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Footwear consumer behavior: The influence of stimuli on emotions and decision making

David Juárez-Varón [a,*], Ana Mengual-Recuerda [a], Alexandru Capatina [b], Marian Núñez Cansado [c]

[a] Universitat Politècnica de València, Valencia, Spain
[b] Dunarea de Jos University of Galati, Romania
[c] Universidad de Valladolid, Segovia Campus, Segovia, Spain

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ABSTRACT

This paper analyzes the stimuli used in fashion footwear stores to activate emotions and drive consumer purchasing decisions. The efficiency of the stimuli launched in a fashion shoe store was empirically analyzed. The decorative and environmental aspects that generate the highest level of attraction, interest, emotion, and memory in consumers were identified. The study focuses on the use of galvanic skin response and eye tracking to understand consumer preferences in shoe stores. The results reveal the most efficient stimuli. The results also show that the level of saturation of information generated by the concentration of stimuli in retail reduces attention. The described method can be applied to shopping situations without the need for questionnaires.

1. Introduction

This study is focused on the analysis of consumer behavior and how it is affected by the activation of the brain through brand-created stimuli in retail. Consumer behavior is important because it refers to the actions of a person or organization from the origination of a need to the moment they purchase and subsequently use a product or service (Kotler, 2006). The study of such behavior also includes analysis of all factors that influence these actions. Seeking, buying, using, and disposing of goods or services to satisfy needs and desires are steps that entail both mental and emotional processes, as well as physical actions (Grunert, 2016). Consumer behavior within a society can affect social norms (Gelfand et al., 2017). Studies have examined the attraction of items available while waiting (Mobach, 2007), the effects of the position of products on store shelves (Sigurdsson et al., 2009), and age-based behavior (Moschis, 2012). Three factors are critical: behavior as a result of experience, significant events that occurred during life, and circumstances experienced in a group.

Four main aspects influence the decision-making process (Kotler, 2006). First, cultural aspects as a whole affect the decision-making process. They include knowledge, beliefs, art, rituals, moral norms, customs, and any other capacity or habit acquired by humans as members of a society and through which values are acquired (Madni, 2013). Second, social factors also play a role. They are characterized by reference groups, which influence a person's attitudes or behavior. If the influence is direct, groups to which they belong are considered, along with the aspirational groups they want to join. The family is the most important consumer purchasing organization in society (Khooshabeh & Lucas, 2018). Third, the personal situation is important because people's stage of life influences the products and services they choose for their needs (Bollich et al., 2016). Other factors are occupation and economic circumstances, lifestyle (expressed through activities, interests, and opinions), and personality and self-concept. Finally, psychological factors play a role. These factors are based on motivation (an internal factor that drives behavior, gives it orientation, and directs it), perception (a process by which individuals select, organize, and interpret the information they receive to create a picture of the world), learning (a relatively permanent change in behavior or memory that results from practice or experience), attitudes (favorable or unfavorable evaluations of people, their emotional states, and the way they tend to act toward an object), and beliefs, which are descriptive ideas that a person has about something (Han, 2022).

Experiences in real or virtual spaces, based on stimuli designed by brands, activate emotions that create memory markers, extending

* Corresponding author.
E-mail addresses: djuarez@upv.es (D. Juárez-Varón), anmenre1@upv.es (A. Mengual-Recuerda), alexandru.capatana@ugal.ro (A. Capatina), mariaangeles.nunez@uva.es (M. Núñez Cansado).

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consumers' memories of experiences (Ahn et al., 2009). Previous studies of consumer experiences have focused on observing virtual environments (Li et al., 2003), the visualization of products in 3D (Daugherty et al., 2008), emotional activation in virtual points of sale or e-commerce (Reina Paz & Jimenez Delgado, 2020), touching products in the store (Balconi et al., 2020), the influence of color (Stillman et al., 2020), live music (Calder et al., 2016), the price of the product in different environments (Zong & Guo, 2022), and content marketing and its link to brand loyalty (Lou & Xie, 2021).

The originality of this research lies in the study of the key stimuli in the consumer experience in a standard store because consumers do not expect stimulating experiences in these environments. Such experiences are usually only found in restaurants or malls (not only in traditional places where entertainment is offered such as cinemas or theme parks).

The main objective of this research is to analyze the mixed construct of consumer experience in response to the presentation of stimuli in a fashion footwear store. The aim is to use neuromarketing biometrics to identify the areas of the store that draw the most user attention. The specific objectives are as follows: first, to synchronize the galvanic response of the skin and the gaze fixation (pupil trajectory) to identify emotional traces (somatic markers) based on the levels of biomedical measurements for each phase and the overall experience; second, to measure the perception of value of the shopping experience (based on the measurement of emotional or arousal intensity); third, to identify the areas and elements that are of greatest interest to consumers and verify that they coincide with the elements that add value to the product (perception of quality of materials, design, artisanal processes, and brand values) and are manifested based on the increase in emotional arousal and the degree of interest created by the stimuli; and fourth, to analyze whether the perception of value of the sensory experience can be improved by reducing the number of stimuli, based on the results of the biomedical measurements.

This study answers the question of which stimuli in the decoration of a standard store of a quality fashion footwear brand (products made with leather), with a high average price (100–180 euros), are most efficient in capturing the attention of consumers' gaze, the communication of brand values, and emotional activation in the experience of visiting the store. This process involves activation of the desire to purchase in consumer behavior. The experiments were carried out in a store belonging to the Pikolinos footwear brand. Within Spain, it is one of the best-positioned Spanish brands. It also has an international market. The store is located in Alicante (Spain) and has an average size of 35 square meters.

2. Literature review

2.1. Neuromarketing

Neuromarketing originated from the combination of neuroscience and marketing, with technological advances that enable analysis of the brain reactions that trigger the stimuli of marketing and communication in consumers (Bhardwaj et al., 2023; Reimann, 2011). The purpose of marketing is to facilitate the meeting between products and people (Ariely & Berns, 2010). Satisfaction currently only partially guarantees that consumers do not file complaints. In order to build customer loyalty in the long term, customers, in addition to being satisfied, must be delighted with the brand (Lindstrom, 2008).

Sensory marketing (Krishna, 2012) allows brand communication to be oriented toward the five senses, with the aim of influencing consumer perception and purchasing behavior in relation to a product or service (Manzano, 2011), eliminating the previous deficiencies of highly rational marketing (Daucé & Rieunier, 2002). Going beyond the traditional means of sight and sound marketing, brands can establish a stronger and more lasting emotional connection with consumers (Medina, 2008). The techniques and tools used depend on the product (Schmitt, 2006). Techniques include eye movement analysis, brain focus techniques, and traditional verbal methods (surveys, focus group, and in-depth interviews).

The prediction of consumer behavior can help retailers understand future collective behavior (Juárez-Varón et al., 2020; Palacios-Marques et al., 2021) based on methods such as traditional marketing research, machine learning, big data, neuromarketing, or, in the absence of other data sources or situations where small improvements in predictive performance are important, digital search queries, which provide useful guidance for the near future (Gobe, 2010). Neuromarketing research describes how specific neurophysiological methods offer predictive power beyond traditional survey methods. However, few studies have explored how these methods can be used simultaneously to measure outcomes in marketing contexts (Baldo et al., 2022) and thus provide valuable insights for professionals seeking to incorporate the findings of these neurophysiological methods into their marketing decisions. It is important to conceptualize customer participation in the purchasing process through analytical levels. The social emotions intertwined in this process must be considered (Bouchard et al., 2022), along with the influence of social and environmental concerns on consumers' perceived value of the product, purchase intention, and willingness to pay a higher price (Dangelico et al., 2022).

However, there is a value–behavior gap due to contextual factors such as price, the simplicity or complexity of product design (Eytam et al., 2021), and social norms, as well as individual factors such as personal and hedonic values, environmental beliefs, and an individual's workload capacity. Due to this conflict of interests, consumers find it difficult to identify the true drivers of their behavior because they are unaware or unwilling to acknowledge the processes at work. Therefore, consumer neuroscience methods could provide a valuable tool for uncovering implicit measures of behavior (Leeuwis et al., 2022). Neuroscience techniques make it possible to identify behavioral patterns and analyze the importance of the elements in physical and digital spaces (Mičík & Kunešová, 2021). There is a need to adopt contemporary technologies to improve the competitive advantage of companies through their marketing (Mugoni et al., 2023; Nedjah et al., 2022).

2.2. Research in the footwear sector

This study presents a specific application of marketing in the footwear sector. Historically, footwear has been considered a staple product. Hence, its production has always been closely linked to what different human groups around the world have required. It is part of the cultural economy (DeFillippi et al., 2007), and its industrial production has developed in a wide range of countries around the world (Estrada-Cruz et al., 2020; Sciascia et al., 2006). As a cultural and creative industry, it can boost entrepreneurship, innovation, sustainability, and regional development (Guerola-Navarro et al., 2022). Currently, it not only subsists in the most developed areas but has also gained particular importance in the so-called emerging economies (Lowder, 1999). Throughout the 20th century, especially from the 1950 s onward, the footwear industry has developed strongly in Western Europe (Binda & Merlo, 2020; Schamp, 2016). This development reached Eastern Europe years later, as well as the economically important Asian countries (China, Hong Kong, Korea, Indonesia, and Taiwan) and Brazil (Campos et al., 2016; dos Reis & Machado, 2020). These countries are labor intensive and are increasingly gaining a strong position on the international stage, thanks to the relocation of production plants (particularly those of sports and mass consumption footwear), the transfer of knowledge and technology, and the support of local governments (Cardeal et al., 2014).

Numerous factors have led to the transformation of the competitive situation over the last 20 years (Orero-Blat et al., 2021). Several are worth mentioning. First, there have been changes in people's shopping and consumer needs and habits, combined with the growing relevance of the fashion and novelty factor (Roberts & Armitage, 2017; Santos, 2016). These trends have had implications in terms of innovation (Lučić

et al., 2019), design, product life cycle (Dixon & Shankar, 2018), and personalization (Chandra et al., 2022). Second, linked to the previous factor regarding the changes in consumer behavior, the strength of distribution has increased in terms of both the large distribution and specialized channels that offer value (Tupikovskaja-Omovie & Tyler, 2020) through this specialization and brands. Broader distribution in the market generally translates into less negotiating capacity for manufacturers.

In a context of high stability in the purchase of fashion and the renewal of footwear by consumers, the attraction of high-value products, associated with a progressive transformation of lifestyle (Achabou, 2020) and clothing, has intensified. Although women's footwear continues to capture the greatest share of business, with 48.1% of the total, men's footwear has had the biggest rise, with a rise of 9%, representing 39.7% of the total (Lynch & Barnes, 2020).

The most dynamic Spanish entrepreneurs in the sector consider that achieving the sector's objectives depends on taking advantage (Mora & de Lucas, 2017), in the coming years, of the value of the brand (brand strategies) and the potential of distribution (Miranda, 2020), while maintaining quality and seeking differentiation by design (fashion and specialization). Doing so requires investment in creation and promotion (Chiambaretto & Gurău, 2017). This path has already been taken by some entrepreneurs in the sector (Spanish brands such as Pikolinos, Panama Jack, Camper, and Kelme). However, it has not yet been sufficiently extended (Ashworth, 2012). The industrialist mentality must be reoriented toward the market (Lim, 2020) to seek collaboration between other companies and between industry and distribution channels (Gonzalez et al., 2018). The understanding is that, in the future, the world as a whole is the site of production. The key is no longer location, but rather distribution and, where appropriate, the brand (Kang, 2019). Nevertheless, for many producers, the brand is still a secondary issue, even for those who do not manufacture under a private label for large distributors or are not manufacturers of large print runs (Mortimer et al., 2018). In some way, promoting the brand ensures a market in the future so that footwear does not fall under the umbrella of commodity products.

Specialized shoe stores, where the primary product is footwear, are the traditional shoe retail channels in Spain. Traditional shoe stores are observing changes in consumer habits (Arregui & Garraza, 2019) and are facing competition from large retail and textile and accessory chains. Regarding sales systems in specialized shoe stores, the traditional shoe retail showcase is the predominant pattern (visit, leave, choose, and revisit), with samples in the sales room (one pair per model, various sizes of the same model, etc.) and the ability to search for the right size in the warehouse. However, the store model is being transformed, and different variants are appearing, usually among companies with numerous stores and a strong customer orientation (Jimenez-Marin & Zambrano, 2019). The importance of this channel, apart from the volume of sales it generates, lies primarily in personalized attention, advice, and efforts to close a beneficial sale for both parties. Therefore, it is important to use marketing techniques to improve customer loyalty (Vicente-Fernandez et al., 2019), in the case of both independent businesses and those belonging to a particular brand with greater resources. The presence of footwear is increasing in stores that sell clothing, footwear, and accessories.

Traditional commerce faces a major competitive challenge (Confente et al., 2015) due to the appearance of large retail chains, competition from large distributors, and, in another sense, the presence of shopping malls. The excess supply in the market due to footwear of all types and origins also slows down decision making (Toma & Vecchi, 2017). This type of non-traditional research enables the prediction of consumer behavior. The research questions are focused on identifying which store stimuli can capture the attention of consumers, increase their emotions, facilitate the decision to purchase, and create a long-term memory.

3. Method

The research technique used in this study is neuromarketing. Its purpose is to measure the cognitive processing of stimuli in a fashion footwear store shopping experience. Neuromarketing combines neuroscience, psychology, and economics (Madan, 2010) to analyze the effectiveness of brand stimuli (Baron et al., 2017) and the psychology of consumer behavior (Plassmann et al., 2012). It can improve on conventional research methods (Meyerding & Mehlhose, 2020), which are limited by participants' perceptions or behavior (Ariely & Berns, 2010).

The Spanish footwear sector has a heterogeneous structure. There is a large number of small and medium-sized enterprises (SMEs) and family businesses, along with larger companies that act as spearheads and catalysts for innovation (Marques et al., 2017) and digital transformation in the sector (Saura et al., 2021; Solunion, 2019). It remains the second biggest sector within the fashion industry in terms of number of employees. Distribution is crucial within the sector. In Spain, specialized chains generate 65% of revenue. E-commerce is growing steadily, already representing 4.7% of the sector.

Eye tracking and galvanic skin response (GSR) were the two specific neuromarketing techniques used in this study. Eye tracking was used to record the visual attention of participants based on their eye movements (Duchowski, 2017). It was used to identify the participants' areas of interest (AOIs). GSR captures electrodermal activity, reflecting changes in the state of emotional arousal that influence the cognitive perception of stimuli (Critchley et al., 2002). When participants focused on a stimulus, it was recorded by the eye tracking system. Cognitive and affective processing (partially recorded by GSR) was initiated, resulting in an influence on consumer preferences (Bornstein & D'Agostino, 1992; Ramele et al., 2012; Saeid Sanei, 2013).

The aim of this research was to use neuromarketing techniques to determine the cognitive perceptions of a certain profile of consumers. These consumers were aged between 30 and 55 years, had a medium–high socioeconomic level, liked to shop in stores, and valued the concepts of design, quality, and fashion in footwear. The level of attraction toward the brand and willingness to purchase were linked to the influence of the stimuli projected in the store. All other aspects (local distribution, employees, and products) remained constant. Neuromarketing techniques enabled analysis of the attention the participants paid to the stimuli and the emotional intensity they experienced (galvanic skin response).

At the end of the biometric study, an in-depth semi-structured interview was carried out in a separate storeroom. The questions asked in the interview were related to the areas participants had visited, store decoration, and the overall experience. There was a first phase of open-ended and natural recall questions (about the experience) and a second phase of suggested recall questions.

3.1. Sample

The study sample consisted of men and women, in accordance with the profile of the target consumer indicated by the brand. A total of 30 people participated. Of these people, 33% were men and 66% were women. These percentages were set by the brand, according to real market demand. These consumers participated randomly and voluntarily after meeting the study requirements: 30 to 55 years old, medium–high socioeconomic level, and customers of the brand (having bought a product at least once). The fieldwork was carried out between March 2018 and May 2018. The location of the study was the Pikolinos store in Alicante city (Spain). Participants were from various origins. The study was structured in one phase. The sample size (10 men and 20 women) was suitable for a neuromarketing study (Cuesta-Cambra et al., 2017).

Participants were informed about the technologies used and the purpose of the study, namely to record their interaction with the elements of the store in a real purchase process. They were not told which

elements (furniture, decoration, products, etc.) were being manipulated so as not to condition their attention.

3.2. Data collection and analysis

The research phase where participants were exposed to stimuli in the footwear store was carried out using the Pupil Labs Pupil Core eye tracking model with a sampling frequency of 200 Hz. Pupil Capture software v.1.23 was used for data collection. For data analysis, Gazepoint Analysis UX Edition v.5.3.0 software was used. The Shimmer3 GSR + model was used to record electrodermal activity, using ConsensysPRO software v.1.6 for data collection.

The statistical analysis of the data was performed with R software v.3.6.3. Common elements (stimuli) were defined for all consumers (voluntary participants). Participants were exposed to a total of nine exhibition areas, structured into 32 stimuli (see Fig. 1 and Tables 1 and 2). Participants received instructions about the customer journey map, ordering the stimuli presentation to prioritize the areas of interest (AOIs) that captured the most attention (Añaños-Carrasco, 2015).

The independent variables were age and gender of the participants with a similar sociocultural profile, determined by the main profile of the footwear store's customers. The dependent variables were the focus of attention and the peaks of emotional excitement in response to the observed stimuli.

Special stimuli designed by the brand for the store to enhance the values of the brand were Stimulus 13 (leather hangings, dyed in different colors, representing product quality), Stimulus 18 (vertical garden, representing nature), Stimulus 17 (photos of the artisanal manufacturing process), and Stimulus 33 (ancient handmade shoes, representing tradition).

During the study, the customer journey map was explained and followed in the same way by all consumers. Records of eye tracking (visual attention) and electrodermal activity (states of emotional excitement) were collected to identify the areas and stimuli with the greatest impact on consumers.

There are two stages of human visual perception in locating, detecting, and recognizing objects in the visual field. The first stage is the pre-attention mode (based on the order of fixation in the established AOIs). In this stage the simple characteristics of the objects are processed quickly and in parallel to the entire visual field. The second stage is the attention mode (based on fixation time patterns and revisits in established AOIs). It refers to the processing of a focus of attention at particular locations in the visual field, where the object of interest is located. The analysis of complex shapes and the recognition of objects are related to this second stage. Both behaviors were analyzed in this study.

Both the areas and stimuli presented in the study remained constant

Table 1
Areas 1–5: Stimuli description and AOI codes. Source: Authors.

Area	*Stimulus*	*Description*	*Category*	*AOI*
Area 1 storefront	Stimulus 1	Showcase	Product/ Decoration	A0I 00
	Stimulus 2	Store entrance	Product/ Decoration	AOI 01
	Stimulus 3	Brand display	Brand	AOI 02
Area 2 showcase	Stimulus 4	Showcase decorative element 01	Product/ Decoration	AOI 03
	Stimulus 5	Showcase decorative element 02	Product/ Decoration	AOI 04
	Stimulus 6	Showcase decorative element 03	Product	AOI 05
	Stimulus 7	Showcase decorative element 04	Decoration	AOI 06
Area 3 Inside the store	Stimulus 8	Central area (first table)	Product	AOI 07
	Stimulus 9	Large video screen	Decoration	AOI 08
	Stimulus 10	Right shelves 01	Product	AOI 09
	Stimulus 11	Right shelves 02	Product	AOI 10
	Stimulus 12	Cashier area	Product	AOI 11
Area 4 Right area 01	Stimulus 13	Colored leather hangings	Brand/ Decoration	AOI 12
	Stimulus 14	Right shelves 01 (bottom)	Product	AOI 13
	Stimulus 15	Right shelves 01 (top)	Product	AOI 14
Area 5 Left area 01	Stimulus 16	Small video screen	Decoration	AOI 15
	Stimulus 17	Shop furniture	Product/ Decoration	AOI 16
	Stimulus 18	Vertical garden	Brand/ Decoration	AOI 17

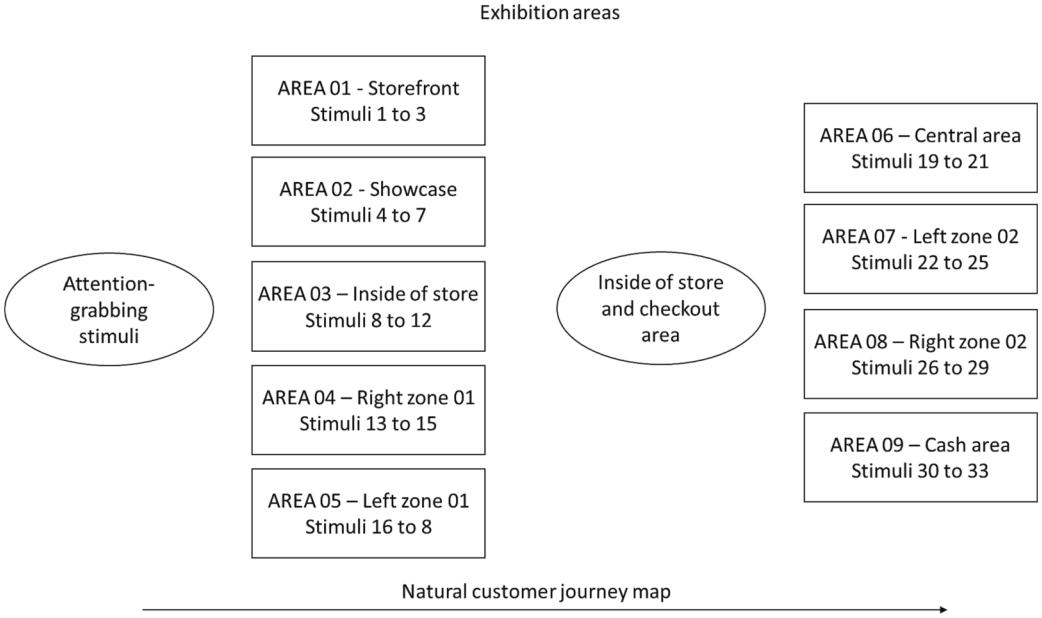

Fig. 1. Exhibition areas. Source: Authors.

Table 2
Areas 6–8: Stimuli description and AOI codes. Source: Authors.

Area	*Stimulus*	*Description*	*Category*	*AOI*
Area 6 Central area	Stimulus 19	Central area (second table bottom)	Product	AOI 18
	Stimulus 20	Central area (second table top)	Product	AOI 19
	Stimulus 21	Central area (side)	Product	AOI 20
Area 7 Left area 02	Stimulus 22	Left shelves 01 (bottom)	Product	AOI 21
	Stimulus 23	Left shelves 01 (top)	Product/ Decoration	AOI 24
	Stimulus 24	Left shelves 01 (right side)	Product	AOI 25
	Stimulus 25	Left shelves 01 (left side)	Product	AOI 26
Area 8 Right area 02	Stimulus 26	Chair	Decoration	AOI 27
	Stimulus 27	Images of craft processes	Decoration	AOI 28
	Stimulus 28	Right shelves 02 (bottom)	Product	AOI 29
	Stimulus 29	Right shelves 02 (top)	Product	AOI 30
Area 9 Cash area	Stimulus 30	Left shelves 02	Product	AOI 31
	Stimulus 31	Cashier area (footwear accessories)	Product	AOI 32
	Stimulus 32	Cashier area (staff attention)	Employee	AOI 34
	Stimulus 33	Cashier area (decoration)	Decoration	AOI 35

during the experiment. The protocol for the semi-structured in-depth interview was designed to provide evidence of the shopping experience. The interviews were carried out by the authors. All interviews were conducted face to face. All interviews were videotaped, transcribed, and analyzed.

4. Results

4.1. Comprehensive analysis of attention

The heat maps showing the attention that participants paid to different stimuli in each area appear in Figs. 2 to 11. They qualitatively reflect the intensity of attention paid to the stimuli and information about the product, as well as, to a lesser extent, stimuli associated with the brand or decoration.

Fig. 2a, 2b, and 2c show information on fixation time between the three areas of interest (AOIs), separated by gender. Statistically, when comparing fixation times in each of the AOIs, no differences were found in visual behavior between women and men. Therefore, the results are interpreted using the overall data set containing both genders, without separating between patterns for women and men.

Fig. 2d reflects the order of fixation between different stimuli. There are no significant differences in the order of fixation between different AOIs, which would indicate that participants interpreted the AOIs of the footwear store entrance in the same way. The reason may be that no initial visual stimulus stood out in any of the three areas. Therefore, the visual journey could begin with any of the stimuli.

Fig. 2e reflects the attention paid to each of the AOIs in milliseconds. First, the two most important areas are AOI 0 and AOI 1. There are no statistical differences in the time of fixation between the two areas. Therefore, the relevance of both areas of the entrance is similar. Linking these observations to the heat map suggests that what the participants of the study are most attracted to is the upper right-hand side of the store window display and the large video screen at the back of the store. This finding is important because it could be an area to display the brand. The current position is the area where the participants of the study showed least interest (AOI 2). Two main areas (AOI 0 and AOI 1) can be used to carry out different marketing activities to increase brand positioning or encourage entry to the store.

Fig. 2f is the number of times participants looked at an area of interest again. In this case, it was inferred that these repetitions were directed toward the large video screen and the showcase. This inference matches the time of fixation. That is, the more attention customers paid, the more revisits they made to that area. Although no significant differences were observed based on the standard deviations of the data, this trend seems to be the common pattern of behavior, as observed in other areas. In fact, both graphs are very similar. Stimulus 3 was the brand display. It was the sole stimulus that showed only the brand only (AOI 02). It was barely seen, receiving no attention.

Fig. 3a, 3b, 3c, and 3d show no gender-based differences in the pattern of attention paid to AOIs 3, 4, 5, and 6. Therefore, the data are interpreted collectively. Fig. 3e, 3f, and 3 g are related. Fig. 3e shows a hierarchical order in terms of the pre-attention pattern of participants. This hierarchy is reinforced by time of attention (Fig. 3f) and the number of times that an AOI was viewed (Fig. 3g). AOI 4 was the first area to be viewed and would therefore seem to be the most attractive. It is followed by AOI 3 and AOI 4. AOI 5 and AOI 6 have no significant differences. Both stimuli were interpreted the same way by participants.

The results shown in Fig. 6e are related to those shown in the previous figure. AOI 4 was paid the most attention (Fig. 3f). It was also the AOI that took the least time for participants to look at (Fig. 3e) and the one that was most revisited (Fig. 3g). Based on the same reasoning for the other areas, AOI 4 (the most visually important) is followed in importance by AOI3. AOI 5 and AOI 6 were the least important and had equal values. They were interpreted in the same way in the attention stage. Therefore, the participants of the study paid the greatest attention to the areas that they revisited the most over time. These patterns are of interest when carrying out stimulus-based marketing actions.

No differences were observed in the pattern of attention between women and men (Fig. 4a, 4b, 4c, 4d, and 4e), so the data were analyzed together. Considering the statistical analysis of the order of viewing different AOIs (Fig. 4f), there were no statistical differences between AOIs 7, 8, 9, and 11 in the time it took to view those areas. Thus, the order of importance at the pre-attention level was the same among the four areas, indicating that the order of fixation might be random.

At the conscious level (Fig. 4g), once the sweep had been performed, the study participants tended to focus their attention on AOI 7 and AOI 9 (heat map: shoes and pants on the large video screen in AOI7, and shoes and women's bags on the back table in AOI 9). These AOIs were of equal importance because there were no significant differences between the two. In importance, they are followed by AOI 8, AOI 10, and AOI 11. The latter two were the least important, with no statistical differences between them.

Regarding how many times participants looked at the AOIs again (Fig. 4h), no significant differences were found in any areas. The reason for this finding is that, because it is a global store location, there are many stimuli, and the number of times a certain AOI is viewed is less likely as the visual field is increased. In any case, when the visual field is reduced, there is a direct relation between revisiting an area with the time of attention and the order of attention. Stimulus 9 consisting of decoration on the large video screen (AOI 8) was one of the last to be seen and received the least attention.

In this case, no differences were observed in the pattern of attention between women and men (Fig. 5a, 5b, and 5c), so the data were analyzed together. Fig. 5d shows the order of viewing the AOIs. The participants took the least time to see AOI 14 and AOI 13 (in that order), which were equally important in the pre-treatment stage. The reason is that no significant differences were found between the time taken to look at AOI 13 and AOI 14. Therefore, in the pre-attention stage, the order of viewing may be reversed. These AOIs are followed by AOI 12, which took the longest to detect.

Fig. 5e suggests that AOI 13 and AOI 14 (heat map: upper shelf

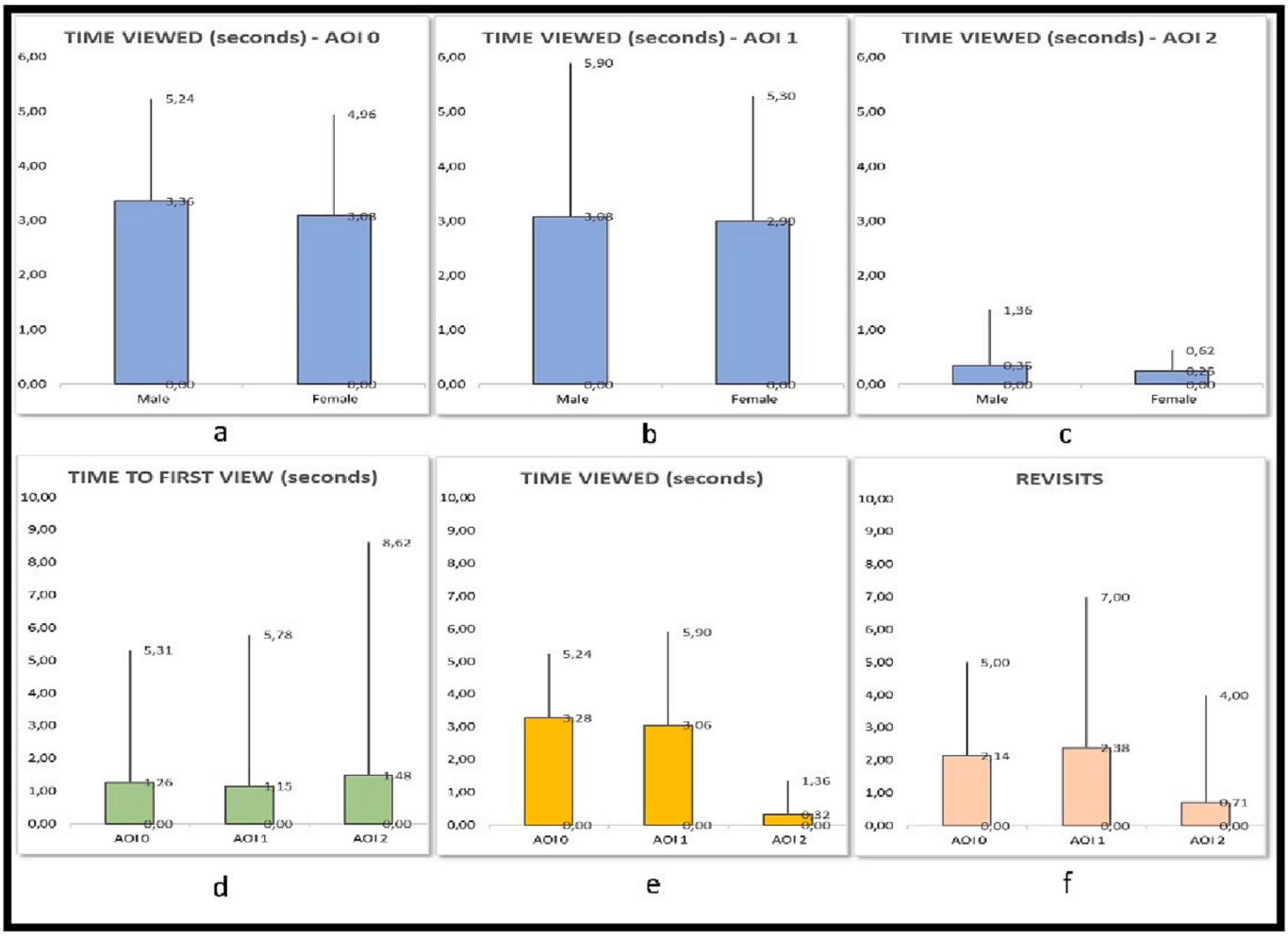

Fig. 2. Area 1: Storefront attention analysis. Source: Authors.

women's boots and shoes and lower shelf women's shoes and boots) attracted the most attention. Although there was a difference, it is not significant and would not be so if the study sample were enlarged. In this case, the two areas that took the least time to be viewed were the areas that received the most attention. In contrast, AOI 12 took the longest to detect (Fig. 5d) and received the least attention. Again, Fig. 5f is related to the previous two figures. The areas that were viewed first and were given the most attention, AOI 13 and AOI 14, were also the most revisited. As expected, AOI 12 was also the least observed.

In conclusion, the right-hand linear entry indicates that the hierarchy of AOIs was AOI 13 and AOI 14 at a similar level and then AOI 12. This area also attracted the attention of the product in general. Stimulus 13 was brand/decoration consisting of colored leather hangings (AOI 12). It was one of the last to be viewed and received little attention (practically ignored).

Analyzing differences in attention times between men and women reveals significant differences only for AOI 16. Therefore, this particular area was analyzed separately for each gender to investigate the differing patterns of vision. Despite significant differences in time of attention for AOI 16, no significant differences between genders were observed in the pre-attention stage. Hence, gender did not influence the time of detection of AOI 16. However, viewing time was influenced, perhaps because the product line was focused on women, not men. Therefore, men may pay less attention to female products.

Fig. 6d indicates that the area first detected by the participants (both men and women, given that no statistical differences were found) was AOI 16. Next, AOI 15 and AOI 17 were of equal importance in the pre-attention stage. Fig. 6e corroborates the level of importance of AOI 16 with respect to the other two areas. AOI 16 (heat map: women's shoes, boots, and handbags, but especially the central part of the AOI) was paid the most attention and had the most revisits (Fig. 6f). AOI 15 and AOI 17 went more unnoticed, although the table in AOI 15 had some value (but not significant with respect to AOI 17). The attention times for men and women reveal significant differences between genders only for AOI 16. Therefore, this particular area was analyzed separately for each gender to investigate the differing viewing patterns. Stimulus 16 consisting of decoration on a small video screen (AOI 15) and Stimulus 18 consisting of brand/decoration in the form of a vertical garden (AOI 17) were slow to be seen and received little attention.

Statistical analysis shows that AOI 18 was the first to be detected (Fig. 7d). There were significant differences with respect to AOI 19, which was the second to be detected. There was a significant difference in the detection time between the three areas because all of them had statistical differences in the viewing pattern. Therefore, the pre-attention order is probably always the same (AOI 18, 19, 20). The time for which a certain AOI was viewed (Fig. 7e) was related to the order of detection. AOI 18 took the least time for participants to detect (Fig. 7d). It also received the most attention. This AOI is followed by AOI 19 and AOI 20, where the same reasoning applies.

Finally, the number of revisits to AOI 19 and AOI 19 was not significant (Fig. 7f). This finding can be explained by the same reasoning as in the previous case. Within the visual field, there was a large number of visual stimuli, which significantly reduced the probability of repeating the same AOI. Even so, there is a clear pattern that the area that took

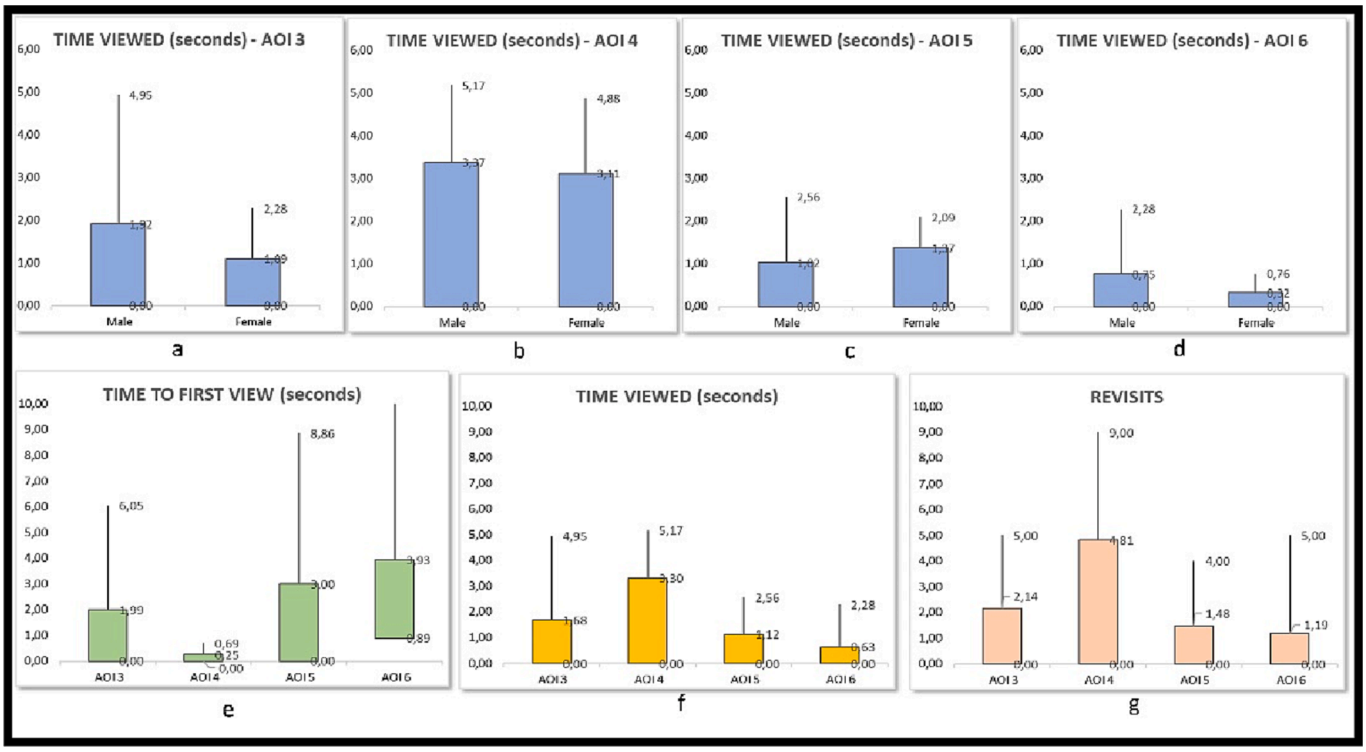

Fig. 3. Area 2: Showcase attention analysis. Source: Authors.

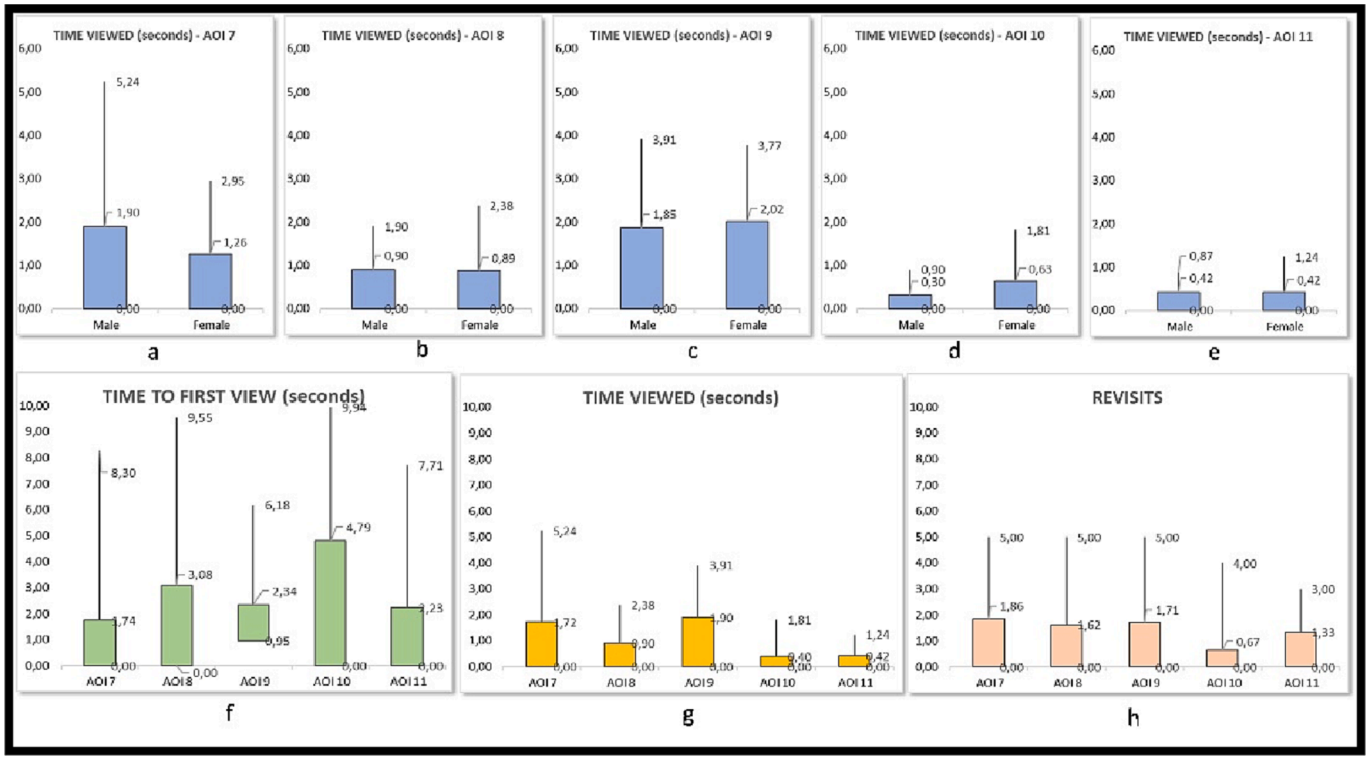

Fig. 4. Area 3. Store interior attention analysis. Source: Prepared by the authors.

longest to detect and was paid least attention was the one that was least likely to be revisited. However, although the other two areas, AOI 18 and AOI 19, were not statistically different, they had a higher rate of revisits. This finding is partly in line with the previous two results.

In this case, no differences were observed in the pattern of attention between women and men (Fig. 8a, 8b, 8c, and 8d), so the data were analyzed together. Fig. 8e suggests that there is a hierarchy in the order of detection of the AOIs. First, AOI 21 and AOI 24 had no statistical differences in terms of detection time. Therefore, they had the same probability of being detected first. These AOIs are followed by AOI 25 in

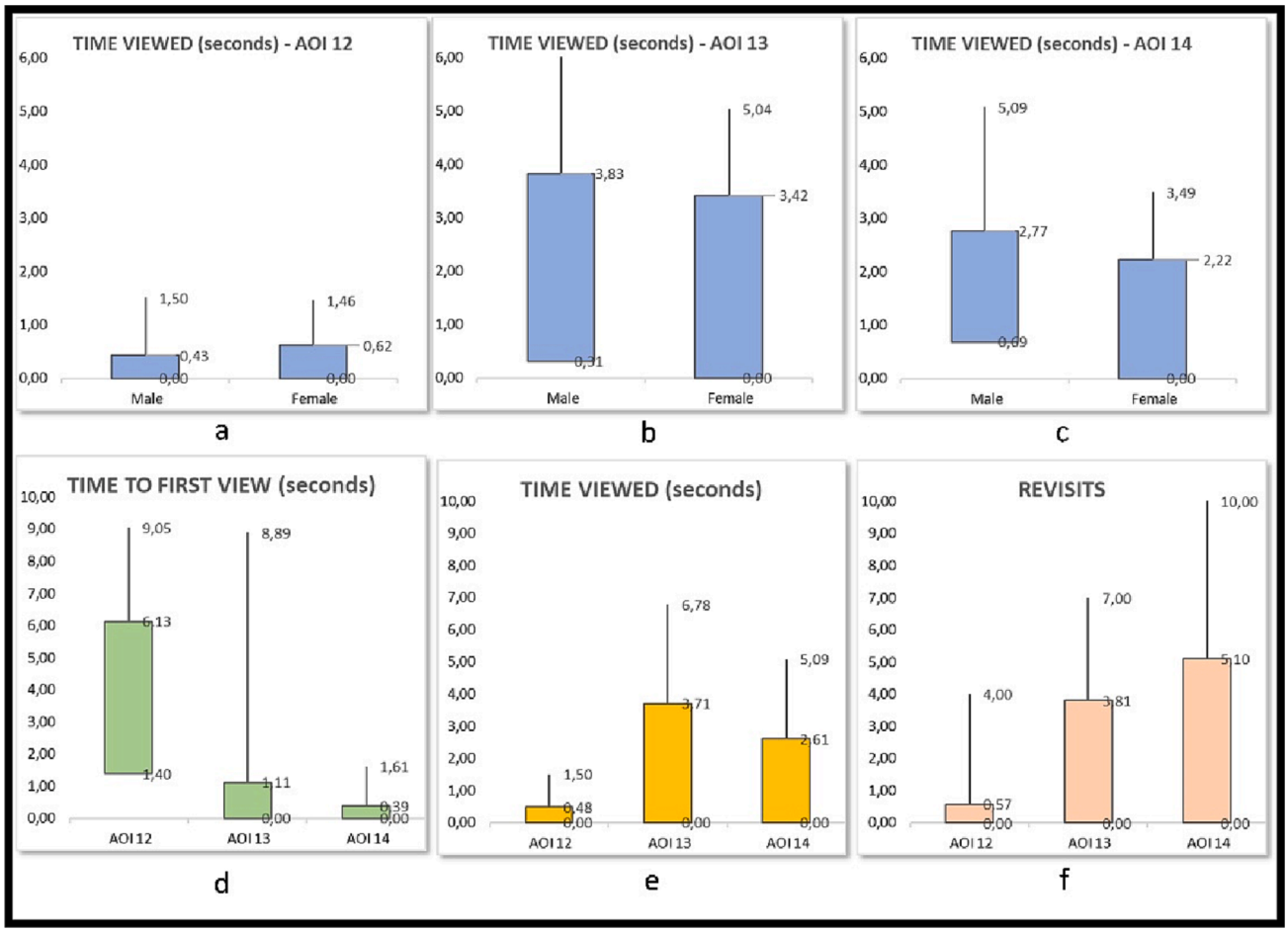

Fig. 5. Area 4: Right area 01 attention analysis. Source: Authors.

second place and AOI 26 in third place, with significant differences between them.

In terms of time of attention, a similar distribution is followed (Fig. 8f). AOI 21 and AOI 24 (heat map: pieces of fabric, shoes, and men's rucksacks in AOI 21 and classic shoes, descriptive posters of the product, and shoes in general in AOI 24) were looked at for the most time, without significant differences between them. These two were followed by AOI 25 and AOI 26, which had no significant differences between them. The number of revisits (Fig. 8g) largely coincided with the time spent looking at each of the AOIs. AOI 21 and AOI 24 were the most visited, with no statistical differences. These AOIs are followed by AOI 25 and AOI 26, also without statistical differences between them.

In conclusion, in the left central part of the men's line, there are two main AOIs. They are of equal importance in the pre-attention and attention stage. In these areas, new market stimuli or even the most expensive products could be included. The areas with the shoes with the most modern style may not be very noticeable (AOI 25). Rotations through the different areas of interest are recommended in case it is necessary to release that type of product. Stimulus 23 consisting of product/decoration on the top left shelves 01 (AOI 24) was seen and received attention thanks to having products on show.

In this case, no gender-based differences were observed in the viewing pattern of women and men (Fig. 9a, 9b, 9c and 9d), so the data were analyzed together. AOI 29 was the first to be detected by the participants because there were significant differences with the second area, AOI 30. These AOIs are followed in third place by AOI 28 and AOI 27, with an equal degree of importance given that no statistical differences were found between them (Fig. 9e). The behavior in the attention stage follows the expected behavior (Fig. 9g). AOI 29 (heat map: low-heeled shoes, bags, and other boots), which was detected first by users, also received the most attention. It is followed by the AOI 30 in the attention stage (heat map: mainly bracelets, pieces of leather, and other decorations and boots), which is also related to the same level in the detection phase. AOI 28 and AOI 27, which had no significant differences between them, were processed in a similar way in the attention stage by the participants.

In conclusion, in the central part of the female line, the most relevant AOI was AOI 29. The next AOI was AOI 30, with less statistical significance. Finally, AOI 28 and AOI 27 practically went unnoticed. Stimulus 26, consisting of decoration on a chair (AOI 27), and 27, consisting of decoration in the form of images of craft processes (AOI 28) took the longest time to be seen in their area and received little attention.

In this case, no differences were observed in the viewing pattern of women and men (Fig. 10a, 10b, 10c, and 10d), so the data were analyzed together. At the pre-attentional level, the two most important areas were AOI 31 and AOI 34. No statistical differences were found between the two, so the order of detection may also be reversed. These two areas are followed by AOI 32 and AOI 35 in this part of the store (Fig. 10e). The results in Fig. 10f show that the area of greatest interest in terms of attention time was AOI 31, with significant statistical differences with respect to AOI 34.

In the case of revisits (Fig. 10g), the participants looked more often at the cashier (AOI 34) and the left part of AOI 31, where the bags and accessories were displayed. Between these two areas, no significant differences were found. AOI 32 and AOI 35 were looked at the least. This finding is related to the previous two results, indicating that both areas are practically imperceptible.

To conclude, at the pre-attention level, AOI 31 and AOI 34 behave in

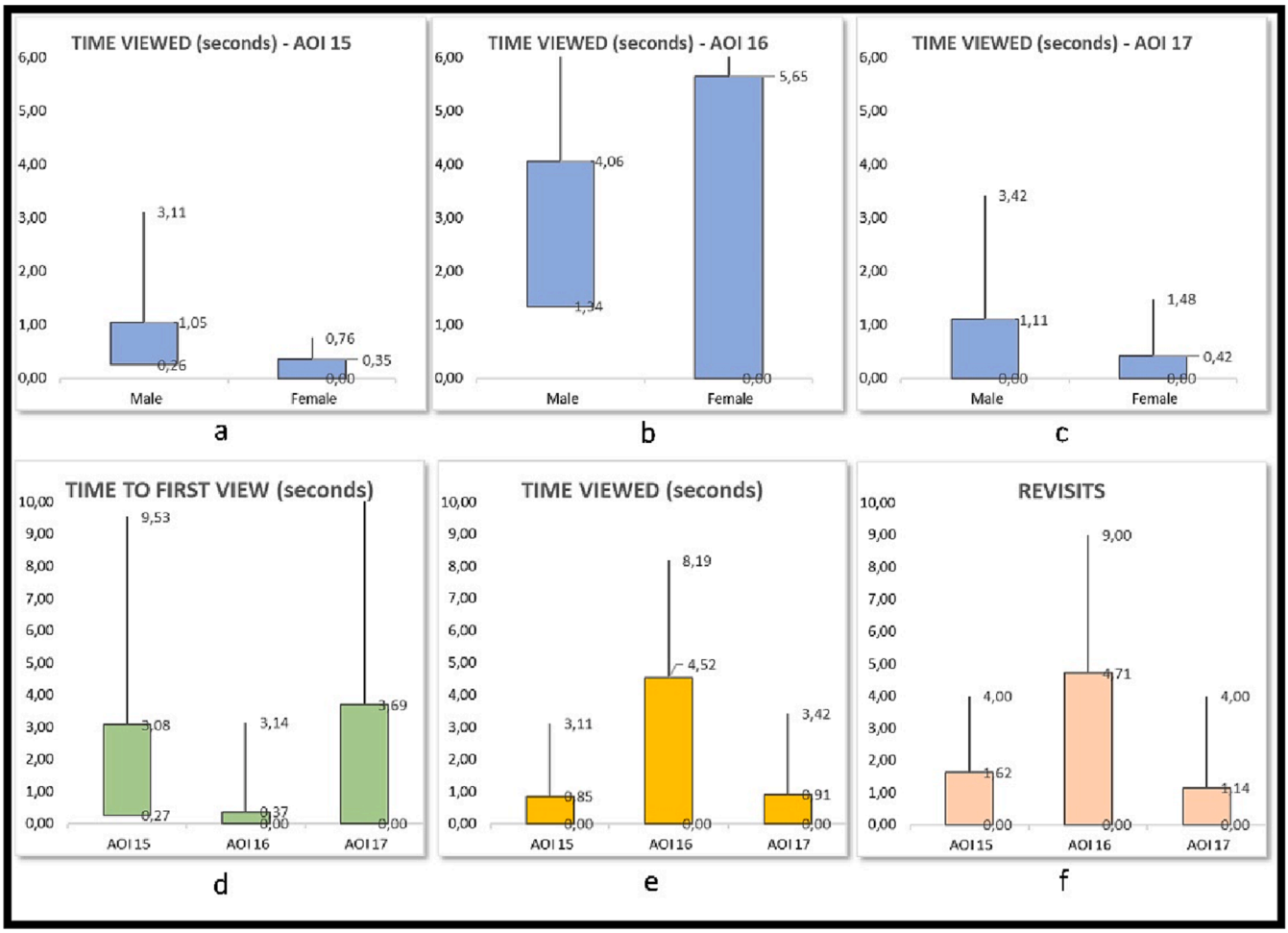

Fig. 6. Area 5: Left area 01 attention analysis. Source: Authors.

the same way, making them good candidates to be used as eye-catching areas for offers or relevant information. The reason is that they are also very similar in terms of attention time, although AOI 31 seems to have received the most attention. With regard to the degree of revisits, this finding supports the importance of AOI 31 and AOI 34 at the attention level. In contrast, AOI 32 and AOI 35 were the least seen and therefore the least important in the checkout area of the store. Stimulus 33 consisting of decoration (AOI 35) was completely ignored.

4.2. Analysis of the emotional intensity of each area

Fig. 11 shows consumers' emotional level and time spent viewing each area.

The areas that generated the greatest emotional intensity were the store entrance (Area 3: inside the store), the women's footwear area (Area 5: left area 01), the central accessories area (Area 6: central area), the men's footwear area (Area 7: left area 02), and the second women's footwear area (Area 8: right area 02). The cashier area (Area 9) created the highest level of emotional intensity, caused by attention paid to the clerk and the payment process.

Regarding the stimuli designed by the brand in the areas of greatest emotional intensity, Area 3 contained the large screen (AOI 8), Area 5 contained the small screen (AOI 15) and vertical garden (AOI 17), Area 6 contained an alternative product to footwear (AOI 19), Area 7 contained a product and a poster (AOI 24), and Area 9 was where the cashier was located (AOI 34). The ratio of emotional intensity to length of stay in the area was higher in Areas 3, 5, and 6. Area 6 (the accessory area) had the highest ratio.

4.3. Qualitative research: In-depth interviews

The questions asked in the interview were related to the areas visited, store decoration, and overall experience. There was a first phase of open-ended and natural recall questions (about the experience) and a second phase of suggested recall questions. Participants generally had a preference for the areas on the left and the men's and women's areas. The main reason was the product itself. However, decoration was another relevant aspect. Product, decoration, and attention were the three main most highly valued aspects. At a visual level, aspects such as leather hangings, product layout, lighting, and decoration in general were noteworthy. At an auditory level, most participants did not remember what the ambient music was. Those who did said that it was calm instrumental music. At the olfactory level, most remembered the smell of leather and, to a lesser extent, the smell of wood. The experience was generally rated by everyone as very good and enriching. Sitting space, mirrors, and product layout are possible areas for improvement. However, overall, the participants would not change anything. Many would repeat the experience.

5. Discussion

A satisfying shopping experience is critical to make it an effective marketing medium. The shopping experience is based on eight dimensions: escapism, browsing, socialization, activity, shopping for fashion products, uniqueness, service, and aesthetics (Hu & Jasper, 2018). The cultural heritage provided by the footwear sector is appreciated worldwide as an asset that gives society its identity, promoting a

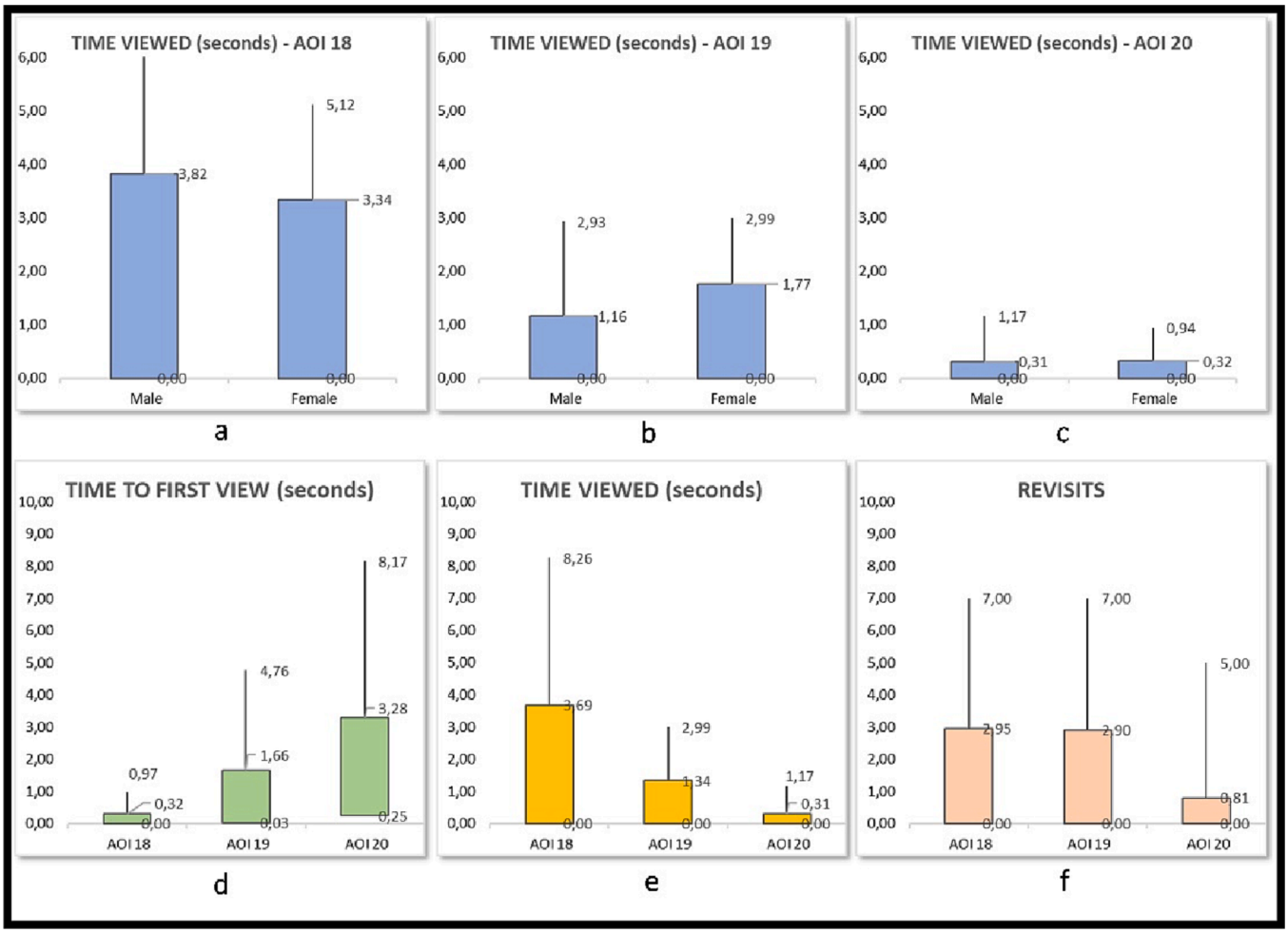

Fig. 7. Area 6: Central area attention analysis. Source: Authors.

rich cultural and creative present and future (DCMS: UK Government Department for Culture, 2015; Young, 2015). In this area, neuromarketing is useful because it offers an efficient way of providing knowledge, objectivity, and precise data, as well as high-quality results (Ohme et al., 2011).

The first part of this study was to analyze the intersection between consumer behavior, experiential marketing, and fashion footwear. The aim was to develop recommendations for the design of experience strategies to meet the needs of fashion footwear consumers. Tracking consumers' eye movements gives some insight into what they find interesting. It can reveal what attracts their attention and can perhaps even provide a clue as to how they perceive whatever scene they are viewing (Duchowski, 2017). In this study, the data from the application of eye tracking show that the common feature of the most attractive AOIs was the presence of the product, stealing attention away from other decorative elements, which passed unnoticed. Furthermore, in both genders, behavior was similar.

The application of biometrics (neuromarketing analysis) in this study shows that, according to eye tracking records, there are significant differences between different AOIs of various store areas. The AOIs of greatest interest were those at an intermediate level in relation to the user's sight. There was an inverse relationship between the time of the first fixation and the duration of the fixation in most cases: the shorter the time of the first fixation, the longer the time that customers paid attention to a given stimulus. There were no significant differences in the visual behavior of men and women in the different areas of the store, except in women's footwear. Changes in the needs and buying habits of consumers, combined with the increasing relevance of fashion and novelty and the product life cycle, lead to better sales of footwear, along with other clothing products (Cruz-Cardenas et al., 2018). The transformation in the field of distribution requires the adoption of differentiated action strategies (Lopez-Hurtado et al., 2018).

In this study, 33 brand stimuli were identified in the store, 23 of which were product-based (70%). Of those 23 product-based stimuli, six were shared with decoration, three showed the brand (two sharing with decoration), and six were exclusively part of the decoration. There was an excess of stimuli (the store was small), and the stimuli linked to the brand values hardly received any attention. The study of the level of emotional intensity of the nine areas reveals that the level of emotional intensity increased in common spaces, those that targeted men's and women's collections, and the cashier area because no decorative stimulus conveyed the values of the brand. Controlling the number of stimuli in a physical space such as a shoe store can improve the level of perceptual attention and lead to greater activation and emotional intensity. The ratio of emotional intensity to length of stay in the area was higher in Areas 3, 5, and 6. Area 6 (the accessory area) had the highest ratio. Women had a higher number of excitement peaks with a clear statistical difference from men. The results support the use of GSR measurement as a predictive tool for decision making and women's preferences. The stimuli related to special spaces for rest and leisure, the moments when consumers touch the product, or the attention from employees are key moments in the levels of emotion and memory. They also accelerate purchase decisions, as indicated by the biometric and qualitative study.

Consumers are delighted when they have an experience that meets their expectations (Martínez-Ruiz et al., 2017). Sensory stimulation

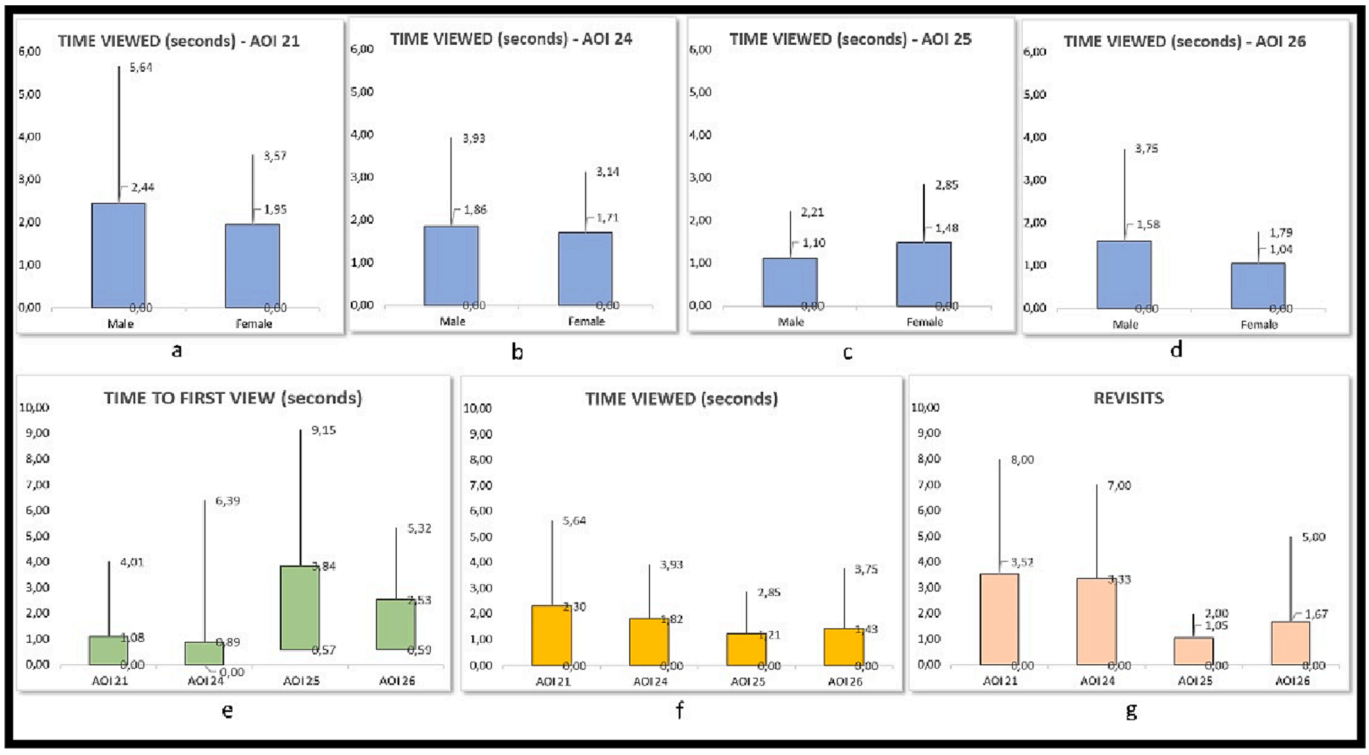

Fig. 8. Area 7: Left area 02 attention analysis. Source: Authors.

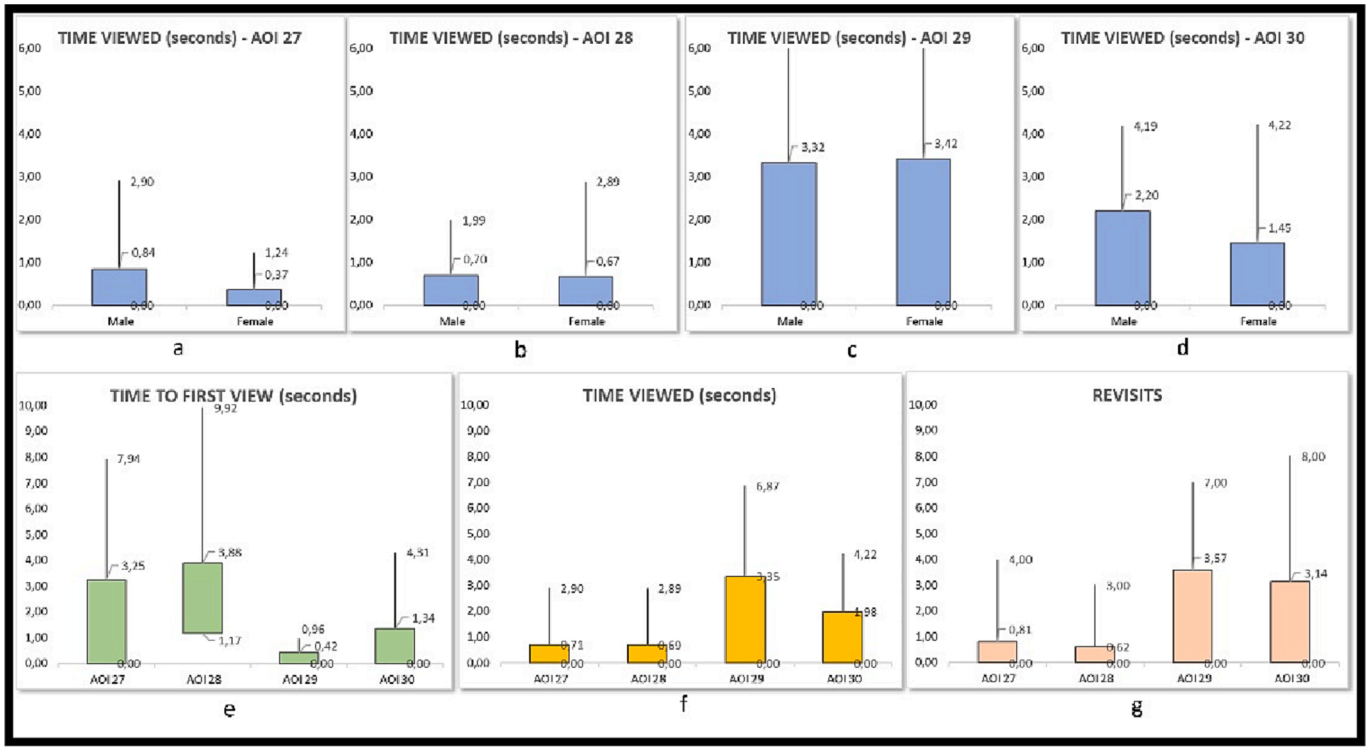

Fig. 9. Area 8: Right area 02 attention analysis. Source: Authors.

positively influences the brand experience and its value, which enhances purchase intention (Moreira et al., 2017) and evokes feelings associated with the brand (Elder et al., 2011). Changes in consumer habits make traditional marketing approaches less effective (Wohlfeil & Whelan, 2005). It is important to know how consumers experience brands (Lenderman, 2008) because of the wide range of experiences that are memorable and personalized. The application of traditional marketing research techniques (in-depth interview) showed that the experience in general was rated by everyone as good and enriching, with consumers reporting that their expectations were met.

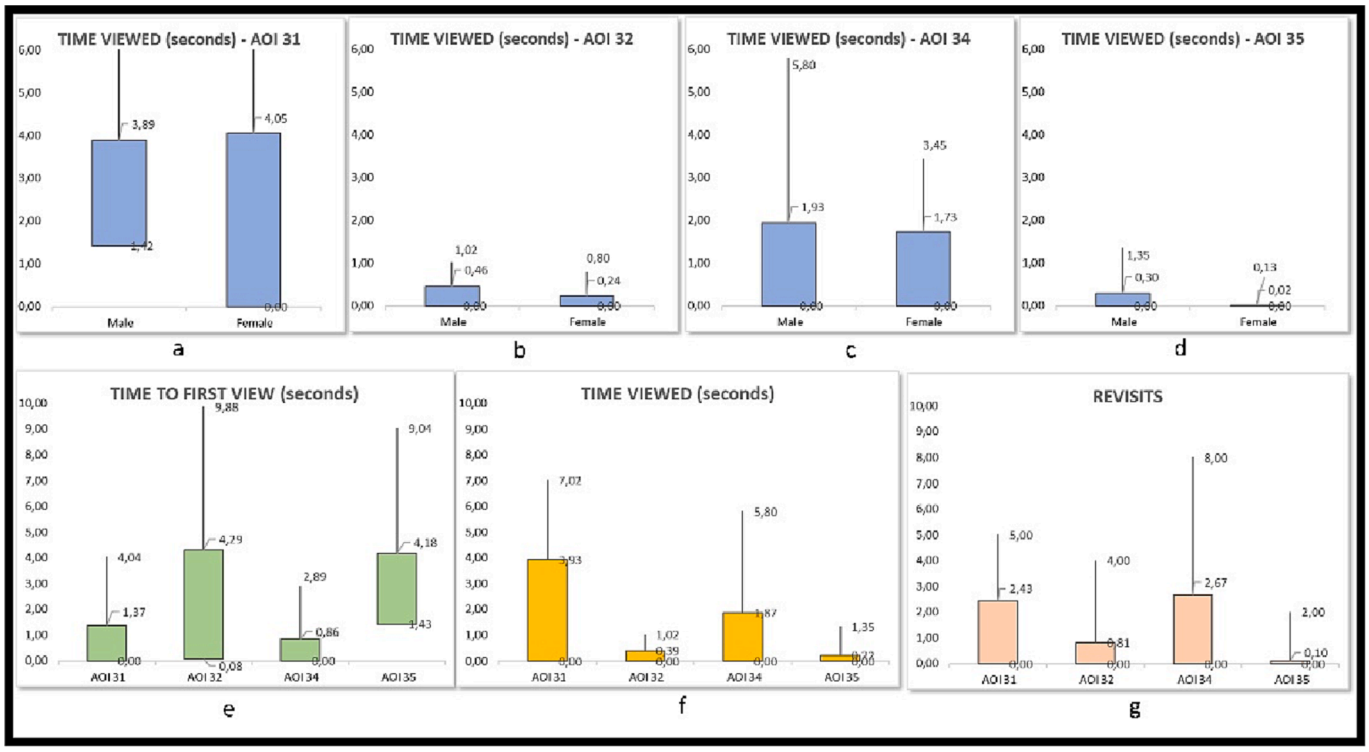

Fig. 10. Area 9: Cash area attention analysis. Source: Authors.

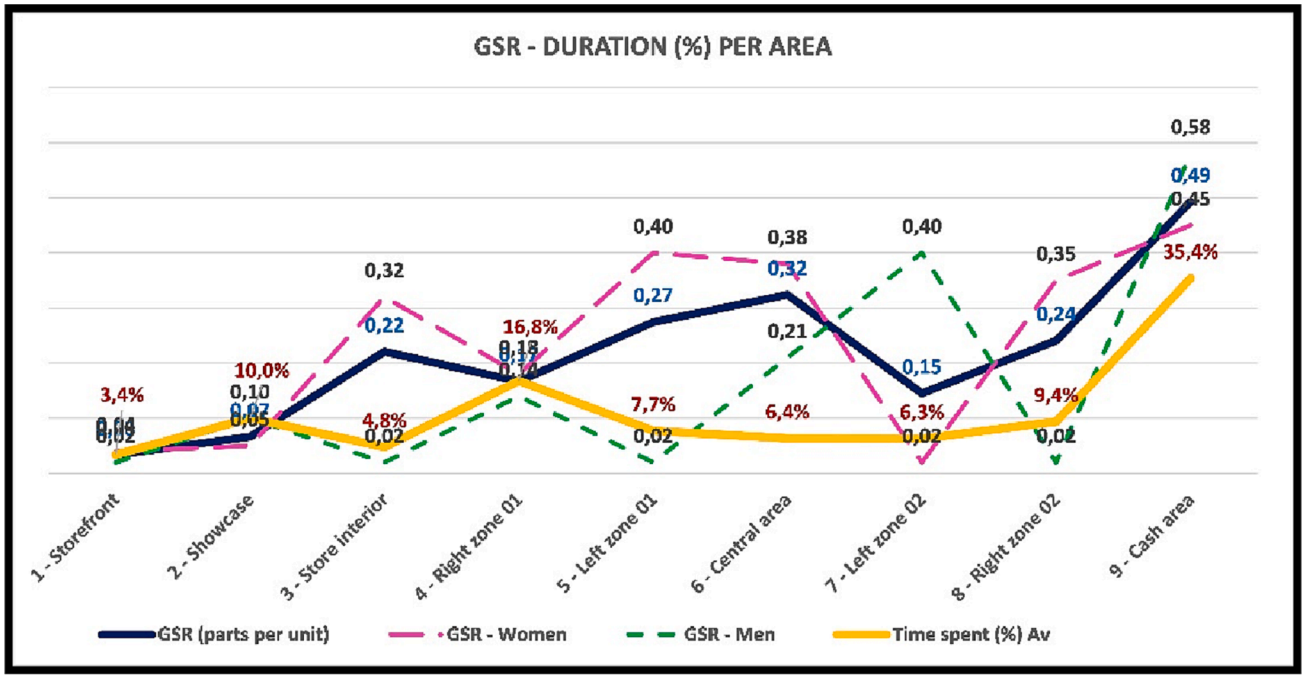

Fig. 11. GSR results by area for the group of consumers. Source: Authors.

The limitations of the study relate to the application to the footwear sector in a standard store considered a small business located in the center of a medium-sized city on a commercial street. The store belonged to a specific brand. It was not a multi-brand outlet. Also, the products on display were from the current collection. In future research, studies should examine shoe stores located in shopping malls and analyze the design of specific stimuli to enhance emotions.

6. Conclusions

The main objective of this study was to analyze the mixed construct of consumer experience in response to the presentation of stimuli in a fashion footwear store. The study aimed at identifying the areas of the store that draw the most attention from users through neuromarketing based on neuroscience equipment and knowledge. The methodology enabled overall analysis of the shopping experience (Blazquez, 2014),

using qualitative research techniques and neuromarketing. The analysis considered the different aspects of the experience based on key variables such as eye tracking and galvanic skin response (GSR).

At the storefront, the element that attracted most attention was the entrance, and the one that attracted the least attention was the brand, with no difference in behavior between genders. Regarding the showcase, the product was what first captured consumers' attention, with a higher percentage of visual attention than other decorative elements. In general, visual attention was slightly higher in men. Inside the store, the central area and the right-hand area were the first to be viewed and received the longest visual attention time, with minimal differences in behavior by gender. In both areas, the location of the product was most important, compared to other areas (AOI 8), where decoration was most important. The store elements of greatest interest were those at an intermediate level in relation to the user's sight. There was an inverse relationship between the time of the first fixation and the duration of the fixation in most cases.

Once the consumer moved toward other areas, product-based decoration captured visual attention and occupied more of consumers' time (AOI 16) than other specific areas of decoration. This situation occurred mainly in women, whereas there was a more pronounced behavior toward screens or brands in men. Finally, in the cashier area, the product located on the shelves and the store clerk were the fastest areas to attract attention, as well as having the greatest time spent, with similar behaviors by gender. Regarding the areas that generated the greatest emotional intensity, all included products or social interaction, such as the store entrance, the women's footwear area, the central accessories area, and the cashier area. The cashier area caused the highest level of emotional intensity due to the attention of the clerk and the payment process.

The qualitative interviews indicated that the product was what attracted consumers the most, although the decoration was also well valued, as was the attention of staff. Sensory activation (sight, hearing, and smell) was low, but the overall experience was considered satisfactory. Consequently, one of the main findings is that the location of the product captures more visual attention and dedication than stimuli based exclusively on decoration. Brand and audiovisual stimuli that project the use of the product barely captured visual attention and elicited emotion, highlighting areas for improvement.

As a consequence of globalization, footwear is increasingly an international fashion product. Therefore, consumer behavior in relation to international brands can be considered with similar patterns. Variables such as the profile of footwear consumers, their involvement with the product category, risk aversion and/or impulse buying, brand messages, exclusive products, and loyalty are predictors of this behavior (Lee & Suh, 2022; Pratas & Amorim, 2022).

The greatest contribution of this research is to show that stimuli related to special spaces of rest and leisure, moments in which consumers touch products, and the attention of employees are key moments at the emotional and memory levels. They can also accelerate purchase decisions, as suggested by this biometric and qualitative study. Similarly, the level of saturation of information generated by the concentration of stimuli in the retail channel (Douce & Janssens, 2013) causes a lower level of attention toward the product itself (i.e., footwear). This research contributes to the neuromarketing analysis of the cognitive and emotional options of consumers regarding which stimuli in the decoration of a standard high-quality fashion footwear brand store are most efficient in capturing the attention of consumers' gaze, the communication of brand values, and emotional activation in the experience of visiting a store (Kim & Hong, 2011). The results can be used to improve the efficiency of stimulus design in stores, through the use of communication that highlights the emotional components of the purchasing process. Thus, emotion regulation can be used to intensify the emotional experience resulting from exposure to stimuli (Gross & Thompson, 2007).

Finally, this study reveals that knowledge of the conscious and unconscious mental states of consumers enables the design of much more efficient commercial stimuli. Better understanding of the brain activity of consumers and the way that stimuli influence consumer behavior and decision making (Morin, 2011) can allow detection of saturation levels that reduce their efficiency (Coskun et al., 2020). Also, given that consumer habits change, organizations must design proposals for each contact they make with their consumers. They must use all the aspects that accompany the brand to generate a link through the stimulation of the senses and experiences with a high emotional level. It is important not to saturate consumers to achieve a more favorable perception of these creative products.

7. Funding statement

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8. Ethics statement

This study (involving human participants) was reviewed and approved by the Research Ethics Committee. All participants gave their written informed consent, in accordance with the national legislation and the institutional requirements. Subjects were informed of their voluntary participation and anonymous contribution, as well as the possibility of withdrawing from the study at any time without reason.

Written, informed consent was obtained from the individual and brands for the publication of any potentially identifiable images or data included in this article.

CRediT authorship contribution statement

David Juárez-Varón: Writing – review & editing, Writing – original draft, Validation, Supervision, Software, Methodology, Investigation, Formal analysis, Conceptualization. **Ana Mengual-Recuerda:** Writing – original draft, Methodology, Conceptualization. **Alexandru Capatina:** Writing – review & editing, Validation, Formal analysis. **Marian Núñez Cansad:** Writing – review & editing, Validation, Methodology, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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David Juárez-Varón Full Professor of the Engineering Manufacturing Processes Area at Universitat Politècnica de València. Graduated in Industrial Organization Engineer, PhD in Busines, Economy and Society (Neuromarketing) at University of Alicante, and PhD in Industrial Engineering and Production at Universitat Politècnica de València. He is Professor at Universitat Politècnica de València, and Head of the neuromarketing laboratory at Alcoy Campus, Universitat Politècnica de València, Alicante, Spain. His investigations are focused on Neuromarketing, Digital Marketing and Engineering.

Ana Mengual-Recuerda Full Professor of the Department of Business Organization at Universitat Politècnica de València. Graduated in Industrial Organization Engineer, PhD in Neuromarketing at University of Alicante. She is Professor at Universitat Politècnica de València. Her investigations are focused on Neuromarketing and Industrial Organization Engineering.

Alexandru Capatina Lecturer at Management Marketing Department, Faculty of Economic Sciences, "Dunrea de Jos" University of Galai, Romania. Economist, Graduate of Faculty of Economic Sciences, Marketing, Dunrea de Jos University of Galai, Romania. Master "SME's Management", Faculty of Economic Sciences, Dunrea de Jos University of Galai. PhD in Management at Dunrea de Jos University of Galai. His investigations are focused on CRM, Competitive Intelligence and Digital Marketing.

Marian Núñez Cansado Full Professor of the Department of Audiovisual Communication and Advertising at Universidad de Valladolid. Graduated in Psychology, Master in Clinical Neuropsychology and PhD in Information Sciences. She is Professor at Universidad de Valladolid. Her investigations are focused on Neuromarketing, Communication and Advertising.