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**The impact of Neuromarketing research effectiveness on Impulsive buying
in the Egyptian hospitality Industry**

A Thesis Submitted in Partial Fulfillment for Doctoral Degree in Business Administration

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Abstract

The purpose of this research is to study the impact of the impact of Neuromarketing research effectiveness on Impulsive buying in the Egyptian hospitality Industry.

Thus, to understand more about the Neuromarketing effect that is still not matured enough in the literature of Marketing.

In order to perform this study, quantitative data from surveys was collected from 409 respondents who answered the questionnaires based in, and the quantitative data collected was analyzed using SPSS software (Statistical Package for Social Sciences).

from the quantitative data analysis, it is concluded that the neuromarketing in terms of Aroma, Labels and brand name are having a direct positive significant influence on the impulsive buying, emotional experience is having negative significant influence, on the other hand the neuromarketing in terms of atmosphere, music, and vision-interior design-lighting showed insignificant relation with the impulsive buying.

The research offers fresh perspectives on Neuromarketing and its effect on the impulsive buying, especially in the hospitality industry, which is immature, undeveloped science, by studying the neuromarketing in terms of atmosphere and environment, vision-interior design-lighting, music, aroma, emotional experience, labels and brand name and the impulsive buying in the hospitality industry.

Keywords – Neuromarketing, impulsive buying, vision, interior design, lighting, music, aroma, emotional experience, labels, brand name.

1. Introduction

Referring to previous researches, there are *Neuromarketing* factors that can motivate the *impulsive buying* behavior (Sharma, 2019).

Neuromarketing is an advanced latest area of science which has its origins from neuroscience and psychology.

The term was first introduced in 2002 by a Dutch marketing professor called Ale Smidts, other researches started in the early 1990s which mentioned that consumers are unconsciously realizing what they want, how much they will pay, and what kind of promotional activities repeated to them every day (Sharma, 2019).

Neuromarketing is an emerging established that connects neuroscience and consumer behavior studies together with economics (Rawnaque, et al., 2020).

As per (Plassmann, et al., 2015) they assess the neuromarketing by utilizing the neuroscience and physiological techniques to understand and increase the awareness of the consumer behavior, desires, decision making, human cognition characteristics in addition to behaviors correlated to marketing. Generally, as per (Woodwood & Bilous, 2013) research it can be said that the neuromarketing is compared and determined by sensory marketing, like when listening to a right background music, or smell a nice aroma, or viewing a relaxing color, all these are connected to the product/service, the organization and branding. According to (Azman, et al., 2019) Marketing strategies are concerned by the consumer reaction, and understanding the visual and atmospheric environmental factors that affects the customer behavior, that can directly influence the customer buying decision making.

2. Literature review and hypotheses development

Neuromarketing is related to more than one field of study that integrates and combines psychology, neuroscience, marketing and economics to help in understanding and analyzing consumer cognitive and emotional response when exposed to several marketing stimuli (Sebastian, 2014).

Logical bases of neuromarketing are on proposing the understanding of consumer brain and how it perceives, processes, thinks and reacts, leading to have more effective marketing strategies (Horska, et al., 2016). Neuromarketing is an advanced latest area of science which has its origins from neuroscience and psychology. The term was first introduced in 2002 by a Dutch marketing professor called Ale Smidts, other researches started in the early 1990s which mentioned that consumers are unconsciously realizing what they want, how much they will pay, and what kind of promotional activities repeated to them every day (Sharma, 2019). The neuromarketing was defined by Collins Dictionary as a tool of studying the consumers' brain patterns in order to know their responses for specific products and advertisements, these studies must be done before they start making any new campaigns for their advertisement. (Sharma, 2019). Nowadays, Science is requesting neuromarketing to be highly used for promotional campaigns in order to make them more effective and to provide explained comprehensive understanding for the consumer preferences (Sharma, 2019). The goal of neuromarketing is to acknowledge the consumer thinking ways and to help in the selection of the product with the assistance of several methods obtained from neuroscience (Lee, et al., 2007).

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Neuromarketing is not only concerned by the brain physiology and activities but also laboratory ambience, clear brain operation and physiology that lead to marketing process understanding. For Future studies like psychological and social neurology, may strongly help in growing this research study area.(Mileti, et al., 2016). As stated by (Royo-Vela & Varga, 2022) Neuromarketing science is expected to improve the consumer behavior and enrich the businesses researches.(Royo-Vela & Varga, 2022) stated that neuromarketing science future is not stagnated, but it is predicted to be gradually modestly progressively used.

The new updated marketing is defined by (Moskalenko & Zouzuliov, 2018) as the neuromarketing science that helps in the modern marketing research. when a person is exposed to a stimulus, it provides the marketers with crystal clear understandable accurate data. For leading companies this science has become very common, was noticed that it is growingly used in Ukraine, especially because this helps increasing profits, and accordingly increase the product ability to compete in the market. Neuromarketing is the combination between neurology techniques, methods, technologies that strengthen the business and customer unconscious communication and helps boosting the customer desire to buy more from the products or the services.

The marketing world is been leaded nowadays by neuromarketing and has been used especially by most of the digital platform companies. The marketers biggest challenge is to get better results with the less minimum expenses. By using the neuromarketing, marketers can reconsider their marketing strategies also can restructure them with the smarter efficient new ones, to increase the effectiveness of their marketing strategies. One of the goals of neuromarketing is to understand how the brain of the potential customer's brain actually makes decisions, this analysis leads to guide the marketer to structure the most effective marketing strategies specifically for their business (Sharma, 2019).

Emotional and optional activities are the factors that influence the consumer choices,

On the other hand, decision making is affected by cognitive ones (Levytska & Nifatova, 2019) .

Accordingly, as an alternative for the rational acting, consumers like to be sensible and logical.

All this informative information can be easily used to help designing an effective restaurant/café menu, leading to more sales and profits.

Neuromarketing topic appeared from the neuroscience tools/methods that are used for marketing usage, i.e., the response of the consumer behavior towards definite stimulus (Lopes, et al., 2017).

Accordingly, neuromarketing is related to more than one branch of knowledge with significant future, since it permits the researchers to better recognize/analyze and estimate the decisions and behaviors of the consumer. Consequently, neuromarketing will create new theories and applications in the marketing field. Despite that, the success of this future may be limited as the marketing researchers might be a bit confused while using the neuroscience methods. (Cardoso, et al., 2022).

Neuromarketing is related to a mixer of several knowledge branches, where it is combining the theories from marketing and tools/methods from neuroscience, control from economics, in addition to psychology and tourism in order to recognize the consumer behaviors and decisions.

This field is guaranteed, as the neuromarketing conclusions can conduct and create new creative marketing theories or supplement/assist the old ones (Lopes, et al., 2017).

Neuromarketing supports the researchers to study the value of unconsciously facts, as it has been stated that 95% of what is recognized is totally perceived (Scheier & Held, 2013).

Neuromarketing field is predicted to grow in the future as the business believes that using neuromarketing will save time and provide higher efficiency.

Being able to predict the shopping behavior of the customer, the neuromarketing is considered an attractive marketing research method, by giving the business owners a real convenient data, in addition to the effective data provided concerning the self-awareness of the level of desires. (Nevenka, et al., 2022)

Neuromarketing includes the use of neuroscience methods/tools to define the characteristics of a person's consumer behavior in response to several marketing motivations (Kurban, 2017).

The impulsive buying was conceptualized at first conceptualized as a purchase with no planning, that is, “the difference between a consumer's total purchases at the completion of a shopping trip, and those that were listed as intended purchases prior to entering a store” (Rook, 1987). In the meantime, many authors have stated that defining the impulse buying is very simplified when depending only on unplanned purchases bases (Rook, 1987). One of the first studies on consumer buying habits specially in impulsive buying was accomplished by (Rook, 1987) , which was mostly focusing on understanding how the phenomenon came and its expansion. Some years later after the first studies, the impulse buying importance was highlighted by another study that proved that massive sales percentage especially in retail stores was from the unplanned purchases (Clover, 1950).

The definition was a bit improved by declaring that all impulsive purchases can be theorized as unplanned purchase, but not all unplanned purchases can be theorized as impulsive ones. (Koski, 2001).

Simply the unplanned buying/purchasing can take place as some consumer needs to buy a product, and this specific product is not written on the prepared shopping list.

The unplanned purchases are usually connected to impulsive buying and not usually necessarily go along with an urgent wish or real strong feelings (Amos et al., 2014).

Some authors such as (Kollat & Willett, 1969) prolonged the concept by beginning that impulse buying come up after being exposed to a stimulus. Due to the focus on the external factors of retail checkouts etc. the studies afterwards always focused on reminder impulse (Piron, 1991) and suggested impulse (Stern, 1962). The pure impulse buying has a deeper meaning than these, as it is created from a

psychological desire leading to a psychological need, then it is followed by a purchasing action (Dutta and Mandal, 2018; Yuan, 2020).

The pure impulsive action is usually ignoring stimulus category, which indicating that they were not increased when opposed with pictures of food in hospitality industry (Giel, et al., 2017) .

This further shows how pure impulsive buying is depending on many factors of the environment (Meilmann & Brunner, 2019) that can lead to the increasing of food consumption that can cause obesity, this behavior can be related to “the law of effect” by Edward Thorndike.

The law of effect states that, “when satisfaction follows an association, it is more likely to be repeated” (Cherry, 2020). Nowadays researchers and organizations are very interested to understand the psychological underpinning of the Impulsive buying behavior, also the impulsive temptation in order to increase sales. (Kacen & Lee, 2002). Impulsive purchasing is not only a consumer concern, but also it is a critical sensitive tactic for retailers seeking to increase their sales volume size (U.Akram, et al., 2018) Because of its importance, researchers have studied impulsive purchasing behavior for decades from multiple perspectives (Xiao & Nicholson, 2011).

(Schiffman & Kanuk, 2007) stated that one of the most important and essential strategy for retailers to study is the consumer behavior; where the consumer behavior becomes the business's target and one of the main factors to achieve market competition. The customer impulsive buying behavior is one of the major business' goals. (Schiffman & Kanuk, 2007) added that the impulsive buying behavior is an inner physiological, high priority decision. The Consumer behavior studies are searching to know more about the factors that can affect the impulse buying, either internal (like personal characteristics) or external factors (like the environment, situation, store, product factors) (Amos, et al., 2014).

From previous studies, it has been highlighted that the impulsive buying was originally affective in nature, so the hedonic and the emotional sides for these purchases identify the consumer behavior to a great extent more than the practical, functional and rational sides (Luna & Quintanilla, 2000).

Previously in the late 1980s, it was agreed that innovations such as direct marketing, in home shopping and credit cards had affected the impulsive buying and made it easier than before (Rook, 1987).

The internet development to the 2.0 Web has seriously changed the consumers and companies' ways of interactions also the carry out transactions. Specially because it has been noted that social commerce is a branch of e-commerce that is responsible to incorporates the social media use in all commercial activities. (Xiang, et al., 2016). Thus, in terms of sensory stimulate superior factor is still the physical store, in which it can trigger the emotional and insensible unconscious response leading to the impulsive buying behavior more than the online channel (Krishna, 2012).

The regression analyses made by (Laura & Carlos, 2018) showed that encouraging factors are more powerful for online impulse buying compared to the discouraging factors. The easy way of payment, the

more variety and the existence of the customized recommendations can be strong tools to boost impulsive buying through this channel.

In addition to that, the social networks can also play an important role in motivating the behavior of impulse buying. Some researches results detected that Facebook and Instagram have a great degree of penetration, also the participants admitted that these social networks had triggered some impulse buying and demonstrated a notable desire to use them to make purchases.

A large scale of clarification concerning how the theory of reasoned action from a food consumption perspective summarize pure impulse buying from an affective point of view (Smith & Robbins, 2013). Theory of Hawkins-Stern pure impulse buying and consumer obesity Impulse buying is a huge concern for retail research (Cakanlar & Nguyen, 2019).

However, the literature shows that within the impulse buying phenomenon, pure impulse buying behavior and consumer obesity have been hardly linked in food consumption study (Meilmann & Brunner, 2019). Most of the studies have been mainly focusing on any external stimuli, for an example on-the-go impulsive checkout stimuli like attractive chocolates, and many sugary foods at the checkout (Pallikara, et al., 2020). Several researches have proved that consumers are more likely to practice more impulsive buying whenever the background music rhythm/tempo is faster. The attitude of consumers' shopping calmed the effect of background music rhythm on impulsive buying, while hedonic consumers denied to have more impulsive buying behavior under faster background music rhythm. (MA.Jia-Yin, et al., 2017) Surprisingly, most of the total spending of consumers in shopping malls are obtained from the impulsive buying behavior (Zeeshan & Obaid, 2013) Manager wishes to stimulate consumers' impulsive buying behavior by using marketing strategies (MA.Jia-Yin, et al., 2017).

According to previous studies and researches, the background music has been proved that it stimulates the impulsive buying independently, also reacts and affects other factors that impacts the behavior of impulsive buying (Demoulin, 2001).

Background music, harmonized with other factors, has many effects like reducing consumers' time understanding of purchase and waiting (Chebat, et al., 1993) affecting the perception of consumers' for the whole environment (Hui, et al., 1997), leading to sales increase (Morrison, et al., 2011), impacting the impulsive buying tendency of consumer, and driving some changes in consumers' experiencing attitude in addition to increasing the interaction with the environment (Morrison, et al., 2011).

All in all, background music has the full capability to influence consumers' perception and increase consumers' positive emotions, leading to shopping great enjoyable experience and increase the tendency to have more impulsive buying behavior (MA.Jia-Yin, et al., 2017).

Generally, the background music can not only affect the consumer behavior directly but also affects it indirectly (Fiegel, et al., 2014). Thus, when customer is walking fast in the store under fast music rhythm.

It is easier to produce nervousness, which can decrease the impulsive buying behavior chance. However, consumers can stay longer when they are affected to the slow music tempo, leading to have more probability to have more unplanned purchases (MA.Jia-Yin, et al., 2017).

Consumers can differentiate the product or service they feel through experiential marketing because every company offers a different experience. To encourage customers to buy back, business people must also provide unforgettable experiences (Ferdika, 2018).

During the pandemic time caused by covid-19 virus, expensive prices made high amounts of impulsive purchases, since the consumers felt their need and may be afraid if the goods requested may be out of stock soon. Another fact is when the government performs the social distancing. Some consumers group to make purchases of essentials impulsively. This phenomenon is also used by many sellers, some use it by giving some promotions or even can raise prices to sell more. Based on this fact, this study proved that impulsive consumer purchases are affected by prices and promotions (Pramezwary, et al., 2021).

(Yalin, 2015) proclaimed the impulsive purchasing behavior guaranteed pleasure, satisfaction and some regret feelings. According to (Jung, 2017) the motivating factor for impulsive can boost consumers' happiness of their purchases while also having positive impact on their mood.

Consumers sometimes buy products for other reasons rather than that product is really needed, such as to uplift their moods, express their personalities, or just for pleasure. Marketers understand very well that the real purchasing action is a result for the impulsive buying customer behavior. (Verplanken & Herabadi, 2001). What a consumer perceives at the place will influence their impulsive action.

There are some factors that can clearly attract customers to the place and even encourages them to buy.

The optical presentation promotions are called "silent sales person" as it delivers the needed information to the customer, in addition to the suggesting items that can be added to the planned buying list. (Bhalla & Anuraag, 2010).

(Moavery & Vazifehdost, 2014) proved that there is a significant relationship between the age of women especially young ones and the vision factors affecting their impulsive buying behavior.

Referring to previous researches, there are some *Neuromarketing* factors that can motivate the *impulsive buying* behavior (Sharma, 2019).

Referring to the law of effect leading to reduce the dopamine receptors D2, from the neurobiological view “directly affect the mesolimbic dopamine and opioid pathways, with consumption of each type of substance increasing neurotransmitter levels” (Rada, et al., 2005). these neurotransmitter effects cause “cue-induced anticipation” for the fats and sugar consumption (Smith & Robbins, 2013).

Leading to “raising activity in the fronto-limbic circuitry to correspond with striatal dopamine D2 receptor release” (Stern, 1962) which leads to excessive *impulsive consumption* of foods and sugary items, waiting to receive the expected reward known as “after-effect” of feeling well based on the food

consumption (Davis and Carter, 2009) (David & Carter, 2009). Afterwards, this *impulsive* behavior turns into compulsive referring to the *neurobiological* technique and the effective law of consumption (Smith & Robbins, 2013).

Neuromarketing is always searching and investigating the marketing stimuli influence on the consumers with unbiased information from the neurology by studying the human smelling, restraining, touching, and tasting sensations (Januar, et al., 2019). Collecting information from the customers by using some visual methods, the customer looks to the brand, checking the color and overall design, this visual tool is very interested as 25% from the brain areas are correlated to the vision causing *impulsive buying* accordingly. In the meantime, the traditional questionnaire tool is not enough to evaluate and study the consumer behavior (L. Alvino, 2018).

Usually, the Consumers do not really know the exact explanation for their choices, that is because the decisions are happening under some unrecognized factors or outside the conscious awareness (N. Kalkova, 2020). Accordingly, the qualitative tools are not that much efficient to analysis the consumer behavior properly, by using the neuromarketing, the marketing researchers can collect accurate data to evaluate the consumer impulse reactions. As the brain is not visible and clear to read by our normal eyes, neuromarketing achieved this and succeeded to record the needed data (Mudryk, 2020).

As expressed by (Plassmann, et al., 2015) It studies neuroscientific ideas and techniques to study the behavior of consumers and their purchasing behavior. In that it is a type of non-clinical consumer behavior research, neuromarketing is connected to consumers neurology and neuroeconomics. The ideas may be applied to marketing to learn more about how marketing can be used to understand the unexplained psychological state that cause sensory activities and brain reactions that are assisted using neuroscience research rather than marketing. In order to understand impulsive human behavior, in light of thoughts and behaviors and emotional reactions, unconscious and conscious states, in response to a marketing stimulation and activities, the brain and nervous system are monitored. Accordingly, the information gained from a neuromarketing exploration helps to advance and develop marketing theories and models as well as the planning and implementation of marketing techniques and advertisement business strategy.

Another topic raised by (Alexander, et al., 2015) that neuroscientific requires to study decision-making. Due to a major biological function, marketing academics may study and monitor the customer behavior and decision-making. The neurological system's change in neurotransmitters, together along with heartbeat, respiration, and attention rates, can have a major effect on how marketing theory and practice understands the customer behavior.

The production sector needs a strong marketing strategy to improve customer satisfaction given the rising consumer interest with economic competition. The five senses of sight, touch, smell, taste, and listening are all used in experiential marketing (Reghukumar, 2019).

Applying visual techniques to extract information from customers through brand, design, and color of a product. Since almost 25% of the brain's regions are connected to vision, the visual approach also pleases consumers' attention when they observe a product and encourages impulsive buying (Zamani, et al., 2016). As per (Burton, et al., 2019) had stated that the impulsive buying can be obtained by a sudden desire or a visual stimulus, a marketing campaign, or a low knowledge of the advantage and disadvantage of the purchase. Previously in other studies (Khurniawan, et al., 2017) mentioned that the consumer enjoyment and satisfaction was measured using questionnaires with some lighting stimulation, and the study concluded that the dark lighting system may increase the impression and increase the stay duration of the customers, ensuring to have more time to think. On the other hand, the usual qualitative methods like questionnaires are still not efficient to examine and analyze the consumer behavior (Alvino, et al., 2018). As the customers decision making happened away from the conscious understanding and may be impacted by the effect of hidden factors, most of the time the customers can neither illustrate nor explain their choices (Kalkova, et al., 2020).

Accordingly, in order to raise the sales, the science of marketing make use of the neuromarketing to measure the consumer impulsive reactions, as the brain reactions are undetectable by our observation, neuromarketing allows the marketers to understand more about these reactions (Mudryk, 2020).

As per (Azman, et al., 2019), Marketing strategies are concerned by the consumer reaction, and understanding the visual and atmospheric environmental factors that affects the customer behavior, that can directly influence the customer buying decision making.

The market is loaded with several different products. All business owners are aiming to have the market leadership, and to have any buyer to turn to a loyal regular buyer. Accordingly, marketers are searching all the time to know more about what really the customer wants, the preferred desired service expected, and how to grab the customer attention to make them make the purchase (Zubko, et al., 2020).

That's why the marketers are very keen to study the consumer behavior in order to know their reaction towards the brand, the marketing companies, quality of the product or service, etc.. (Zubko, et al., 2020) Neuromarketing helps in achieving and covering all these factors.

Previously, (Woodwood & Bilous, 2013) conducted earlier in the 1990s at Harvard University, the research stated that the neuromarketing is the output of combining the economy and neurology. it was proved that the customer makes decisions based on logical choices and emotional feelings that might not always be controlled. The neuromarketing studies the consumer brain behavior like the memory, the thinking process and the physiological reactions. The study targeted to determine many human

physiological responses. Mainly measured that heart beats and rate, the breath, the eye movement, the hand wetness degrees where there is an activity variation in the brain. This procedure helps to estimate consumer behavior and assess their attitudes toward a product even before the customer been aware of his choices. Generally, as per (Woodwood & Bilous, 2013) research it can be said that the neuromarketing is compared and determined by sensory marketing, like when listening to a right background music, or smell a nice aroma, or viewing a relaxing color, all these are connected to the product/service, the organization and branding.

Accordingly, the neuromarketing processes deliver the product understanding, from the color, the aroma and the overall image, in that way the businesses are able to improve the sales and strengthen the customer loyalty. Their study stated that there are three ways to influence the unconsciousness of the customers, using promotions, marketing and audio marketing. (Woodwood & Bilous, 2013).

Neuromarketing science has proven that the brand is not only about the attractive good packaging. When spending time to study and dig deep in the customers brains, it was discovered why some products failed and why others succeeded, accordingly this knowledge highly assists the marketing and promotion, as well as increasing people awareness for what is happening inside our brains during the purchasing decision making process (Bosak, 2013).

Customers are not always completely aware about their needs and tastes. Most of the time the customer is unaware of his or her true motivations, the choice is mostly caused by subconscious motivations and not rationality. The science of neuromarketing will assist the business owner to properly choose the correct aroma and music backgrounds that pushes the customer to purchase as those are the factors that demonstrate the accurate response of the human subconscious (Bosak, 2013).

Another major factor is the taste. Many businesses are now holding tasting events, that enables them to increase the sales related to their competitors.

2.1. Atmosphere-environment:

The place environment is proved to be able to increase customer excitement and buying impulse, in addition to the visual merchandising. (Kolter, 1973)

(Levy & Weitz, 2011) stated that business owners have to design a proper environment that can target boosting the customers buying action. The surrounding environment/atmosphere of the place encourage the customers to buy. The store environment involves the place interior design, layout, and vision marketing effects, lighting system, aroma and music used in the place.

These factors are used together to create the image of the place in the customer brain.

The impulsive buying behavior is highly affected by stimulations, whenever these stimulations are simple and comfortable then some impulsive purchasing actions may be taking place.

The place environment/atmosphere has a direct effect on the impulsive buying by evaluating the lighting system, the design, the colors, and the overall aroma of the place. The impulsive buying can be affected by the labels. Customers were seriously frightened off by the unique packing and cheap prices. Those parameters are proven for impacting the customer impulsive buying behavior.

As per (Giraldi, et al., 2022) In order to obtain maximum engagement and pleasure for visitors/customers, the function of emotional responses throughout the customers experience is becoming extremely important. From latest researches, it is clear that the place environment can affect the customers satisfaction regarding the planned customer/tourist surrounding conditions like all sensation factors that can affect the customer (vision, smell, sound and physical tangible touch factors).

In the hospitality industry, the researches have studied the impact of the environmental factors (like vision, sound, and aroma) on the costumer emotions and therefore in their overall experience (Mazaheri, et al., 2014). As mentioned by (Giraldi, et al., 2022) managers and marketers in the tourism/hospitality industry should develop the best possible environment to allow visitors to have delightful experiences.

As for the external factors, (Mehrabian & Russell, 1974) model of the effect of environment was modified by (Donovan & Rossiter, 1982) , who were seeking to detect the share of atmosphere stimuli on the customer psychological states.

Similar studies have also been used by other researchers, who tried to study how much the environmental factors can impact behavior of customers. (Giraldi, et al., 2022).

In order to influence a customer's thoughts and emotional responses, retailers use lighting systems and effects, colors, music background, and aromas. (Levy & Weitz, 2011).

As per stated by (Spence, et al., 2014) In the food and beverage industry where drinking and eating activities are affected by the sensational qualities and the taste, accordingly, more studies should be conducted on the factors affecting the environment. Long ago, (Kotler, 1973) mentioned that in food and beverage industry like restaurants, having well defined and experienced customer service is extremely important. Where the service experience is evaluated by the customers experience with the surrounding detailed environment. In general, the environment is referring to the physical environment (where the customer is receiving the service) and the interaction between the stuff and the customer, in addition to the interaction between the neighbor customers around. Most of the environmental factors can be called the place atmosphere. According to (Kotler, 1973), atmosphere is the deliberate design of a location to produce specific effects that are perceived by our five senses, providing information about the environment's quality, and increasing a consumer's likelihood of making a purchase.

The environment is composed of both concrete and abstract dimensions, according to Bitner's "Service space" concept. The atmosphere is one of these dimensions. The ambience is an unnoticeable background

element, such as music, fragrance, temperature, lighting, and sound, that influences the subconscious mind despite being invisible to the eye (Baker, 1987).

Several researches stated before that the ambience is one of the most significant elements influencing the purchasing choice (Heung & Gu, 2012). Ambience is defined as an essential element that generates the business atmosphere (Ryu & Jang, 2008). Numerous studies have shown that ambient factors, including music as mentioned by (Milliman & R., 1986), temperature (Bell & Baron, 1977), aroma (Biswas & Szocs, 2019), and lighting (Biswas, et al., 2017), (Şahin & Yazıcıoğlu, 2020) and some other ambient characteristics, have an impact on consumer experience, return intent, and total sales.

In addition to the lighting system, interior design, place temperature, colors used, and other environmental elements, music is a component of the notion of ambience. According to certain theories, music has the ability to impact human behavior through affecting neural activity, physiological and emotional changes, psychological state, and the classical conditioning process (Caldwell & Hibbert, 2002).

Thus, the study hypothesizes the following:

H1: There is a significant relationship between Neuromarketing in terms of Atmosphere-environment and the impulsive buying behavior in the hospitality industry.

2.2. Vision-Interior design-lighting:

The interior design with the optical merchandising is considered a major tool to increase the customer enjoyment and satisfaction during the customer visit. Generally, the focus is to lift the customer experience. (Cant & Michael, 2013) the proper optical merchandising will raise consumer interest in purchasing. (Khandai, 2012) argues that techniques used in visual marketing, such as display cases and in-store displays, work as powerful stimulants that influence customers to make impulsive purchases as soon as they enter the place.

Consumers are directed toward the items they are looking for through visual marketing displays, which also influences their purchasing decisions. (Cant, 2013a).

As (Singh & Satish, 2015) stated that not only the consumer buying behavior and the visual marketing are directly proportional but also the studies proved that the visual marketing is the major factor that affects the customer buying behavior.

(Cheng, et al., 2009) according to studies on the shop atmosphere that focused on color, while cool light is correlated with significantly lower levels of stimulation and enjoyment than warm color.

(Spies, et al., 1997) explained that the mood of the customer is highly directly affected by the atmosphere along with the used hidden effects. Customers automatically spent more money in nice place where they are enjoying and delighted.

Previously it was stated by (Schielke & Leudesdorff, 2015) that place lighting system influences the environment with many factors like warmth, excitement, anxiousness, and isolation, which highlights the importance of the lighting system to indicate more than just a factor of vision.

The visual effects work to encourage things in terms of color schemes while educating consumers to encourage instant purchases. It is believed that using these effects, they will boost consumer interest in a product or brand on such a display rack and motivate them to buy more, maximizing sales and profits for businesses. Impulse buying is the act of making unexpected, fast, and unplanned purchases. The customer impulsive buying behavior is highly affected by the vision. Business owners may design attractive display, with unusual lay out, with nice looking packing in order to boost the customer impulsive buying. There are four factors affecting the vision like the window display, modeling display, product display and the marketing displays. All those factors have been proved that they can directly affect the consumer impulsive buying behavior (Mehta & Pawan, 2013).

(Sahni & Arvind, 2014) approved that all visual marketing factors are highly connected and this connection boosts the impulsive buying for young consumers.

It was earlier stated by (Gudonaviciene & Alijosiene, 2015) that Visual marketing factors of display and the interior design are the most effective factors that increase the impulsive buying behavior.

Apart from that, (Bhatti, 2014) mentioned that the meeting or conference area, and the display are inversely proportional to the customer impulsive buying behavior, although the two dimensions of visual marketing factors are directly proportional to the consumer impulsive behavior like the marketing and the brand name. As concluded by (Widyastuti, 2018) All Businesses have to realize the importance of impulsive buying behavior where they can easily boost the sales. Visual marketing has a great positive effect on impulsive buying, that can be measured by the display, the modeling and floor.

According to measurements of the brightness, design, visual (color), and fragrance in the business, a warm atmosphere has a pleasant and major effect (Widyastuti, 2018).

The environment will be brighter and cozier when using increased light than it is in a darker. [8]. (Sun, et al., 2019). As per (Januar, et al., 2021) research, it was proved that the lighting system intensity has a clear impact on the customer impulsive decision making, and the brighter lighting system the more powerful impact is obtained. (Bosak, 2013) claimed that the primary methods for influencing customer's behavior is visualization, that's the main method used in the internet.

Thus, this study hypothesizes the following:

H2: There is a significant relationship between Neuromarketing in terms of vision factors and the impulsive buying behavior in the hospitality industry.

2.3. Music:

As music is composed of a set of compounded expressive sound tracks. It has several important factors, like: rhythm, pitch, melody and harmony (Lucas & Koff, 2014).

Accordingly, to increase the customer senses and receive from them a specific desired planned consumer behavior, some malls and other places use the background music to achieve their planned goals (MA.Jia-Yin, et al., 2017). (Cheng, et al., 2009) reported that Fast music is related with a higher degree of excitement and satisfaction than slow music. It has been a long time now, many practices are concerned of the effect of music on the customer behavior, and it is known that music is the cheapest and easiest changeable factor. (Caldwell & Hibbert, 2002).

(Ding, et al., 2012) studied how music is affecting the customer purchasing behavior, the spending time and the satisfaction of the customer (Eroglu, et al., 2005), have been conducted in some researches but the music effect on the industry of food and beverage is still not enough, narrow and a bit poor, in addition to that there is not a clear agreement for the recent studies.

Additionally, it has been demonstrated that the musical genre and the musical elements (such as tempo, beat, tone, and loudness intensity) have a substantial influence on audience members' behavior (Garlin & Owen, 2006). In the research conducted by (Şahin, 2022) the impact of musical speed on the amount of time spent eating in a restaurant setting was analyzed, and the study aims to add to the analysis of the topic from a cuisine perspective. It also tries to assist resolve the conflicting theories on how musical tempo affects eating time in the research. As described by (Woodwood & Bilous, 2013) the audio neuromarketing studying branch is studying the influence of sound on the customer behavior. Adjusted measured music has been proven to have a direct impact on the customers impulsive buying purchases by 35% to 40% more than it was planned.

Nowadays music is all over most of the places (Bosak, 2013). All businesses, including shops and restaurants carefully chose their played music. The proper music generates the needed emotions and wished consumer behavior.

Thus, the study hypothesizes the following:

H3: There is a significant relationship between Neuromarketing in terms of Music and the impulsive buying behavior in the hospitality industry.

2.4. Aroma:

According to (Bosak, 2013) it was declared that there are many marketing studies the fragrance and its impact on the customer behavior. These kind of neuromarketing proved to have a high influence on the customers emotions and decisions.

Brands with fragrance are significantly highly recognized and more unforgettable. The place with a good fragrance is highly recalled, in addition to that, customers can form impressions of particular items through fragrance. The research proved that the fragrance in retails can boost the sales by 15%.

The aroma is known as the greatest straight passage to the customer heart, as it provides a combination of feeling, emotions, and bring back some memories. In many businesses the smell has been used to increase their sales, like the smell noticed in the area when there is McDonald's (Bosak, 2013).

Thus, the study hypothesizes the following:

H4: There is a significant relationship between Neuromarketing in terms of Aroma and the impulsive buying behavior in the hospitality industry.

2.5. Emotional Experience:

According to (Giraldi, et al., 2022) it was raised that one of the main goals that marketing managers in all industries need to achieve, either if they are working on the creation of products or providing services, is trying to maximize the customer satisfaction using improved enhanced Customer Experience.

It has been stated before by (Carbone & Haeckel, 1994) that any service or product is used or purchased by any customer, that action of using or producing generates emotional experience, that could be either positive or negative experience.

(Desmet & P., 2003) it has been well known that the emotions produced from specific stimulations are highly affecting the experience and satisfaction of any customer.

As (Lively & Heise, 2014) stated that recent sociological studies believe in defining emotions as "responses that relate to physiological expressions."

For instance, when there is a good emotional connection with a thing or choice, then we can say that the overall customer experience is highly affected by the emotional reactions that was generated by the stimuli, accordingly in this situation, we can say that the customer's physiological state has become an extremely important source of information that must be studied (Martin & O'Neill, 2003)

When illustrating the importance of "unmanageable" factors in terms of external factors that cannot be managed, as things beyond of our control, like the climate changes (Bujisic, et al., 2019).

As stated by (Generosi, et al., 2020), they employed a neuromarketing tool that was able to identify and relate in real-time the participant's facial expressions to emotions (anger, anxiety, anger, boredom, neutrality, amazement, and pleasure), consequently recognizing the emotional values in terms of the emotion's positively or negatively.

Results from the research (Giraldi, et al., 2022) clarify the function of participants' responses, recommending significant parameters to be considered concerning the customer experience as they might

affect participants' feelings, happiness, and quality perception, as well as to guide managers' and marketers' future decision-making and recognize the true effects of the experiences that was created. One of the main objectives of hospitality marketing is to create customer experience that may inspire unique unforgettable experiences (Pizam, 2010).

Experience is described as a variety of sensory components that engage all five senses, giving the customers sensory experiences (Gilmore & Pine, 2002). Another definition for the experience that was by (Slåtten, et al., 2011) clarified that a visitor who purchases an experience and spent moments that involve them a long-time satisfied feeling, that leads to creating special unforgettable experience.

Researchers and entrepreneurs in the market have focused their attention on topics such how emotions affect intentions to suggest products or services, fulfillment, trustworthiness, and commitment (Guido, et al., 2013), customer helpful positive word of mouth (Amatulli, et al., 2021)

Additionally, as stated by (Prayag, et al., 2017) several studies have indicated that feelings strongly impact the customer behavior. The atmosphere of a particular location is described by sensory impressions, which also affect the emotions of people who like it (Mazaheri, et al., 2014)

The impact of music on consumers' emotions has also been proved by other researchers like (Oakes, 2000). It was concluded by (Giraldi, et al., 2022) that the food industry and Tourism marketers must take full use of the incredible potential given by monitoring customer's emotions and impulsive responses.

Thus, the study hypothesizes the following:

H5: There is a significant relationship between Neuromarketing in terms of emotional experience and the impulsive buying behavior in the hospitality industry.

2.6. Labels and brand names:

It was mentioned before by (Sonadakh, 2011) that for providing more purchasing opportunities for consumers, private label brands are introduced. The product has a significant advantage when presented under the business's unique brand because it will almost definitely not be found elsewhere retail.

The unique business labels were developed by several retailers like Carrefour, Alfamart, Hypermart, Hero. The work done to develop the unique labels is considered to be a factor to raise the loyalty of the customers. Because private label items are exclusively provided within a limited number of the business locations, it is expected that their existence will increase impulse buying behavior. In this instance, the seller has to be aware of the variables that might stimulate impulse buying in order to improve consumer spending. It is possible to control and improve variables that have been proved to have a direct impact in addition to reaching a sales increase. As per (Bhattacharya, 2013) Selling goods have been developed nowadays, requiring unusual advanced ways to attract customers. In addition to that the strategies must be

designed to achieve the customers emotional needs and taste more than competitors. Today's businesses develop by selling items under their personal brand name to stay competitive.

The product has a significant advantage since it can only be found only through the usage of their own brand. Retailers have work on increasing their knowledge concerning this topic, and have more actions to monitor and grow their business by using this special labeling.

In addition to that (Corstjens & Lal, 2000) stated that the unique customized labels are considered a branding uniqueness business, further to that the product special varieties, and the exclusive label, leading to have a strong loyal relationship with the customer. However, (Ashokkumar & Gopal, 2009) proclaimed that the unique labels products are well known as low priced and quality.

Thus, the study hypothesizes the following:

H6: There is a significant relationship between Neuromarketing in terms of labels / brands name and the impulsive buying behavior in the hospitality industry.

Accordingly, the research hypothesizes are as the following:

H1: There is a significant relationship between Neuromarketing in terms of Atmosphere-environment and the impulsive buying behavior in the hospitality industry.

H2: There is a significant relationship between Neuromarketing in terms of vision factors and the impulsive buying behavior in the hospitality industry.

H3: There is a significant relationship between Neuromarketing in terms of Music and the impulsive buying behavior in the hospitality industry.

H4: There is a significant relationship between Neuromarketing in terms of Aroma and the impulsive buying behavior in the hospitality industry.

H5: There is a significant relationship between Neuromarketing in terms of emotional experience and the impulsive buying behavior in the hospitality industry.

H6: There is a significant relationship between Neuromarketing in terms of labels / brands name and the impulsive buying behavior in the hospitality industry.

2.7. Conceptual Model:

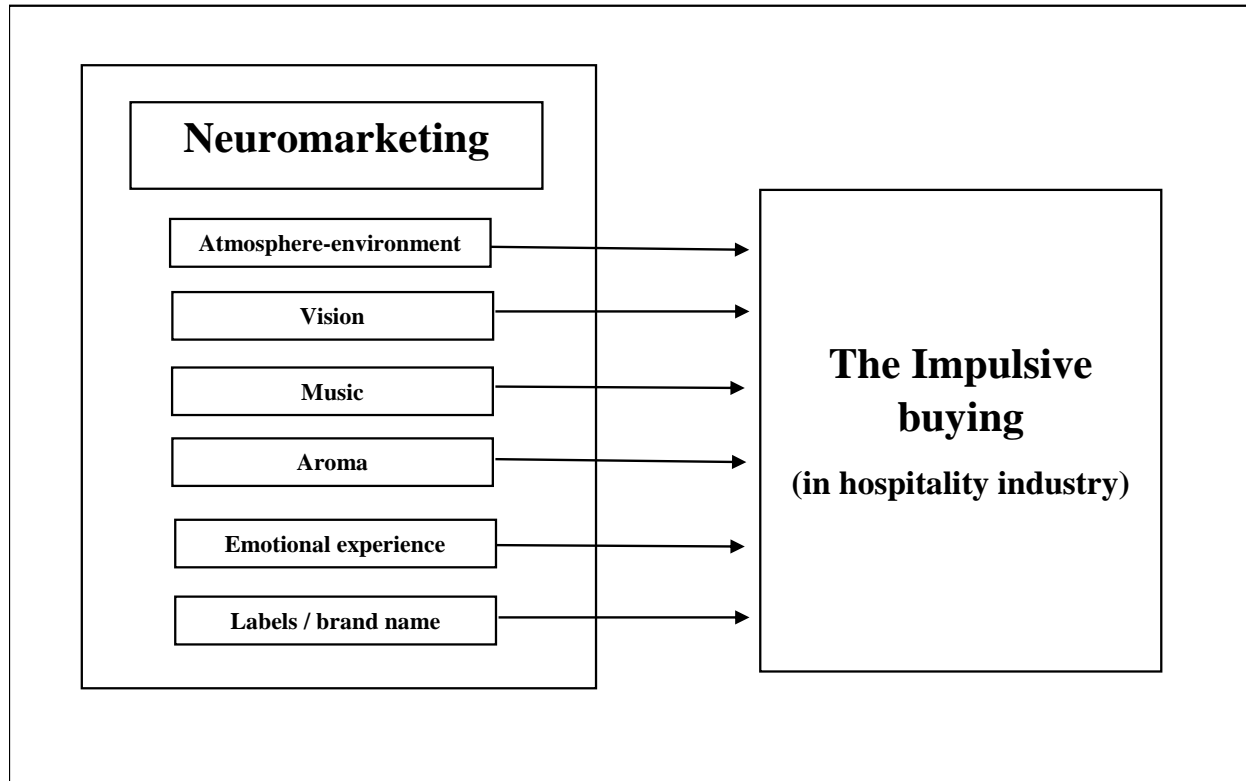


Figure 1: Research Conceptual Model

3. Methodology

3.1. Research design:

This research aims to, “examine the impulsive buying behavior in hospitality industry in Egypt through studying the effect of Neuromarketing using six dimensions (Atmosphere, vision, music, aroma, emotional experience and the labels’ brand name)”.

Thus, to understand more about the Neuromarketing effect that is still not matured enough in the literature of Marketing.

A structured questionnaire used to measure impulsive buying and demographics for ex-anti and ex-post purposes where the quantitative research is conducted by questionnaire that was filled by 409 participants.

3.2. Data Collected and sample:

An interval scales was used to measure impulsive buying among sampling units, normal scaling used to measure the demographic features of sampling units and ratio scaling used for analysing neurological market research scan and reports.

A structured questionnaire used to measure impulsive buying and demographics for ex-anti and ex-post purposes where the questionnaire questions was distributed online and answered by 409 participants. The quantitative data collected had been analysed using SPSS software (Statistical Package for Social Sciences).

4. Results:

This part is illustrating the data analysis from the collected filled questionnaire, and the analysis was conducted using the SPSS (statistical Package Social Sciences) Software.

In this research, 409 participants filled the questionnaire, as illustrated in the below tables (1,2,3) there were 67% females, 33% males. The Age range is divided into five groups, 20's, 30's, 40's, 50's and 60+, in addition to that there is an illustration if those participants are smokers or non-smokers.

Table 1: Cronbach's Alpha

Independent Variables	Cronbach's Alpha	N of Items
Atmosphere	0.847	4
Vision-interior design-lighting	0.805	3
Music	0.417	5
Aroma	0.354	3
Emotional Experience	0.654	3
Labels and Brand Name	0.447	3
Dependent Variable	Cronbach's Alpha	N of Items

As per Cronbach alpha (table 1), the highest Cronbach Alpha is the impulsive buying where it scored 0.874 that is very good, following it the atmosphere with score 0.847 which is also very good then the vision-interior design-lighting with 0.805.

On the other hand, the lowest scores where Aroma recorded 0.354 which is very low, Music scored a low score 0.417, Labels-Brand names also had a low score 0.447, and for the emotional experience it had bit higher score 0.654 which can be considered accepted.

Table 2: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig. (P-Value)
		B	Std. Error	Beta		
1	(Constant)	9.517E-17	.044		.000	1.000
	Atmosphere (X1)	.013	.057	.013	.224	.823
	Vision (X2)	.012	.058	.012	.205	.838
	Music (X3)	-.049	.050	-.049	-.988	.324
	Aroma (X4)	.163	.050	.163	3.283	.001
	Emotional Experience (X5)	-.159	.054	-.159	-2.927	.004
	Labels-Brand name(X6)	.399	.048	.399	8.264	.000

a. Dependent Variable: Impulsive buying

Model equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6.$$

Where Y is the Impulsive buying, X₁: Atmosphere, X₂: Vision-interior design-lighting, X₃: Music, X₄: Aroma, X₅: Emotional Experience, X₆: Labels and brand name.

Impulsive buying = $b_0 + b_1$ (Atmosphere) + b_2 (Vision) + b_3 (Music) + b_4 (Aroma) + b_5 (Emotional Experience) + b_6 (Labels and brand name).

Impulsive buying = $9.517 \text{ E } ^{-17} + 0.013$ (Atmosphere) + 0.012 (Vision) - 0.049 (Music) + 0.163 (Aroma) – 0.159 (Emotional Experience) + 0.399 (Label and brand name).

That is indicating that when the atmosphere, vision, aroma and Label and brand name valuables are directly proportional with the impulsive buying; when any variable increases then the impulsive buying increases, on the other hand, the Music and emotional experience variables are inversely proportional with the impulsive buying; that is when any variable increases then the impulsive buying decreases.

Table 3: P-Value

Model	Sig. (P-Value)
Constant	1
Atmosphere (X1)	0.823
Vision (X2)	0.838
Music (X3)	0.324
Aroma (X4)	0.001
Emotional Experience (X5)	0.004
Labels-Brand name(X6)	0

a. Dependent Variable: Impulsive buying

The P-value for each coefficient (β) in the Model is tested against alpha ($\alpha=0.05$) for significance:

Equation model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6.$$

β_0 (constant):

Ho : $\beta_0=0$ H1 : $\beta_0 \neq 0$

P-value of β_0 is $1.000 > 0.05$, the decision is to accept H0 and reject H1.

This means β_0 value equals zero and that it is **not significant** to the model.

When all $x = 0$ then $\beta_0 = 9.517E-17$, then $Y = \beta_0$

β_1 (X1-coefficient): Atmosphere

Ho : $\beta_1=0$ H1 : $\beta_1 \neq 0$

P-value of β_1 is $0.823 > 0.05$, the decision is to accept H0 and reject H1.

This means β_1 value is equal to zero and that it is **not significant** to the Model.

β_2 (X2-coefficient): Vision-interior design-lighting

Ho : $\beta_2=0$ H1 : $\beta_2 \neq 0$

P-value of β_2 is $0.838 > 0.05$, the decision is to accept H0 and reject H1.

This means β_2 value is equal to zero and that it is **not significant** to the Model.

β_3 (X3-coefficient): Music

Ho : $\beta_3=0$ H1 : $\beta_3 \neq 0$

P-value of β_3 is $0.324 > 0.05$, the decision is to accept H0 and reject H1.

This means β_3 value is equal to zero and that it is **not significant** to the Model.

β_4 (X4 -coefficient): Aroma

Ho : $\beta_4=0$ H1 : $\beta_4 \neq 0$

P-value of β_4 is $0.001 < 0.05$, the decision is to reject H0 and accept H1.

This means β_4 value does not equal zero and that it is **significant** to the Model.

β_5 (X_5 -coefficient): Emotional Experience

$H_0 : \beta_5=0$ $H_1 : \beta_5 \neq 0$

P-value of β_5 is $0.004 < 0.05$, the decision is to reject H_0 and accept H_1 .

This means β_5 value does not equal zero and that it is significant to the Model.

 β_6 (X_6 -coefficient): Labels and brand name

$H_0 : \beta_6=0$ $H_1 : \beta_6 \neq 0$

P-value of β_6 is $0.000 < 0.05$, the decision is to reject H_0 and accept H_1 .

This means β_6 value does not equal zero and that it is significant to the Model.

Table 4: Model Summary - Adjusted R^2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.475 ^a	.225	.214	.88667249	1.956

a. Predictors: (Constant), Brand, Atmosphere, Music, Aroma, Emotional Experience, Vision

b. Dependent Variable: Impulsive buying

The above table 4 is showing that the model adjusted R^2 is 0.214, that means that the dependent variables as atmosphere, vision-interior design-lighting, music, Aroma, Emotional experience, labels-brand name are affecting the impulsive buying by 21.4%, accordingly the remaining 78.6% variations are due to other external factors that is not in this research model.

5. Conclusion and discussion:

From the quantitative data analysis, and using the table of coefficients, the regression equation is illustrated as below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6.$$

$$Y = 9.517 E^{-17} + 0.013 X_1 + 0.012 X_2 - 0.049 X_3 + 0.163 X_4 - 0.159 X_5 + 0.399 X_6.$$

$$\text{Impulsive buying} = 9.517 E^{-17} + 0.013 (\text{Atmosphere}) + 0.012 (\text{Vision}) - 0.049 (\text{Music}) + 0.163 (\text{Aroma}) - 0.159 (\text{Emotional Experience}) + 0.399 (\text{Label and brand name}).$$

The atmosphere, vision, aroma and Label and brand name valuables are directly proportional with the impulsive buying; when any variable increases then the impulsive buying increases, on the other hand, the

Music and emotional experience variables are inversely proportional with the impulsive buying; that is when any variable increases then the impulsive buying decreases.

The test of hypotheses indicated that Atmosphere, vision-interior design-lighting and Music are insignificant to the model.

On the other hand, it indicated that Aroma, Emotional Experience and Labels-brand name are significant to the model.

The adjusted R^2 of the model is 0.214, that means that the dependent variables as atmosphere, vision-interior design-lighting, music, Aroma, Emotional experience, labels-brand name are affecting the impulsive buying by 21.4%, accordingly the remaining 78.6% variations are due to other external factors that is not in this research model.

5.1. Atmosphere

As per (Kotler, 1973), atmosphere is the deliberate design of a location to produce specific effects that are perceived by our five senses, providing information about the environment's quality, and increasing a consumer's likelihood of making a purchase. Although the literature stated that the atmosphere has a direct impact on the human brain, and the consumer behavior towards purchasing, but the atmosphere in this model was insignificant.

5.2. Vision, lighting and interior design

According to (Cant, 2013a) Consumers are directed toward the items they are looking for through visual marketing displays, which also influences their purchasing decisions.

There are four factors affecting the vision as per (Mehta & Pawan, 2013) like the window display, modeling display, product display and the marketing displays. All those factors have been proved that they can directly affect the consumer impulsive buying behavior. (Sahni & Arvind, 2014) approved that all visual marketing factors are highly connected and this connection boosts the impulsive buying for young consumers. However, the vision, lighting and interior design variable is insignificant in this model.

5.3. Music

As described by (Woodwood & Bilous, 2013) the audio neuromarketing studying branch is studying the influence of sound on the customer behavior. Adjusted measured music has been proven to have a direct impact on the customers impulsive buying purchases by 35% to 40% more than it was planned.

Nowadays music is all over most of the places (Bosak, 2013). All businesses, including shops and restaurants carefully chose their played music. The proper music generates the needed emotions and wished consumer behavior. On the other hand, the music is insignificant in this model.

5.4. Aroma

According to (Bosak, 2013) it was declared that there are many marketing studies the fragrance and its impact on the customer behavior. These kind of neuromarketing proved to have a high influence on the customers emotions and decisions. Brands with fragrance are significantly highly recognized and more unforgettable. The place with a good fragrance is highly recalled, in addition to that, customers can form impressions of particular items through fragrance. The research proved that the fragrance in retails can boost the sales by 15%. That is matching with the research findings, where the Aroma variable is significant to the model and is directly proportional with the impulsive buying.

5.5. Emotional Experience

It was raised before by (Giraldi, et al., 2022) that one of the main goals that marketing managers in all industries need to achieve, either if they are working on the creation of products or providing services, is trying to maximize the customer satisfaction using improved enhanced Customer Experience. In addition to (Carbone & Haeckel, 1994) stated that any service or product is used or purchased by any customer, that action of using or producing generates emotional experience, that could be either positive or negative experience. That is matching with the research model results, as the emotional experience variable is significant to the model, showing a negative relation where the statistics analysis showed that the emotional experience is inversely proportional with the impulsive buying.

5.6. Labels and brand name

As stated in the literature by (Sonadakh, 2011) that for providing more purchasing opportunities for consumers, private label brands are introduced. The product has a significant advantage when presented under the business's unique brand because it will almost definitely not be found elsewhere retail. This is completely matching with the research results where the labels and brand name is significant and showed a directly proportional relation with the impulsive buying.

6. Practical Implication:

Building on the research conducted, it is obvious that the Neuromarketing is extremely important as it is affecting the consumer behavior in the hospitality industry.

This could be implemented by applying the neuromarketing factors that affects the customer behavior in order to increase the sales in the hospitality industry, considering the aroma, emotional experience, labels and brand names, can really help improving the business.

Understanding the customer needs and how the aroma, emotional experience, labels and brand name can affect the brain neurologically and accordingly affecting the impulsive buying behavior.

7. Research limitations:

The research findings was based of the data collected from 409 participants that filled the research questionnaire, however as the neuromarketing is related to the neurology and the human brain, the neuromarketing items usually measured by the neurological measurement tools, some limitations might be due to the data was collected by questionnaire and not reading the brain by machines (which are relatively expensive), however it is an advantage to measure by questionnaire as sometimes the machines cannot be detected.

Concerning the neuromarketing machine/tools, not all machines are available in Egypt, and if available then measuring is very expensive.

There might be some limitations because of the complexity of the topic, the neuromarketing is still immature topic and there are hundreds of factors can affect this independent variable, keeping in mind that some variables can be affecting other variables, and that some variables might be subset of other variables.

One of the limitations was that this topic is extremely complicated as it pushes the researchers to mix between the neurology and marketing, this is a great challenge to gather and mix all these together.

8. Future recommendations:

The research opened new topics to be subjected for future research as there are some insignificant variables, noted some contradictions in the literature like the music tempo effect on the consumers.

There are some variables that can be subjected to new future researches like the atmosphere and the factors affecting it, the music temp, style and volume.

In this research, the model is trying to measure some of the neuromarketing items (atmosphere, vision-lighting and interior design, music, aroma, labels and brand name, and the emotional experience) that might be affecting impulsive buying behavior in the hospitality industry. these are only tiny part of small subsets or a wider application area, hundreds of factors should be explored.

Obviously, this topic is immature and need lots of future research.

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