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IMPACT OF INNOVATIVE PACKAGING ON THE ATTITUDES AND PURCHASE INTENTION OF VISUALLY IMPAIRED AND BLIND CONSUMERS: THE CASE OF ALGERIA

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Visually impaired or blind person faces many challenges in their daily activities, including purchasing medicines. To overcome this limitation; there is an innovative braille reading and writing system that has been introduced in the labelling of the packaging of pharmaceutical products. The aim of this research is to measure the impact of innovative Braille-labelled pharmaceutical packaging on the attitudes and purchase intention of visually impaired and blind consumers. We adopted quantitative and qualitative approaches. The quantitative research aims to obtain measurable data in relation to the attitudes and purchase intention of visually impaired and blind consumers, on a sample of 72 visually impaired and blind people. Whereas, the qualitative research allowed us to investigate the opinions leaders: doctors in chemist, in relation to the current situation of visually impaired and blind consumers, in the field semi-structured interviews with 6 pharmacy doctors, exploring the importance of Braille labelling of packaging for pharmaceuticals product. The results allowed us to validate the hypotheses; Packaging for pharmaceutical products labelled in the Braille system has a positive effect on the attitudes of visually impaired and blind consumers. Packaging for pharmaceutical products labelled in Braille has a positive effect on the purchase intention of visually impaired and blind consumers. Attitudes have a positive effect on the purchase intention of visually impaired and blind consumers. The results allowed us to highlight the views of doctors in chemists regarding the importance of introducing Braille labelling into the design of pharmaceutical packaging.

1 INTRODUCTION

Packaging is considered a fundamental and indispensable part of the business process of companies (Ririn, Rahmat and Rina 2019). Its design plays a crucial role in the consumer's choices, attracting his/her attention on the one hand, transmitting all the information relating to the product contained and allowing him/her, on the other hand, to infer different beliefs (Ji, McNeal and Ji 2003). In a competitive atmosphere, the tactile dimension is especially solicited by packaging designers and sensory signature developers, in order to differentiate the brand (Daucé and Rieunier 2002), as a result, consumer goods manufacturers are increasingly seeking to involve the material properties of a product in the consumer experience, such as shape, texture, labelling and packaging size (Serhal and Pantin-Sohier 2017).

In various sectors of activity, different inclusive innovation strategies are being implemented to meet the needs of consumers (Zavala 2019), including visually impaired consumers who represent, according to the World Health Organisation estimates, 253 million, of whom 36 million are blind and 217 million have moderate to severe visual impairment (World Vision Report 2020). In Algeria, there are more than 173,000 visually impaired and blind

people (The drama of the blind: All the news. 2021). To achieve this, marketers implement a sensory advertising strategy which allows visually impaired and blind people to interact autonomously with the different products at a point of sale (Zavala 2019). Braille on product packaging is one such strategy, which aims to enhance the knowledge of people with vision impairments in in the widest sense of the word, by creating viable and accessible communication links for the full development of their abilities (Mohamed 2016).
Worldwide, the management of the Braille system has been standardised for all, so that any individual with or without a visual impairment who wishes to learn this language code can access it in a simple, practical and systematic way, as the social and commercial problems that this market segment generally faces when making a purchase are very diverse, due to its dependence on third parties and even on society in general to satisfy its own consumption needs (Zavala 2019).
Neuromarketing was born out of significant developments in neuroeconomics and behavioral neuroscience. Beginning in 1920, several trials and experiments were conducted in an effort to revolutionize marketing research, from Nixon's study of eye movements of people flipping through print ads to Zaltman's study of emotional responses and neural signatures using PET scanners. With the advent of biometrics in marketing, many industries have adopted it as a technology to revolutionize marketing research. Actually, brain imaging and eye-tracking are widely used in all areas of marketing. Neuromarketing is an effective complement to traditional methods and puts an end to skepticism about consumer intent and manipulation (Mouammine and Azdimousa 2021).
In Algeria, opportunities for the personal and professional development of this target group are offered by various national and international organisations within society, with the sole aim of improving the quality of life and promoting the social well-being of this category. However, the Algerian pharmaceutical market offers limited options in terms of pharmaceutical and technological consumer products for visually impaired and blind consumers. National and international brands that market pharmaceutical products do not currently emphasise the implementation of the Braille system in their marketing and communication strategy, as a socially responsible action that benefits a collective society (The drama of the blind: All the news. 2021).
The following actions will be dealt with:
• Measurement of the attitude of visually impaired and blind people towards Braille labelled packaging for pharmaceutical products.
• Measurement of the purchase intention of visually impaired and blind people towards pharmaceutical products with Braille labelled packaging.
• Finding out the opinion of pharmacy doctors on the packaging of pharmaceutical products labelled in the Braille system.

In the light of the aforementioned actions, our problematic aims to analyse the impact of innovative packaging labelled in the Braille system for pharmaceutical products on the attitudes and purchase intention of visually impaired and blind consumers in Algeria.
In order to answer the problematic of this research work, we will be interested in some areas related to sensory marketing, packaging, labelling using the Braille system, attitudes and purchase intention of consumers.

2 LITERATURE REVIEW

To seduce the consumer, managers are now increasingly working on all sensory registers within the sales areas (Kotler, Keller and Manceau 2015). Daucé (2002) states that sensory marketing is present on the product itself, its packaging, its distribution, and its communication, but there is only the price that is not affected by sensory marketing.
According to Hafiz (2020), sensorial marketing exploits two distinct yet complementary axes in line with buyers' expectations: it improves the perceived quality of the product but also helps to promote the staging of the product in the point of sale. It is no longer enough to simply offer a product on a shelf, a setting is created and a story is told that leads to the product, which is itself enhanced by setting itself. The study conducted by Randiwela and Alahakoon (2017) focused on identifying how sensory marketing could be used to improve business volumes in the health and care industry, through visits and brand loyalty, as the sensory aspect helps to win in completion or, conversely, at loss.
Due to the high competition in the health and care sector in India, various types of promotions need to be carried out regularly to build customer loyalty, as the costs of transferring customers to another competing hospital are minimal. At present, private hospitals are regularly adding new tools to their marketing strategies to gain a competitive advantage over their competitors. Among other things, hospitals are using sensory marketing to gain and retain new customers. In the health and care sector, all five sensory marketing tools are involved in service delivery.
To test the impact of the different sensory marketing tools (visual, auditory, olfactory, tactile and gustatory) on the

perception and stimuli of brand loyalty, the two researchers chose the quantitative approach. Primary data were collected using a questionnaire. All closed-ended constructs used in this study were measured using the seven-point Likert scale. Data were collected from a sample population representing 300 respondents. The results show that there is a positive and significant impact, at any confidence level of each sensory marketing tool on improving perception and stimuli for brand loyalty, but the most effective sensory marketing tool that can be used to improve perception and stimuli for brand loyalty is tactile marketing. The two researchers Ira and Anand (2018) in turn, conducted an exploratory study, which aims to explore the concept of sensory marketing and understand the perception of young people towards sensory marketing. Sensory marketing is a function of the understanding of sensation and perception to the field of marketing for cognition, emotion, learning, preference, and choice or consumer evaluation. Admittedly, sensation and perception are stages of sense processing, when the stimulus hits the receptor cells of a sense organ, and perception on the other hand, is the awareness or understanding of sensory information.

Packaging, for example, gives different visual cues about the product. It can be used to convey many descriptions of the product. To give an impression of heaviness, display the product image at the bottom of the packaging, as it can also be used to highlight certain features of a product. The sense of vision has many links to the other senses. Vision precedes touch, allowing us to identify the product, that we want to touch and what to expect when we smell it. We find that many entrepreneurs have not realised the impact of sensory activities and cannot use them effectively. This issue leads us, to ask how sensory marketing can be used effectively as a promotional tool to improve shop image, customer value and consumer behaviour. To test the impact of sensory marketing on consumer behaviour a quantitative approach was followed, a questionnaire was administered and the scales included statements where respondents had to indicate their choice on the five-point Likert scale. The total sample size was 100 respondents selected randomly sampling method. The results show that all sensory marketing tools impact consumer behaviour at 17%, but the sense that has the most individual impact on consumer behaviour is tactile marketing with a percentage of 18.1%

2.1 TACTILE MARKETING

According to Jiyang et al. (2020), it is widely recognised that the five human senses (touch, smell, sight, hearing and taste) influence consumers' purchasing decisions. Today, an increasing number of companies are applying multi-sensory marketing techniques to influence the consumer on an emotional level. As the place where consumers experience accommodation services, it is essential for luxury hotels to offer multi-sensory experiences to consumers in order to build lasting loyalty. Customer loyalty is the main reason a consumer maintains a long-term relationship with the brand, re-purchase and brand switching. However, there is a lack of knowledge on how multi-sensory marketing influences these aspects of customer loyalty. Therefore, these three researchers conducted a study to explore the relationship between multi-sensory marketing and several aspects of customer loyalty in luxury hotels. In addition, it also aims to compare the impact of visual, olfactory, auditory, tactile and gustatory marketing on different aspects of customer loyalty in luxury hotels. A questionnaire survey was used to collect the primary data, the simple random sampling technique was used and 300 respondents were randomly selected to participate in the survey.

The results of this study show that all five sensory marketing tools are positively related to customer loyalty, and that they have a positive impact on satisfaction and repeat purchase intention of luxury hotel consumers. On the other hand, the tool that has the most impact on luxury hotel customer loyalty, is tactile marketing, which denotes that consumers pay more attention, to the sense of touch when staying at the hotel, as touch is the most direct way for consumers to gather information about products or services, and a good sense of touch is very likely to positively influence consumers' attitudes, behaviours and purchase intention.

2.2 PACKAGING

According to Kotler and Keller (2006), packaging can also be called conditioning and refers to all the activities related to the design and manufacture of product packaging. Packaging can be broken down into a combination of different variables: materials (glass, cardboard, metal, etc.), colors (color, shade, tone, etc.), shape and finally graphics (brand, product name, design, etc.). (Gaelle 2009). The term packaging is often used as a synonym for packaging and conditioning. However, the term packaging does not only refer to physical functions, but also to decorative aspects, so it is preferred to other terms. Packaging is defined as all the material elements that, without being inseparable from the product itself, are sold with it in order to allow or facilitate its protection, transportation, storage, presentation on the shelf, identification and use by customers (Lendrevie, Lévy and Lindon 2013).

According to a study conducted by (Serhal and Pantin-Sohier 2017), the tactile dimension is especially solicited by product designers and sensory signature developers to differentiate the brand. Consumer goods manufacturers are increasingly seeking to involve the material properties of a product or packaging in the consumption experience, including texture. Thus, it seems essential to investigate the impact of physical properties of texture

and the underlying psychological processes. This will allow us to understand the effects induced by a specific texture on the evaluation of functional and symbolic variables of the product. This information is crucial to guide the manufacture of materials with surface properties that can evoke emotions congruent with the brand strategy.
The researchers conducted a study to examine the role of the physical properties of packaging texture on product and brand evaluation. To do this, three packaging for two product categories were tested with respondents. The study also addresses the impact on beliefs, perceived quality, gender dimensions of brand personality, and attitude and purchase intention in two contexts, visual and visual-haptic. The survey is based on a quantitative approach with a sample of 900 respondents, of which 424 answered the questionnaire in a visual context and 476 in a visual-haptic context where respondents had to indicate their choice on the seven-point Likert scale. The results of the study highlight the impact of packaging texture on product and brand evaluation. In both visual and visual-haptic contexts, the results allow us to underline the direct role that packaging texture, and in particular the symbolic information emitted by its physical properties, can play in the evaluation of packaging, product and brand.
Broučková, Jaderná and Srbová (2019) analyze consumer behavior in relation to best practices for promoting products in reverse-engineered packaging. They present the practical activities undertaken by the Lidl retail chain to highlight the most common customer testimonials about retro-designed products. Based on a survey that took place between May and July 2017 and, relying on a structured questionnaire as the basis for information collection. The interviewers used CAPI (Computer Assisted Personal Interview) to collect representative data from 9 districts in the Czech Republic, from each of which 11.1% of respondents came. The survey yielded 1012 valid responses, with the age and gender distribution consistent with the National Statistical Office data.
The results show that more than three quarters of the respondents noticed the retro editions in the stores. The Lidl retail chain was mentioned most often. Although the survey did not ask about shopping habits and we could not filter out the influence of subjective preferences, the difference between the Lidl chain store and other retailers was significant enough to be called relevant. The Tesco chain was cited primarily by men, and women associated reverse-engineered packaging with a retailer less often. The authors also analyze the sources of information about reverse-engineered products. Flyers and television advertising were followed by in-store promotion. The last part of the article focuses on the marketing communication techniques applied in the Lidl retail chain during their "retro week", during which retro-designed products are subject to a special offer. Other retail chains do not offer products in retro-designed packaging in such a strategic way, which may explain why these products are not noticed as often in these stores, even though these retailers offer them in their product range.

2.3 LABELLING IN BRAILLE SYSTEM

According to Kolter et al. (2015) the secondary packaging is the most decisive when purchasing the product. As it is the one that will be seen and even picked up to touch the texture and label of the packaging. That said, according to Barbosa and Okimoto (2019), graphic designers are hired to create packaging with visual appeal to attract the eyes of consumers, however, the issue of accessibility of products and packaging is not addressed in undergraduate courses. The main needs of a visually impaired or blind person are the assurance of purchase of products, such as information about the expiry date and composition on the packaging. To counter this limitation according to the study conducted by Barbosa and Okimoto (2019), there is the Braille reading and writing system. In addition, we know that one of the limitations faced by blind and visually impaired people is the difficulty of buying pharmaceuticals, as many medicines do not have this system. In this context, it was proposed to apply the Braille system in the design of packaging for over-the-counter medicines for blind people.
In order to pilot this study, a qualitative approach was conducted with visually impaired and blind people to find out their views and opinions regarding packaging for pharmaceutical products labelled in the Braille system. Data was collected through an interview guide with open and closed questions followed by a tactile usability test and the opportunity to touch the product packaging. The results show that all the interviewees were 100% in agreement that there is a need for nutritional information to be transcribed into Braille, especially as the respondents expressed a preference for packaging with tactile communication.
Another related study conducted by Almukainzi et al. (2020) aimed to explore the medication use pattern of blind and severely visually impaired patients living in Saudi Arabia, and to investigate the demand for the application of Braille labelling on the medication provided to these patients. They confirm that the visual difficulties that impact on the activities of visually impaired people in daily life can extend to affect the safety and efficacy of medicines. Due to their disability, this population is unable to differentiate the names or colours of medicines, they also remain unable to read the usual medicine leaflets explaining the doses, expiry dates and appropriate storage conditions of their medicines. As a result, accidental medication errors are anticipated, especially among people taking treatment for chronic diseases.
The survey was conducted using online-administered questionnaires sent to participating blind associations in different cities in Saudi Arabia and submitted to blind Saudi influencers on social networking sites. The data sample included 215 respondents (visually impaired and blind people). The results showed that the majority of

respondents recommended the use of Braille labelling; with 91% of respondents agreeing that, Braille labelling could improve the quality of therapy. Added to the previous researchers, Heredia (2019) was also interested in the packaging for pharmaceutical products labelled in the Braille system.

He states that there are different types of disabilities, which can affect the sight for example; visual disability corresponds to a deficiency in the vision of the people suffering from it, such handicap, which prevents them from being able to socialise or communicate in a normal way. To counter this limitation, there is the Braille reading and writing system. On the other hand, it is known that one of the limitations faced by blind people is the difficulty of buying pharmaceutical products, as many medicines do not have this system. In this context, it was proposed to apply the Braille system in the design of the packaging of medicines for visually impaired and blind people.

In order to carry out the study, a mixed methodological approach was established. In the quantitative study, a questionnaire was administrated to a sample of 67 visually impaired people, in order to find out the criteria related to the design of medicine packaging using the Braille reading and writing system. In the qualitative approach, an interview guide was established and interviews with 6 representatives of pharmacies were carried out, which allowed knowing the opinion regarding the development of the proposal. The results show that, 100% of the interviewees approve of the idea of designing and implementing medication packaging using the Braille system, as it helps them when acquiring this type of product, which means that they have the possibility to check the product characteristics detailed on the label before consumption, In addition, pharmacy staff mention that there are difficulties when choosing a medicine or product because they do not identify the information or data, so they often ask the staff for help, which justifies their choice.

2.4 PSYCHOLOGICAL PURCHASE FACTORS (ATTITUDE, PURCHASE INTENTION)

In a study conducted by Gunawan (2015), he assumes that psychological factors such as motivation, perception and attitude of the consumer are considered as the main factors for purchase decision. These psychological factors process all the marketers' stimuli and then influence the overall purchase decision of the consumer. To confirm hypothesis, he conducted a study that aimed to determine the impact of consumer motivation, perception and attitude on the consumer's purchase decision. In addition to compare the purchase behaviour of consumers in two different cities in Indonesia, Surabaya and Jakarta in terms of Carl's Junior, one of the most prominent restaurants, capable of attracting many citizens in Surabaya and Jakarta who dared to queue just to enjoy a burger. In order to conduct the study proper, a quantitative approach was implemented, where simple random sampling was used to obtain the sample data by distributing 100 questionnaires to each company in Surabaya and Jakarta on Carl's Junior. The result showed that there was the significant impact of consumer's motivation, perception and attitude on their purchase decision to different degrees; it was also shown that there were similarities and differences in consumer behaviour of the two different cities Surabaya and Jakarta.

Smolka, Smolková and Vilčeková (2021) address two fundamental topics, the issue of environmental marketing in the context of customer preferences and consumer generations, especially in Slovakia. The purpose of examining the preferences of customers of different generations was to prove that the implementation of environmental marketing principles is necessary. The survey was conducted in the Slovak Republic from September 25, 2019 to October 13, 2019. The number of respondents was 545, including 243 men and 304 women, from all regions of Slovakia. The research was commercial in nature and was conducted in accordance with the objectives of the grant project Consumer Literacy and Changes in Consumer Preferences when Buying Slovak Products. The results affirm that environmental responsibility is gradually being promoted by Slovakia's consumers. The preferences of the customers are progressing significantly, although the changes in preferences do not occur uniformly between the generations.

Customers learn and have the opportunity to obtain information, prefer products that they can clearly identify, and prefer those that are produced or grown according to the principles of sustainability and whose production is as environmentally friendly as possible. Sustainability-based marketing strategies need to be developed by all companies, not just those that have already integrated environmental goals into their objectives. Over the next decade, sustainability principles will become the norm and it will literally be impossible to sell products without environmental criteria. The absence of any sustainability criteria, whether they belong to the ones we have mentioned or are written as new, is a mistake in marketing strategy that a company can pay for by losing customers.

3 THEORETICAL MODEL

In order to answer the problematic of this research work, we were inspired by the literature review, which allowed us to express the links between the variables of our research and to formulate the following hypotheses:

• The effect of packaging for pharmaceutical products labelled in the Braille system on the attitudes of visually impaired and blind consumers.

• Packaging contributes to product evaluation and Braille labelling on pharmaceutical packaging is known to influence consumer attitudes (Heredia 2019).

We therefore propose the following hypothesis: H1: Packaging for pharmaceutical products labelled in the Braille system has a positive effect on the attitudes of visually impaired and blind consumers.
H1 (a): Packaging for pharmaceutical products labelled in Braille has a positive effect on the general attitudes of consumers.
H1 (b): Packaging for pharmaceutical products labelled in Braille has a positive effect on the attitude (knowledge function) of consumers.
H1 (c): Packaging for pharmaceutical products labelled in Braille has a positive effect on the attitude (protection objectives) of consumers.

• The effect of pharmaceutical packaging labelled in Braille on the purchase intention of visually impaired and blind consumers.
The packaging for pharmaceutical products labelled in the Braille system provides additional information about the packaged product, allowing the visually impaired and blind consumer to formulate a judgement about the product in question (Heredia 2019), as such, this action is widely identified as an antecedent of purchase intention in the literature. Subsequently, we propose the following hypothesis:
H2: Packaging for pharmaceutical products labelled in the Braille system has a positive effect on the purchase intention of visually impaired and blind consumers.

• The effect of attitudes on purchase intention of visually impaired and blind consumers.
According to (Gunawan 2015) who studied the relationship between attitudes and purchase intention, purchase intention can be geared by consumers' attitudes. Based on this research we assume the following: Making use of this research orientation, the following hypothesis can be formulated:
H3: Attitudes have a positive effect on the purchase intention of visually impaired and blind consumers.

4 METHODOLOGY

Based on previous research (Almukainzi, Almuhareb, Aldwisan and Alquaydhib 2020), (Barbosa and Okimoto 2019) and (Heredia 2019), and in order, to achieve our research objectives, we adopted a mixed-research approach: 1. the quantitative approach to obtaining measurable data, such as consumer attitudes and purchase intention; 2. the qualitative approach to study the views and opinions of opinion leaders in relation to the actual situation of consumers on the ground, as this will allow us to get closer, to the place where the events take place. This hybrid approach is part of a positivist epistemological research posture of a hypothetical-deductive type.
To carry out this mixed-method approach research, we first conducted the quantitative study of the period from 29/08/2021 to 10/09/2021 with 72 visually impaired and blind (Almukainzi, Almuhareb, Aldwisan and Alquaydhib 2020), (Heredia 2019), using a self-administered questionnaire, consisting of six items, four scales and a sample of packaging for pharmaceutical products labelled in the Braille system (Table 1). In an average of 15 minutes, respondents indicate their choice on the five-point Likert scale, with the aim of quantifying their attitudes and purchase intention towards Braille-labelled pharmaceutical packaging.
Subsequently, and in order to strengthen further our study, we opted for a qualitative study carried out with 6 doctors in pharmacy (Heredia 2019), (Barbosa and Okimoto 2019), which includes the collection and analysis of data that were expressed through a semi-structured interview guide, divided into three headings, in order to find out about their opinions regarding the design of pharmaceutical packaging labelled in the Braille system.

5 RESULTS

Using the information contained in the table below, which details the profile of the respondents, it should be noted that (72.2%) of our sample population is male. They are mostly aged between 35 and 64 years (76.4%), single (59.9%) and live in the centre of Algiers (100%).

Table 1: Respondent profiles
Source: Authors

5.1 FREQUENCY OF USE OF BRAILLE LABELLING ON PACKAGING

Question: How often do you use Braille labelling on pharmaceutical packaging on a daily basis?

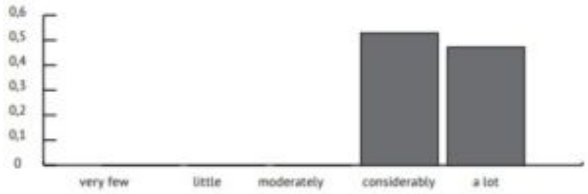

Figure 1: Frequency of use of Braille labelling on pharmaceutical packaging
Source: Authors

The results of the graph presented above show that 52.8% of the respondents use Braille labelling on pharmaceutical packaging a lot and the remaining 47.2% use it considerably.

5.2 ATTITUDES OF VISUALLY IMPAIRED AND BLIND CONSUMERS

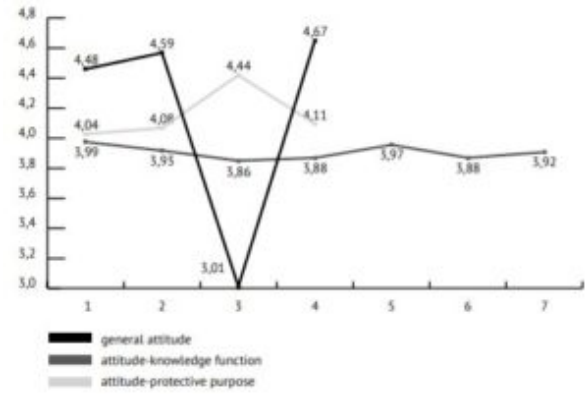

Figure 2: Average score of consumer attitudes towards Braille labelling on pharmaceutical packaging
Source: Authors

From the graph above which groups three attitude scales: general attitude, attitude-knowledge function, attitude-protective purpose, we note the positive attitude of respondents towards Braille labelled pharmaceutical packaging, especially in terms of safety and protection, but also in terms of knowledge as it makes their routine more predictable.

5.3 PURCHASE INTENTION

Question: On a scale of one (strongly disagree) to five (strongly agree), to what extent do you agree with the following statements?

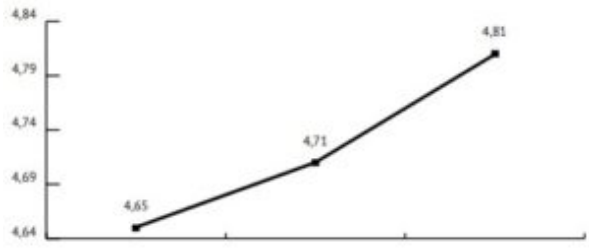

Figure 3: Consumer purchase intention
Source: Authors

The graph above shows that the majority of respondents are interested in and want to know more information about the packaging of braille labelled pharmaceuticals. They also state that they are very likely to purchase pharmaceuticals that have braille labelling. This confirms that respondents have a positive purchase intention towards pharmaceuticals that have Braille labelled packaging.
In order to test the validity of the measurement scales used in this research, four factor analyses were conducted focusing on the correlation matrix, total variance explained and the Varimax orthogonal rotation, with the aim of reducing the number of statements for each variable. We also used Cornbrash's alpha, which is a mathematical test for the reliability of the measurement scales used.
The results of these preliminary analyses allow us to proceed with the following analyses.

5.4 PRINCIPAL COMPONENT ANALYSIS

Table 2: Results of principal component analyses
Source: Authors

From the above, which summarises all the principal component analyses carried out during the study, we can see from the KMO index of the four scales that the correlations between the items are of good quality and have a good structural coefficient. The Cronbach's Alpha coefficient of all scales are considered to be both reliable and acceptable.

5.5 HYPOTHESIS TESTING

We will proceed to the analysis of simple and multiple regressions between the different variables: the packaging labelled in braille system for pharmaceutical products, attitudes and purchase intention of visually impaired and blind consumers. The analysis will rely on two elements (Jr, Black, Babin and Anderson 2014). The quality of the model, with the R2 test (percentage of total variance explained) according to the following rule:
$0.00 \leq R2 \leq 0.30$ the linear model is bad.
$0.30 \leq R2 \leq 0.50$ the linear model is acceptable.
$0.50 \leq R2 \leq 0.70$ the linear model is good.
$0.70 \leq R2 \leq 1.00$ the linear model is very good.
The nature of the relationship, with the Fisher test criterion (significant relationship if Sig ≤ 0.05).

H1: Packaging for pharmaceutical products labelled in the Braille system has a positive effect on the attitudes of visually impaired and blind consumers.
• H1 (a): Packaging for pharmaceutical products labelled in the Braille system has a positive effect on the general attitudes of consumers.
• H1 (b): Packaging for pharmaceutical products labelled in Braille has a positive effect on the attitude (knowledge function) of consumers.
• H1 (c): Braille-labelled pharmaceutical packaging has a positive effect on consumer attitudes (protection objectives).

Table 3: Results of the simple regression analysis
Source: Authors

According to the table presented above, the Fisher tests confirm the first hypothesis. The models obtained through the various simple regressions are statistically significant (Sig ≤0.05). They indicate F values between 10.806 and 48.264. Thus, the simple regression analyses globally indicate positive β's ranging from 0.366 to 0.639 (the variation of y with respect to x increases by one unit). However, the results indicate relatively low R2's, ranging from 0.134 to 0.408.
The effect of Braille-labelled packaging for pharmaceutical products on attitude towards the product is therefore moderate. Hypotheses H1 (a), H1 (b), H1(c) are confirmed by the whole sample and our hypothesis H1 therefore is confirmed.

H2: Packaging for pharmaceutical products labelled in Braille has a positive effect on the purchase intention of visually impaired and blind consumers.

Table 4: Results of the simple regression analysis
Source: Authors

Table 4 clearly shows that, we find that the relationship between Braille labelled packaging and purchase intention of visually impaired and blind consumers is significant (p value <0.005). In the light of such a result, it can be concluded that Braille labelled packaging for pharmaceutical products positively influences the purchase intention of visually impaired and blind consumers.
Thus, our second hypothesis H 2 holds valid.

H3: Attitudes have a positive effect on the purchase intention of visually impaired and blind consumers.
In this section, we want to highlight the relationship between attitude towards the product, attitude towards the product (Knowledge function), attitude towards the product (Protection objectives), and the behavioural intention of visually impaired and blind consumers in Algeria.
To this end, we conducted a multiple-regression analysis for these variables to test hypothesis H3. The results are presented in the table below:

Table 5: Results of the multiple regression analysis
Source: Authors

We can note from the table that the models obtained through the various multiple regressions are statistically significant (Sig ≤0.05). They show F values ranging from 4.58 to 13.80. These results are consistent with our assumptions. We conclude that hypothesis H3 holds valid too.
The subsequent section will present the results of our qualitative study, summarising the verbatim and statements formulated by our interviewees during the semi-structured interviews.

Table 6: Results of the qualitative research
Source: Systematised by the authors

6 DISCUSSION

According to the results obtained through the experimental research, packaging labelled in Braille system for pharmaceutical products has a positive impact on the attitudes of visually impaired and blind consumers. This goes mainly in line with the findings of similar research, namely that of (Barbosa and Okimoto 2019). This would lead us to assert that designing a packaging labelled in the Braille system for pharmaceutical products is very likely to have a positive attitude on the visually impaired and blind consumer, as long as he/she states that it provides him/her with some security in his/her daily life.
Furthermore, and based on our results, it can be noted that packaging labelled in the Braille system for pharmaceutical products has a positive impact on the purchase intention of visually impaired and blind consumers; This is in line with the results of the research work of (Heredia 2019) Heredia's (2019) research work. Additionally, this result allows us to argue that the visually impaired or blind consumer prefers to purchase pharmaceutical products that have Braille labelled packaging instead of the regular packaging.
In this very specific context, the literature review allowed us to assume that consumers' attitudes had a positive impact on their purchase intention (Gunawan 2015). Consequently, that enabled us to confirm the validity of this hypothesis, as the attitudes of visually impaired and blind consumers positively affect their purchase intention.
We conclude that the expected results have achieved at large, as all the formulated hypotheses have been validated in our experimentation. The results of the qualitative research carried out with opinion leaders (doctors in pharmacy/chemists), confirmed the need to design packaging for pharmaceutical products labelled in the Braille system, which confirms the results of previous research work (Heredia 2019), and which also represents the feasibility of developing the proposal related to the packaging of medicines using the Braille system with the aim of favouring the inclusion of visually impaired and blind people.

7 CONCLUSION

The aim of this research was to measure the effect of innovative Braille-labelled pharmaceutical packaging on the attitudes and purchase intention of visually impaired and blind consumers. To do this, we adopted quantitative and qualitative approaches. The quantitative research aims to obtain measurable data in relation to the attitudes and purchase intention of visually impaired and blind consumers. Whereas, the qualitative research allowed us to investigate the opinions leaders: doctors in chemist, in relation to the current situation of visually impaired and blind consumers in the field.
In sum, the results allowed us to validate the following hypotheses:
• Packaging for pharmaceutical products labelled in the Braille system has a positive effect on the attitudes of visually impaired and blind consumers (General attitude towards the product, Attitude knowledge function, Attitude protection objectives).

• Packaging for pharmaceutical products labelled in Braille has a positive effect on the purchase intention of visually impaired and blind consumers.
• Attitudes have a positive effect on the purchase intention of visually impaired and blind consumers.

The results also allowed us to highlight the views of doctors in chemists regarding the importance of introducing Braille labelling into the design of pharmaceutical packaging. Therefore, we recommend that TABUK Pharmaceuticals implement Braille labelling in the design of its product packaging, as the target population of visually impaired and blind consumers is receptive to the concept. This is supported by the opinion of opinion leaders who confirm the importance of Braille labelling on pharmaceutical packaging to visually impaired and blind consumers.

The limitations of this research lie mainly in the representativeness of our sample population (N= 72); (yet, what can be said about a relatively small number can be extended to a higher number). The impossibility of having the authorisations issued by the Ministry of Solidarity to carry out the survey with visually impaired and blind consumers, and finally the difficulty of reaching the people we were interested the difficulty of getting in touch with truly involved persons for the qualitative study: doctors in chemists.

It should be also that the present study does not mean that the research on this subject is closed, on the contrary, it leaves the lines of research open to further research and refinement in the field. Packaging is a research topic which that includes several aspects to be studied and scrutinized and the packaging labelled with the Braille system is a new and very important concept, which has been dealt by a limited number of researchers. Thus, it would be wiser to:

• Carry out a qualitative study with visually impaired and blind consumers to find out their intrinsic needs for information about the products to be purchased;
• Study the perception of visually impaired and blind consumers regarding packaging labelled in Braille;
• Study the material feasibility of producing Braille labelled packaging for pharmaceutical products within production companies (pharmaceutical laboratories).

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KĽÚČOVÉ SLOVÁ/KEY WORDS

innovation, attitude, packaging, pharmaceutical products, purchase intention, blind person, braille system, visually impaired
inovácia, postoj, obal, farmaceutické výrobky, nákupný zámer, nevidiaci, Braillovo písmo, zrakovo postihnutý

JEL KLASIFIKÁCIA/JEL CLASSIFICATION

M31, O31, O35

RÉSUMÉ

Vplyv inovatívneho balenia na postoje a uvažovanie o nákupe slabozrakých a nevidomých spotrebiteľov: Príklad situácie v Alžírsku

Zrakovo postihnutí alebo nevidomí čelia pri svojich každodenných činnostiach mnohým výzvam, vrátane nákupu liekov. Na prekonanie tohto obmedzenia; existuje inovatívny systém čítania a písania Braillovho písma, ktorý bol zavedený do označovania obalov farmaceutických výrobkov. Cieľom tohto výskumu je zmerať vplyv inovatívnych farmaceutických obalov označených Braillovým písmom na postoje a nákupný zámer slabozrakých a nevidomých spotrebiteľov. V príspevku sme uplatnili kvantitatívne a kvalitatívne prístupy. Kvantitatívny výskum mal za cieľ získať merateľné údaje vo vzťahu k postojom a nákupnému zámeru slabozrakých a nevidomých spotrebiteľov na vzorke 72 slabozrakých a nevidomých ľudí. Zatiaľ čo kvalitatívny výskum nám umožnil skúmať názorových lídrov: lekárov chemikov vo vzťahu k súčasnej situácii slabozrakých a nevidomých spotrebiteľov v teréne a súčasne boli realizované pološtruktúrované rozhovory so 6 lekármi, skúmajúcimi dôležitosť Braillovho označovania obalov pre farmaceutické výrobky. Výsledky nám umožnili potvrdiť hypotézy: Obaly na farmaceutické výrobky označené Braillovým písmom majú pozitívny vplyv na postoje slabozrakých a nevidomých spotrebiteľov. Obaly na farmaceutické výrobky označené Braillovým písmom majú pozitívny vplyv na nákupný zámer slabozrakých a nevidomých spotrebiteľov. Postoje pozitívne ovplyvňujú nákupný zámer slabozrakých a nevidomých spotrebiteľov. Výsledky nám umožnili zdôrazniť názory lekárov chemikov na dôležitosť zavedenia Braillovho písma do dizajnu farmaceutických obalov.

RECENZOVANÉ/REVIEWED

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