of the product (Allen, 2017).

## Measures

Data were collected through an online questionnaire that contained 36 questions.

### 10 Customer/product experience

One of the measures of interest was customer experience. In the literature review, the In-Store Customer Experience scale (ISCX) was explained. This is also the one that will be used in the questionnaire. One of its advantages is that it is very complete because it splits customer experience according to the customer's different internal processes (cognitive, affective, and physical) and includes different items for each dimension (Bustamante & Rubio, 2017).

For the Cognitive dimension, the scale originally included 7 items. In this survey, only 3 items were kept for several reasons. The most important reason being that the context of this survey is very specific; the measure is used in an online environment instead of in-store. Another criteria that was considered to choose the items was the loading factor of each item. The items that were eventually selected are: "Inspire me", "Awaken my curiosity" and "Bring interesting ideas to my mind". These original statement to which the participants had to answer is "The environment of this retail store, the display of its products, services, etc." for the three items. This was changed to "This product…", because the main aim is to know the participants' opinion according to the product, while not explicitly drawing attention to the environment.

**Table 1**

*Items for the Cognitive factor of customer experience*

| | **Original items** | **Items used** |
|---|---|---|
| **Cognitive factor of customer experience** | Make me think and reflect | / |
| | Teach me interesting things | / |
| | Awaken my curiosity | Awakens my curiosity |
| | Awaken my creativity | / |
| | Bring interesting ideas to my mind | Brings interesting ideas to my mind |
| | Inspire me | Inspires me |
| | Interest me | / |

The affective part of the scale initially included 10 items, which was also judged as too many, especially because we didn't want the survey to be too long. So, it was also reduced to 3 items, using the same arguments and logic as for the cognitive factor. On top of that, a supplementary argument was used. Because the questionnaire would be answered by mainly French and Dutch speaking participants, it was necessary to use very easy English words. Some of the items in the original scale didn't meet this requirement (ex. Thrilled, Astonished and Contended). A small pretest on a few persons (n = 3) with a "basic" knowledge of English was done for all the scales. The aim of this pretest was to make sure that the meaning of all English words was correctly understood. The pretest indeed showed that the words that were mentioned before are not mainstream. Using these items as measure would not provide trustworthy results and can consequently not be used. The items that were eventually kept are: "In a good mood", "Happy", "Optimistic". The statement used is the same as for the cognitive part: "This product makes me feel…".

**Table 2**

*Items for the Affective factor of customer experience*

| | **Original items** | **Items used** |
|---|---|---|
| **Affective factor of customer experience** | In a good mood | In a good mood |
| | Contended | / |
| | Happy | Happy |

| | | |
|---|---|---|
| | Optimistic | Optimistic |
| | Hopeful | / |
| | Enthusiastic | / |
| | Thrilled | / |
| | Surprised | / |
| | Amazed | / |
| | Astonished | / |

The measure for the physical factor, originally contained 5 elements and was also reduced to 3. These items are: “Energy”, “Vitality”, and “Comfort”. The statement used, was the same as for the affective process.

All 3 factors are measured on a 7-point Likert scale reaching from Totally disagree to Totally agree.

**Table 3**

*Items for the Physical factor of customer experience*

| | **Original items** | **Items used** |
|---|---|---|
| **Physical factor of customer experience** | Energy | Energy |
| | Vitality | Vitality |
| | Comfort | Comfort |
| | Relaxation | / |
| | Well-being | / |

Furthermore, the original scale also included “social experience with employees” and “social experience with customers”. These parts couldn’t be included because they were not present in this online setting.

## 11 Emotions

Machleit & Eroglu compared three different emotion measures: one by Izard (1977), one by Plutchik (1980) and one by Mehrabian-Russell (1974), to see which one was the most appropriate for measuring in-store emotions. They found that The Izard and Plutchik measures had better results than the Mehrabian-Russell-measure. Both other measures were as efficient in measuring emotions. Nonetheless, the authors pointed out that both measures still had their advantages and disadvantages. The authors advised to use the Izard measures when the emphasis is on negative emotions and the Plutchik measure when measuring acceptance and expectancy (Machleit & Eroglu, 2000). This difference was convincing to choose the Izard measure, because we want to focus on negative emotions, as the positive emotions are already included in the affective dimension of customer experience.

Izard's scale is called the Differential Emotions Scale (DES). He identified 10 primary emotions that each form a category for the scale. They are called primary emotions because they cannot be diminished to more basic emotions. Yet, they can be combined to form other emotions (Izard, 1977). In Appendix A, one can find an overview of the complete scale.

**Table 4**

*Categories and items from the Differential Emotions Scale used in this study*

| **Category** | **item** |
|---|---|
| Sadness | Discouraged |
| Anger | Angry |
| Disgust | Disgusted |
| Fear | Afraid |

However, in this thesis not all categories and items have been used the categories "shame/shyness" and "guilt" were removed because during the pretest, the meaning of these words was not well understood. For the remaining categories, each time one item was kept. These are shown in table 4.

## 12 Purchase intentions

Another measure of interest is the purchase intention. For this measure, a scale from Baker & Churchill was used. In Table 5, you can find the original scale (Baker & Churchill, 1977).

**Table 5**

*Purchase intention scale*

| |
|---|
| 1. Would you like to try this product? |
| 2. Would you buy this product? |
| 3. Would you actively seek out this product in a store in order to purchase it? |
| 4. I would patronize this product. |

Source: Baker, M. J., & Churchill, G. A. (1977)

This scale had to be adapted to the context of this survey. In table 6, one can find the final version that was used. First, the "product" has each time been replaced by "these cookies". Besides, the last item has been removed because most of the pre-testers didn't understand the meaning of "patronize". Furthermore, because the items are measured with a 7-point Likert scale, going from "strongly disagree" to "strongly agree", the questions had to be transformed to statements.

Finally, a small change was made to the third item because the pre-testers had difficulty understanding the meaning of "seek out", so this was replaced by "search".

**Table 6**

*Purchase intention scale as used in this study*

| |
|---|
| 1. I would like to try these cookies. |
| 2. I would buy these cookies. |
| 3. I would actively search for these cookies in the store in order to purchase them. |

## 13 Hedonic/utilitarian shopping values

The creators of this scale based their work on the fact that there are different shopping motives and thus different shopping profiles. The two main profiles are utilitarian and hedonic shoppers. A utilitarian shopper can be defined as a shopper that experiences shopping mostly as a task-related event (functional aspect of shopping). While a hedonic shopper's motivations are defined as the consumer's enjoyment of the shopping activity (Jones et al., 2006).

The scale itself is made by two Norwegian authors: Svein Ottar Olsen and Kåre Skallerud. They used this scale in their study which aimed to find a relationship between reactions to a store's attributes (such as product assortment, prices, and store layout) and personal shopping values. Shopping values were grouped by utilitarian values and hedonic values (Olsen & Skallerud, 2011) .

In table 8, one can find the different items included in the scale, divided in hedonic and utilitarian shopping values. Each item will be measured on a 7-point Likert scale going from "Strongly disagree" to "Strongly agree". Table 8 compares the original scale and the scale that was used in the study. The first item from the Utilitarian values was deleted because most of the pre-testers did not know what groceries meant. For this same reason, all "grocery shopping" have been replaced by "supermarket. Shopping". Furthermore, in the second item "groceries" has been replaced by "products".

For the fourth item, there was also a comprehension issue among the pre-testers for the word "releases", this was eventually replaced by diminishes.

**Table 8**

*Shopping values scale: Utilitarian and Hedonic shopping values*

| | **Original scale** | **Scale used** |
|---|---|---|
| **Utilitarian values** | 1) I am disappointed if I cannot buy the groceries that I really need (RI) | 1) / |
| | 2) The purpose of the grocery shopping trip is to find exactly the groceries I am looking for | 2) The purpose of supermarket shopping is to find exactly the products I am looking for. |
| | 3) I feel disappointed if I have to go to another grocery store to complete my shopping (RI) | 3) I am disappointed if I have to go to another supermarket to complete my shopping. |

| | | |
|---|---|---|
| **Hedonic values** | 4) Grocery shopping is something I do to feel better. | 4) Supermarket shopping is something I do to feel better |
| | 5) Grocery shopping releases stress | 5) Supermarket shopping diminishes stress |
| | 6) Grocery shopping is like an escape from daily routines | 6) Supermarket shopping is like an escape from daily routines |

Source: (Olsen & Skallerud, 2011)

## 14 Other measures

Also, some other measures have been included. First, a one-item scale that measures how often people buy cookies was included. The reason for this is that people that do not buy cookies very often will be less attracted by them in the store and could have an influence on the purchase intention. The item is asked as follows: "How often do you buy cookies?" Participants have 4 response options: "Less than once a month", "1-2 times a month", "Once a week" and "Several times a week".

Secondly, a one-item scale about participants' fondness of shopping in crowded spaces was added. Because the pre-tests showed that many respondents did not know the word "crowded", a synonym needed to be found. Eventually, this item was formulated as: Do you like to shop in supermarkets where there is not much space to move around? This is of interest for the study because it could be that the crowded aisle has less negative impact on people that are fond of shopping in crowded spaces. Participants could answer on a 5-point scale going from "definitely not" to "definitely yes".

Moreover, a scale containing two items has been added to see if the different pictures of the store and the product have the expected effect. The intended difference between both store pictures is that one is perceived as more crowded than the other. Therefore, the statement "This supermarket corridor is very spacious" was added. The aim of the different product packaging was that one should be more emotionally salient than the other. Therefor the statement: "The product packaging brings out many emotions" was added. Participants had to answer both questions on a 7-point Likert scale.

## 15 Data Analysis

The collected data has been analyzed with IBM SPSS version 27 statistical software. Significance of test results were assessed at $\alpha = 0,05$.

# Procedure

The data collection happened online, through an online questionnaire, using the survey software Qualtrics. The online link through which the survey was available was distributed through social network Facebook and through mail. People that wanted to participate had to click on the link that redirected them to the questionnaire.

First, an introductory message appeared followed by some short instructions. Secondly, the picture of the supermarket aisle was shown for 15 seconds, and participants were asked to attentively look at all the elements. Afterwards, they had to indicate if they had noticed the product of interest. Then, the picture of the aisle was shown again, and participants were asked if they thought the supermarket aisle was spacious. Fourthly, the participants had to answer the questions related to the 3 dimensions of customer experience.
Next, the questions about negative emotions were answered. This part also included the question of the emotional saliency of the product packaging. After this, participants had to express their purchase intention through some questions. For these three past sections, participants had access to both the picture of the aisle and of the product. Then, participants were asked about their shopping habits followed by their demographics, and finally their shopping values.

# Results

In this part the results of the dataset analyses will be shown and explained. It will start with a few preliminary analyses. First, a description of the dataset will be made. Next, a factor analyses for examining the structure of the scales will be drawn. Afterwards, the internal consistency of the scales will be looked at using Cronbach's alpha. Finally, a manipulation check will be done on the different stimuli. The next step is to see if the different hypotheses can be verified or not. This will be done using Linear Regressions and Independent Sample T-tests. Afterwards, there will be a discussion of the results, some theoretical and managerial implications and lastly some recommendations.

# 16 Preliminary analyses

## 16.1 Suitability dataset

193 responses were collected through the online Qualtrics survey. 51 answers had to be deleted because they were not complete. Eventually, the number of valid answers was 142.

## 16.2 Description of dataset

The dataset contains 142 valid responses. 31,7% of the responses (n = 45) are coming from males and 66,9% (n = 95) are coming from females. two participants preferred not to tell their gender. In terms of age, the median age is approximately 34,9 years.

Each participant was randomly attributed to a certain version of the questionnaire where the stimuli differed in terms of environment (less crowded / crowded) and in terms of emotional saliency of the packaging of the product (less salient / salient). In the table below, one can find the distribution of the versions throughout the participants.

**Table 9**
*Number of participants per version*

| packaging / environment | Less salient | Salient | Total crowdedness |
|---|---|---|---|
| Less crowded | 36 | 37 | 73 |
| Crowded | 35 | 34 | 69 |
| Total product saliency | 71 | 71 | 142 |

## 16.3 Reversed items

First, the reversed items had to be reversed to match the rest of the scale. The only item that needed to be reversed was item two of the utilitarian part of the shopping values scale.

## 16.4 Constructs

Almost all measures used are based on other research. So, to verify the structure of the measures an exploratory factor analysis was applied to the data.

All items of the different scales were subjected to a principal component analysis (PCA). Prior to this, the suitability of the data for performing the factor analysis was assessed. This was done

by inspecting the coefficients of the correlation matrix where many coefficients of 0,3 and above should be present. Afterwards, the Kaiser-Meyer-Olkin (KMO) value was analyzed, it should be above the recommended value of 0,5. Finally, the Bartlett's Test of Sphericity should reach statistical significance. If these three conditions are fulfilled, then the factor analysis can be carried out.

**Table 10**

*Factor analysis*

| Scales | Correlation coefficients above 0,3 | KMO | Bartlett's Test of Sphericity (sig.) | Conditions fulfilled for factor analyis? | Number of factors coming out of analysis | Cumulated variance (in %) |
|---|---|---|---|---|---|---|
| CE – Cognitive factor | all | 0,686 | <0,001 | yes | 1 | 69,74 |
| CE – affective factor | all | 0,718 | <0,001 | yes | 1 | 81,03 |
| CE – Physical factor | 2/3 | 0,539 | <0,001 | yes | 1 | 63,43 |
| Negative emotions | all | 0,812 | <0,001 | yes | 1 | 71,54 |
| Purchase intention | all | 0,695 | <0,001 | yes | 1 | 78,50 |
| Utilitarian shopping values | 0/1 | 0,500 | 0,562 | No | | |
| Hedonic shopping values | all | 0,735 | <0,001 | yes | 1 | 79,04 |

These factor analyses show us that the factor analysis could be carried out for all scales, except the utilitarian shopping values because the Bartlett's Test of Sphericity was not significant. In

table 10 you can also find the outcomes of the factor analysis in terms of the number of factors coming out of the analysis and their cumulated variance.

Thus, the factor analysis could not be done for the utilitarian shopping values. This scale only contained two items and they are negatively correlated to each other. One possible explanation for this is a bad choice of selected items. The data shows that all people indicated very low values for the second item, that states that people are not disappointed when they must go to another store to complete their shopping, even though they responded quite highly to the item that says that the purpose of shopping is to find exactly what they are looking for. It would be quite reasonable to say that someone that is a utilitarian shopper still does not want to go to different stores to do their shopping. Another reason could be that the participants did not pay attention to the reversed item and answered both questions in a similar way. Consequently, when reversing the item, the correlation became negative. This shows that this scale is not reliable. Before removing it, it could be a good idea to see how the internal consistency of this scale is in the next part, but based on this info, it will probably not be good because the items are negatively correlated.

Next, we wanted to check the reliability of the scales, for this the Cronbach's alpha was used. This estimates if the different items of the scale measure the same construct, in other words if they have a good internal consistency. This is the case if the Cronbach's alpha is >0,7. If it is lower, some items of the scale could be removed.

**Table 11**

*Reliability of scales (internal consistency)*

| Scales | Number of items | Cronbach's alpha | Deleted item | Cronbach's alpha after deleted item | Mean | Standard deviation |
|---|---|---|---|---|---|---|
| CE – Cognitive dimension | 3 | 0,780 | / | | 3,40 | 1,38 |
| CE – affective dimension | 3 | 0,882 | / | | 3,94 | 1,31 |

| | | | | | | |
|---|---|---|---|---|---|---|
| CE – Physical dimension | 3 | 0,683 | Comfort | 0,874 | 3,62 | 1,21 |
| Negative emotions | 4 | 0,864 | / | | 2,30 | 1,25 |
| Purchase intention | 3 | 0,861 | / | | 3,5 | 1,41 |
| Utilitarian Shopping values | 2 | -0,10 | All | | | |
| Hedonic shopping values | 3 | 0,867 | / | | 3,22 | 1,51 |

Table 11 shows that two scales are problematic regarding their internal consistency. First, there is the Physical dimension of CE. The Cronbach's alpha for this scale was only 0,683. After removing one item (Comfort) it became 0,874, which is much better. The second problematic scale is the utilitarian values scale. This scale had a negative Cronbach's alpha because there was negative correlation among the items. This is of course absolutely not reliable so, this scale was removed.

## 16.5 Manipulation check

Before moving on to the hypotheses testing, it is important that the stimuli were correctly perceived by participants. The spatially crowded store should be perceived as more crowded and the emotionally salient packaging as more emotionally salient. Both were tested with an independent sample t-test.

In table 12 we can see that the spatially crowded store was indeed perceived as more crowded. Note that the statement in the questionnaire was as follows: "This supermarket corridor is very spacious". So, the crowded store should have lower values than the less crowded one, which is the case.

**Table 12**

*Manipulation check spatial crowding*

| | Mean - less crowded store | Mean - more crowded store | Equal variances assumed? | t | p |
|---|---|---|---|---|---|
| Spaciousness | 5,99 | 4,68 | yes | 3,73 | <0,001 |

The emotional saliency of the packaging was measured with the statement: "This product packaging brings out many emotions". The t-test results for this statement are displayed in table 13. It shows that the emotional salient packaging is indeed more salient because the mean value is higher, but this difference is not significant. The problem with this kind of stimuli is that it relies on frameworks (here the psychological distance) that have a subconscious effect. So, asking participants' direct opinion can result in answers that are not representative of what they feel. (Reingold & Merikle, 1988)

There is another measure that could be used to check if there is a difference in saliency between both packaging. This measure doesn't necessarily measure emotional saliency but more the saliency in general, we could call this the visual saliency. In the beginning of the questionnaire, participants got to see a picture of the stimulus, a crowded or less crowded store with the salient or less salient product. All participants got to see this picture for 15 seconds. Afterwards, they were asked if they noticed the product of interest or not. If one of both versions of the packaging is more salient, then participants should have noticed it more than the less-salient product. When testing this, we should of course take out the level of crowding and only compare the same store environments with each other. So, two additional t-tests were added, one that measures the visual saliency of the products in the uncrowded store and one that measures it in the crowded store.

The result of these tests are very similar to the results of the emotional saliency measure; the salient product is more often noticed but the difference is not significant. So, when analyzing the results for the hypotheses, this needs to be kept in mind.

**Table 13**
*Manipulation check emotional saliency packaging*

| | | | Mean -less salient product | Mean - more salient product | Equal variances assumed? | t | p |
|---|---|---|---|---|---|---|---|
| Packaging saliency | Emotional saliency | | 2,75 | 3,03 | yes | -1,12 | 0,265 |
| | Visual saliency | Less crowded store | 0,42 | 0,54 | yes | -0,53 | 0,296 |
| | | More crowded store | 0,34 | 0,50 | yes | -1,32 | 0,191 |

## 17 Results of hypotheses

Let's start with the two first hypotheses that aim to test the effect of more spatially crowded stores on customer experience, and on negative emotions. Both hypotheses were tested with an Independent Sample t-test.

**H1**: The spatially crowded store will trigger lower dimensions of customer experience than the less spatially crowded store.

**H2**: The spatially crowded store will have a stronger negative effect on the negative emotion than the less spatially crowded store.

**Table 14**
*H1 – H2*

| | Mean - less crowded store | Mean - more crowded store | Equal variances assumed? | t | p |
|---|---|---|---|---|---|
| CE – cognitive dimension | 3,50 | 3,17 | yes | 1,40 | 0,163 |
| CE – affective dimension | 4,25 | 3,62 | no | 2,89 | 0,004 |
| CE – physical dimension | 3,49 | 2,92 | yes | 2,60 | 0,010 |
| CE – All dimensions | 3,75 | 3,24 | yes | 2,704 | 0,008 |
| Negative emotions | 2,16 | 2,43 | yes | -1,30 | 0,197 |

Both the affective and physical dimensions of CE have significantly different outcomes for the crowded and less crowded stores. The cognitive dimension of CE and negative emotions don't show significantly different results, but the results are still different in the way we expected it; the more spatially crowded store has lower values for CE and higher ones for negative emotions. When all the dimensions of CE were combined, the result was significant. Thus, hypothesis 1 could be verified but hypothesis 2 could not.

Next, we move on to the effect of the packaging saliency on the different dimensions of CE and negative emotions. The results can be found in table 15.

**H3**: The emotionally salient product will trigger higher dimensions of customer experience than the less salient product.

**H4**: The emotionally salient product will have a weaker effect on the negative emotions than the less emotionally salient product.

**Table 15**

*H3-H4*

| | Mean -less salient product | Mean - more salient product | Equal variances assumed? | t | p |
|---|---|---|---|---|---|
| CE – cognitive dimension | 3,26 | 3,42 | yes | -0,71 | 0,480 |
| CE – affective dimension | 3,67 | 4,22 | yes | -2,56 | 0,011 |
| CE – physical dimension | 3,23 | 3,20 | yes | 0,09 | 0,925 |
| CE – All dimensions | 3,38 | 3,61 | yes | -1,216 | 0,226 |
| Negative emotions | 2,45 | 2,14 | no | 1,46 | 0,148 |

These results make us only partly verify H3 because the only dimension where a significant difference could be shown is the affective dimension. Hypothesis 4 could not be verified because the difference between both products is not significant. It also needs to be kept in mind that the participants didn't perceive a significant difference between both product versions and that the results should thus be interpreted with caution.

Afterwards, we tested the effect of the CE and negative emotions on customers' purchase intention. These hypotheses were tested using a multiple linear regression. The dependent variable is the purchase intention, and the four independent variables are: the cognitive, affective and physical dimensions of customer experience and the negative emotions.

**H5:** Higher dimensions of customer experience have a positive effect on the consumers' purchase intention.

**H6**: Negative emotions have a negative effect on the consumers' purchase intention.

The first thing that needed to be checked before analyzing the results of the linear regression, is that the required assumptions should be validated. Indeed, this linear regression doesn't include problematic multicollinearity, the residuals don't show major deviations from normality and there are no outlying residuals. For this last assumption, thresholds of -3,3 and 3,3 were chosen, so no standardized residual value is lower than -3,3 or higher than 3,3.

The next step was to evaluate the model. For defining this, we looked at the adjusted R Squared. This value was 0,508. Meaning that the model explains 50,8% of the variance of the dependent variable.

Afterwards, the individual contribution of each independent variable was analyzed. The results can be found in table 16. It shows that the cognitive dimension of the CE is the variable that contributes the most to the value of the purchase intention (standardized $\beta = 0,433$) and the affective dimension of CE the least ($\beta = 0,245$). The physical dimension of CE is the only variable getting a non-significant contribution value ($p = 0,672$), meaning that this variable is not making a statistically significant unique contribution.

Another interesting measure is the Part-measure. When you square these values, you get the independent variable's unique contribution to the R Squared. The Cognitive dimension of CE has the highest and the Physical dimension the lowest contribution. Note that the sum of all the Part Squared values is not equal to the R Squared value because it only considers the unique contribution of the variables and not the overlap or shared variance contributions to the dependent variable.

**Table 16**

*H5 – H6: Linear regression: DV = Purchase intention, IV = Cognitive Dimension of CE, Affective Dimension of CE, Physical Dimension of CE, and Negative Emotions*

| Model | Standardized Beta Coefficients | t | Sig. | Part | Part Squared |
|---|---|---|---|---|---|
| Constant | 1,769 | 4,703 | <0,001 | | |
| CE – Cognitive Dimension | 0,433 | 5,398 | <0,001 | 0,319 | 0,102 |
| CE – Affective Dimension | 0,245 | 2,872 | 0,005 | 0,170 | 0,029 |
| CE – Physical Dimension | -0,032 | -0,424 | 0,672 | -0,025 | 0,001 |

| | | | | | |
|---|---|---|---|---|---|
| Negative Emotions | -0,260 | -4,112 | <0,001 | -0,243 | 0,059 |

We can conclude from this linear regression that H5 is partially verified (only two out of 3 dimensions had a significant outcome) and H6 is verified.

afterwards, there are H7 and H8 that examine the direct relationship between crowding and purchase intention and product saliency and purchase intention. Both are tested through an independent Sample T-test.

**H7**: Spatial store crowding has a negative relationship with purchase intentions.

**H8**: The emotional saliency of the packaging has a positive relationship with purchase intentions.

**Table 17**

*H7*

| | Mean - less crowded store | Mean - more crowded store | Equal variances assumed? | t | p |
|---|---|---|---|---|---|
| Purchase Intention | 3,64 | 3,35 | yes | 1,25 | 0,212 |

**Table 18**

*H8*

| | Mean -less salient product | Mean - more salient product | Equal variances assumed? | t | p |
|---|---|---|---|---|---|
| Purchase Intention | 3,27 | 3,73 | yes | -1,95 | 0,054 |

Both hypotheses could not be verified because the test results were not significant. Even though, it is very close for H8. The tendency for both tests are good, meaning that the purchase intention is negatively related with the spatial crowding and positively related with the product saliency even though the results are not significant.

The last part of analyses are the moderator analyses. Here the influence of The Hedonic Shopping values as a moderator between crowding on one side and CE and negative emotions on the other side will be inspected.

**H10**: Participants with higher hedonic shopping values will trigger higher levels of customer experience when they perceive a store as spatially crowded.

**H11**: Participants with higher hedonic shopping values will experience less negative emotions when they perceive a store as spatially crowded.

We wanted to analyze this with the add-on Macro PROCESS developed by Hayes in SPSS (Hayes 2013). Unfortunately, this was technically not possible, so we decided to do the analysis step by step in SPSS.
First, the Hedonic Shopping Value (Moderator) and Store Crowding (IV) values needed to be standardized. Next, an interaction term was created between these two standardized values.
Finally, simple regressions were created between Store Crowding (IV), the interaction term (IV) and then each time on of the dependent variables (CE – cognitive dimension, CE – Affective Dimension, CE – physical dimension and Negative Emotions). So, in total 4 different linear regressions were made. To see if the Hedonic Shopping Value had an effect on the relationship between the Spatial crowding and the DV, we needed to see if the interaction term had a significant contribution or not. See Table 18 for the results.

**Table 18**

*moderator effect of Hedonic Shopping Values*

| DV | R Square | Beta interaction term between Spatial Crowding and Hedonic Shopping Values | Sig. of interaction term |
|---|---|---|---|
| CE – Cognitive Dimension | 0,026 | -0,153 | 0,189 |
| CE – Affective Dimension | 0,057 | -0,016 | 0,886 |
| CE – physical dimension | 0,050 | -0,087 | 0,433 |

| | | | |
|---|---|---|---|
| Negative Emotions | 0,015 | -0,075 | 0,479 |

These results tell us that none of hypotheses linked to the moderation effect of Hedonic Shopping Values could be verified.

# Conclusion

## 18 Discussion / Theoretical implications

Let's first give an overview of which hypotheses were verified before going to the discussion and the theoretical implications

**Table 19**
*Overview of hypotheses*

| Hypotheses | Results |
|---|---|
| **H1**: The spatial crowded store will trigger lower dimensions of customer experience than the less spatial crowded store. | Partially verified:<br>Cognitive dimension: no (p = 0,163)<br>Affective dimension: yes (p = 0,004)<br>Physical dimension: yes (p = 0,010)<br>Total: yes (p = 0,008) |
| **H2**: The spatial crowdedness of the store has a positive influence on negative emotions. | Not verified (p = 0,197) |
| **H3**: The emotionally salient product will trigger higher dimensions of customer experience than the less salient product. | Partially verified:<br>Cognitive dimension: no (p = 0,480)<br>Affective dimension: yes (p = 0,011)<br>Physical dimension: no (p = 0,925)<br>Total : no (p = 0,226) |
| **H4**: The emotionally salient product will have a weaker effect on the negative emotions than the less emotionally salient product. | Not verified (p = 0,148) |
| **H5:** Higher dimensions of customer experience have a positive effect on | Partly verified:<br>Cognitive dimension: yes (p <0,001) |

| | |
|---|---|
| consumers' purchase intention. | Affective dimension: yes (p = 0,005)<br>Physical dimension: no (p = 0,672) |
| **H6**: Negative emotions have a negative effect on consumers' purchase intention. | Verified (p <0,001) |
| **H7**: Spatial store crowding has a negative relationship with the purchase intentions. | Not verified (p = 0,212) |
| **H8**: The emotional saliency of the packaging has a positive relationship with purchase intentions. | Not verified (p = 0,054) |
| **H9**: Participants with higher hedonic shopping values will trigger higher levels of customer experience when they perceive a store as spatially crowded. | Not verified<br>Cognitive dimension: no (p = 0,189)<br>Affective dimension: no (p = 0,886)<br>Physical dimension: no (p = 0,433) |
| **H10**: Participants with higher hedonic shopping values will experience fewer negative emotions when they perceive a store as spatially crowded. | Not verified (p = 0,479) |

One can see that the spatial crowding and the product saliency do not affect the same dimensions of customer experience. Whereas the spatial store crowding showed significant effect on the affective and physical dimensions, the product saliency only showed significant effects on the affective dimension. The reason why the product saliency did not show a significant effect on the physical dimension could be because the retained items for the physical dimensions were "Energy" and "vitality". Knowing that the product category of choice was cookies, it could be that people didn't associate this with "energy" and "vitality", and that this was stronger than the fact that there was or not a saliency effect.

The next striking result is that neither the spatial crowding, nor the product saliency had a significant effect on the cognitive dimension. Both were never tested in previous studies but according to Meyer & Schwager (2007) the total Customer experience which is equal to satisfaction should be significant. It could be that some of the dimensions are not significant but that the whole still is. Therefore, a measure total Customer Experience was created, which is the mean of the 3 dimensions. It appears that this measure shows a significant difference between both levels of crowding but not for the product saliency.

Both, H2 and H4 could not be verified. These were the effect of crowding and product saliency on negative emotions. In a meta-analysis by Wei et al. (2020) was shown that spatial crowding increased the feeling of negative emotions. One reason why we didn't find the same results could be that in the meta-analysis real in-store situations were used while here everything was online. It could be that because of this the emotions are less-strongly perceived, or even different emotions are felt.

Vergura & Luceli showed that the foreground position on the product evoked more positive emotions, but it was never shown or said that therefore the negative emotions are less present, even though this seems reasonable, it could be that this was just a false assumption.

for both hypotheses above it also needs to be mentioned that the p-values are not that high ($p = 0{,}197$ and $p = 0{,}148$), knowing that the number of observations is quite modest ($n=142$). If the number of observations was higher, it could be that these values would become significant. The element that also has an impact is the fact that a between-group design was used. This matters while this lowers the statistical power since the groups need to be compared against each other. Furthermore, the between-group design could be problematic as the people that are compared to each other could differ in several aspects, such as income (that could affect the purchase intention) or how sensitive they are (which could affect the evoked emotions) etc. This differences are the main disadvantage of using a between-group design and could have a big influence on the results (Greenwald, 2002). In Appendix B you can find a distribution of Gender, Age, Occupation, Frequency of buying cookies and liking of shopping in crowded spaces between the different versions. There are no massive differences across them, but still small differences that could make a difference in this quite small sample.

Furthermore, we can see that when we involve the purchase intention, some interesting things happen. The direct relationships between the spatial store crowding and the purchase intention as well as the direct relationship between product saliency and purchase intention are both not significant. While the relationship between the cognitive and affective dimensions of customer experience and negative emotions has a significant effect on the purchase intentions. This highlights that it was interesting to analyze the indirect effect (via customer experience and negative emotions) on the purchase intention.

When we analyze the results of the moderator effect of the hedonic shopping values between the spatial crowding and the dimensions of customer experience, as well as the negative emotions, the results are all not significant. This is not in line with the findings of Blut & Iyer

(2020) and Machleit & Eroglu (2000). This is a very unexpected outcome because this is one of the only scales where nothing was changed or erased. It could be that the fact that this scale was tested and approved by Olsen & skallerud (2011) for an in-store situation and not online could have had an influence.
Furthermore, one more thing that does not need to be forgotten is that measuring emotions is very difficult. Ideally, all possible emotions should be included if we want to make sure that all information is included. Also, the fact that for people it is not always straightforward to indicate which emotions they feel could falsify the results.

# 19 Managerial implications

This study has foremost shown the favorable effect of generating positive emotions like happy, optimistic and in a good mood on the purchase intention. Managers can achieve this by ensuring that a store is not too spatially crowded and through selling products that have a foreground instead of background representation.

Nonetheless, this study has also shown the effect of negative emotions on the purchase intention, thus it is not only important to look at positive emotions but also to know what triggers negative ones. This study has not been successful in finding what triggers these negative emotions.

Managers also need to keep in mind that it is not because a certain stimulus doesn't create positive emotions that it automatically creates negative ones. For example, in this study the product saliency had a significant effect on the affective dimension of customer experience (which only contains positive emotions) but not on the negative emotions. This is why in addition to customer experience it is useful to measure the negative emotions

Managers should also be aware that positive and negative emotions could occur together because consumers get in touch with many different stimuli that can each generate different emotions. Thus, all possible stimuli in the supermarket and their effect should be analyzed when trying to design a certain experience.

Furthermore, this study shows the advantages of the customer experience measure compared to more traditional measures like satisfaction, because much more information can be obtained. It

answers the question why a certain stimulus creates a positive experience / satisfaction because the measure is split up in the different dimensions. This can be illustrated by the results we got from measuring the effect of spatial store crowding with the customer experience. We found that the result of store crowding has significant effects on the affective dimension and on the physical dimension but not on the cognitive dimension. Thus, these results show us that customers prefer uncrowded stores because it evokes positive emotions (affective dimension) and a sensation of well-being (physical dimension) but not because of positive mental responses (cognitive dimensions). This could help store designers and managers to give feedback on why a certain stimulus has created a positive experience and guide them to optimize their stimuli.

# 20 Limitations

This study contains some limitations because constraints had to be introduced in order to execute the study. Firstly, a considerable number of modifications were made to the scales: items were removed or changed for several reason. One reason was that some scales were too long, for example the negative emotions scale. Besides, the participants didn't have English as a native language and especially the older participants didn't understand the meaning of some of the items. Furthermore, the customer experience scale was intended to be used for in-store situations, while this study was done through an online survey, therefor the social dimension had to be removed.

Besides it is not exactly clear how to interpret the emotions that are measured on-line and how to extrapolate them to in-store situations. A solution for this could be to use virtual reality instead of online surveys as it is still easier than in-store measuring but eliminated many difficulties linked to it (Jin et al., 2021). Nonetheless the issue of the social factor still partly remains because it is not possible to interact with others in a credible way. Maybe with future technology this will be possible.

The customer experience scale used in this study is also not explicitly meant for measuring product experience. Consequently, the scales didn't really fit the circumstances of the effect of the product saliency on customer experience. Therefor it is not sure if the results are reliable and if they are, how they should be interpreted.

A further limitation is that emotions are a very broad concept, thus it is very difficult to find a reliable scale for it. Here we grouped together "negative emotions" but this is not ideal and too broad. It would be necessary to use a scale with more than 3 emotions to measure this construct. To do this, it would be recommended to implement a study where the focus is only put on emotion, so that many different ones can be measured. And, to translate and test the scales in other languages so that there are no issues anymore with items that are removed because non-native English speakers don't understand them.

# References


Allen, M. (2017). *The SAGE Encyclopedia of Communication Research* https://doi.org/https://dx.doi.org/10.4135/9781483381411

Andajani, E. (2015). Understanding Customer Experience Management in Retailing. *Procedia - Social and Behavioral Sciences*, *211*, 629-633. https://doi.org/10.1016/j.sbspro.2015.11.082

Bandyopadhyay, N. (2020). Human Crowding or Spatial Crowding? The Impact of Perceived Crowding on In-store Impulse Purchase. *American Business Review*, *23*(1), 94-105. https://doi.org/10.37625/abr.23.1.94-105

Bascur, C., & Rusu, C. (2020). Customer Experience in Retail: A Systematic Literature Review. *Applied Sciences*, *10*(21). https://doi.org/10.3390/app10217644

Becker, L., & Jaakkola, E. (2020). Customer experience: fundamental premises and implications for research. *Journal of the Academy of Marketing Science*, *48*(4), 630-648. https://doi.org/10.1007/s11747-019-00718-x

Blut, M., & Iyer, G. R. (2020). Consequences of Perceived Crowding: A Meta-Analytical Perspective. *Journal of Retailing*, *96*(3), 362-382. https://doi.org/10.1016/j.jretai.2019.11.007

Bradley, M., & Lang, P. (1994). Measuring emotion: the Self-Assessment Manikin and the Semantic Differential. *Journal of behavior therapy and experimental psychiatry*. https://doi.org/10.1016/0005-7916(94)90063-9

Brakus, J. J., Schmitt, B. H., & Zarantonello, L. (2009). Brand Experience: What Is It? How Is It Measured? Does It Affect Loyalty? *Journal of Marketing*, *73*(3), 52-68. https://doi.org/10.1509/jmkg.73.3.52

Bustamante, J. C., & Rubio, N. (2017). Measuring customer experience in physical retail environments. *Journal of Service Management*, *28*(5), 884-913. https://doi.org/10.1108/josm-06-2016-0142

Damen, A. (2022). 53 Data-Backed Retail Statistics Shaping Retail in 2022 and Beyond.

Desmet, P., & Hekkert, P. (2003). Values and Emotions; an empirical investigation in the relationship between emotional responses to products and human values.

Desmet, P. M. A. (2008). Product Emotion. In *Product Experience* (pp. 379-397). https://doi.org/10.1016/b978-008045089-6.50018-6

Dijksterhuis, A., Smith, P. K., van Baaren, R. B., & Wigboldus, D. H. J. (2005). The Unconscious Consumer: Effects of Environment on Consumer Behavior. *Journal of Consumer Psychology*, *15*(3), 193-202. https://doi.org/10.1207/s15327663jcp1503_3

Donovan, R. (1994). Store atmosphere and purchasing behavior. *Journal of Retailing*, *70*(3), 283-294. https://doi.org/10.1016/0022-4359(94)90037-x

Esmaeilpour, M., & Mohseni, Z. (2019). Effect of Customer Experiences on Consumer Purchase Intention. *The Romanian Economic Journal*.

Frijda, N. H., & Mesquita, B. (1994). The Social roles and Funnctions of Emotions. *American Psychological Association*.

Greenwald, A. (2002). Within-Subjects Designs: To Use or Not to Use. *Psychological Bulletin*, *83*.

Heidarzadeh Hanzaee, K., & Javanbakht, A. (2013). The effects of shopping environment on consumption emotions, perceived values and behavioral intentions. *Management Science Letters*, 2501-2512. https://doi.org/10.5267/j.msl.2013.08.012

Izard, C. E. (1977). *Differential Emotions Theory*. Springer.

Jin, B., Kim, G., Moore, M., & Rothenberg, L. (2021). Consumer store experience through virtual reality: its effect on emotional states and perceived store attractiveness. *Fashion and Textiles*, *8*(1). https://doi.org/10.1186/s40691-021-00256-7

Jones, M. A., E.Reynolds, K., & J.Arnold, M. (2006). Hedonic and utilitarian shopping value: Investigating differential effects on retail outcomes. *Journal of Business Research*, *59*(9).

Klaus, P., & Kuppelwieser, V. (2021). Guiding directions and propositions: Placing dynamics at the heart of customer experience (CX) research. *Journal of Retailing and Consumer Services*, *59*. https://doi.org/10.1016/j.jretconser.2020.102429

Krishna, A., Cian, L., & Aydınoğlu, N. Z. (2017). Sensory Aspects of Package Design. *Journal of Retailing*, *93*(1), 43-54. https://doi.org/10.1016/j.jretai.2016.12.002

Liao, L. X., Corsi, A. M., Chrysochou, P., & Lockshin, L. (2015). Emotional responses towards food packaging: A joint application of self-report and physiological measures of emotion. *Food Quality and Preference*, *42*, 48-55. https://doi.org/10.1016/j.foodqual.2015.01.009

Liao, L. X., Lockshin, L., Corsi, A. M., & Chrysochou, P. (2012). Unconscious emotional effects of packaging design elements.

Machleit, K. A., & Eroglu, S. A. (2000). Describing and Measuring Emotional Response to Shopping Experience. *Journal of Business Research*, *49*(2), 101-111. https://doi.org/10.1016/s0148-2963(99)00007-7

Mehrabian, A., & Russell, J. (1974). The basic emotional impact of environments. *Perceptual and Motor Skills*, *38*, 283-301.

Mehta, R., Sharma, N. K., & Swami, S. (2013). The impact of perceived crowding on consumers' store patronage intentions: Role of optimal stimulation level and shopping motivation. *Journal of Marketing Management*, *29*(7-8), 812-835. https://doi.org/10.1080/0267257x.2012.729075

Norman, D. A. (2004). *Emotional Design: Why We Love (or Hate) Everyday Things*.

Olsen, S. O., & Skallerud, K. (2011). Retail attributes' differential effects on utilitarian versus hedonic shopping value. *Journal of Consumer Marketing*. https://doi.org/DOI: 10.1108/07363761111181527

Reingold, E. M., & Merikle, P. M. (1988). Using direct and indirect measures to study perception without awareness. *Perception & Psychophysics 44*. https://doi.org/10.3758/bf03207490

Same, S., & Larimo, J. (2012). *Marketing Theory: Experience Marketing and Experiential Marketing* The 7th International Scientific Conference "Business and Management 2012". Selected papers,

Schmitt, B. (2010). Experience Marketing: Concepts, Frameworks and Consumer Insights. *Foundations and Trends® in Marketing*, *5*(2), 55-112. https://doi.org/10.1561/1700000027

Schwager, A., & Meyer, C. (2007). Understanding Customer Experience. *Harvard Business Review*.

Shiv, B., & Fedorikhin, A. (1999). Heart and Mind in Conflict: the Interplay of Affect and Cognition in Consumer Decision Making. *Journal of Consumer Research*, *26*(3), 278-292. https://doi.org/10.1086/209563

Spence, C., & Velasco, C. (2018). On the multiple effects of packaging colour on consumer behaviour and product experience in the ‘food and beverage’ and ‘home and personal care’ categories. *Food Quality and Preference*, *68*. https://doi.org/10.1016/j.foodqual.2018.03.008

Sujana, N., Suwendra, W., & Suwena, K. R. (2020). *The Effect of Store Environment on Positive Emotional Response and Impulse Buying Moderated by Situational Factor* Advances in Economics, Business and Management Research, Volume 158, Teams.

Swetha Kodali, E. S. H. B., & Kumari, D. R. (2021). The Impact of Store Environment on Consumer Behavior. *International Journal of Current Microbiology and Applied Sciences*, *10*(2), 1739-1744. https://doi.org/10.20546/ijcmas.2021.1002.205

Vaidya, G., & Kalita, P. C. (2021). Understanding Emotions and their Role in the Design of Products: An Integrative Review. *Archives of Design Research*, *34*(3), 5-21. https://doi.org/10.15187/adr.2021.08.34.3.5

Vergura, D. T., & Luceri, B. (2018). Product packaging and consumers' emotional response. Does spatial representation influence product evaluation and choice? *Journal of Consumer Marketing*, *35*(2), 218-227. https://doi.org/10.1108/jcm-12-2016-2021

Wei, X., Ma, Z., & Liu, W. (2020). A meta-analysis of the effect of crowding on consumers' emotional reactions and shopping-related behavioral reactions. *Acta Psychologica Sinica*, *52*(10). https://doi.org/10.3724/sp.J.1041.2020.01237

Wrigley, C., & Ramsey, R. (2016). Emotional food design: From designing food products to designing food systems. *International Journal of Food Design*, *1*(1), 11-28. https://doi.org/10.1386/ijfd.1.1.11_1

Yang, M. (2016). *Study on the Interactive Packaging Design Based on Emotional Experience* International Conference on Arts, Design and Contemporary Education,

Young, S., & Asher, J. (2015). Emotional measurement and packaging research - What we've learned so far. *Quirk's Marketing Research Review*.

# Appendices

## Appendix A

**Figures and tables used for stimuli creation or scales**

**Figure A1**
*Original box of cookies*


**Figure A2**
*Original supermarket shelf*

**Figure A3**
*Neutral supermarket shelf*

**Figure 4**
*The Differential Emotions Scale*

| Factor | Item |
|---|---|
| I. Interest | attentive<br>concentrating<br>alert |
| II. Enjoyment | delighted<br>happy<br>joyful |
| III. Surprise | surprise<br>amazed<br>astonished |
| IV. Sadness | downhearted<br>sad<br>discouraged |
| V. Anger | enraged<br>angry<br>mad |
| VI. Disgust | feeling of distaste<br>disgusted<br>feeling revulsion |
| VII. Contempt | contemptuous<br>scornful<br>disdainful |
| VIII. Fear | scared<br>fearful<br>afraid |
| IX. Shame/shyness | sheepish<br>bashful<br>shy |
| X. Guilt | repentant<br>guilty<br>blameworthy |

Source: (Izard, 1977)

## Appendix B
## Appendices about the results

**Table B1**
*distributions throughout the different versions*

| | | LC / NS* | LC / S* | C /NS* | C/S* |
|---|---|---|---|---|---|
| Gender | Male | 13 | 11 | 11 | 10 |
| | Female | 23 | 25 | 23 | 24 |
| | Prefer not to say | 0 | 1 | 1 | 0 |
| Age | Average age | 36,5 | 36 | 35,3 | 31,7 |
| occupation | Working full-time | 17 | 13 | 14 | 16 |
| | Working part-time | 2 | 3 | 3 | 2 |
| | Unemployed and looking for work | 1 | 0 | 0 | 0 |
| | A homeworker or stay-at-home parent | 2 | 3 | 1 | 0 |

| | | | | | |
|---|---|---|---|---|---|
| | Student | 11 | 16 | 15 | 15 |
| | Retired | 3 | 0 | 2 | 1 |
| | Other | 0 | 2 | 0 | 0 |
| Frequency of buying cookies | Several times a week | 0 | 1 | 0 | 1 |
| | Once a week | 8 | 6 | 14 | 7 |
| | 1-2 times a month | 12 | 12 | 12 | 11 |
| | Less than once a month | 16 | 18 | 9 | 15 |
| Do you like to shop in supermarkets where there isn't much space to move around? | Definitely not | 18 | 14 | 20 | 15 |
| | Probably not | 15 | 15 | 9 | 11 |
| | Might or might not | 1 | 5 | 5 | 5 |
| | Probably yes | 1 | 2 | 1 | 3 |
| | Definitely yes | 1 | 1 | 0 | 0 |

*LC = Less crowded store *NS = Non-salient product

*C = Crowded store *S = Salient product