

Digital and Social Determinants of Consumer Decision Making in OTC Pharmaceuticals

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ABSTRACT

This paper outlines various factors that determine consumer choice of over-the-counter drugs, focused mainly on digital marketing and social group influence. The research work is based on quantifying the relationship between different factors and consumer decision processes. These results also suggest a fair relationship between digital marketing and consumer buying behaviour, showing that digital platforms are increasingly used as information sources for OTC medicines. On the other side, reference groups—like advice from pharmacists, doctors, family, and friends—are more important for purchase choices than online marketing, highlighting how vital trust between people is in health decisions. The study further shows that digital marketing and reference groups are complementary, with consumers mainly initiated into buying through digital means but seeking validation and advice from trusted people. These agree with earlier findings and amplify the evolving interplay of modern marketing strategies with social influences in the traditional sphere of pharmaceuticals. Practical implications for this research indicate that pharmaceutical companies must pursue integrated marketing strategies in which digital outreach is combined with efforts to reach reference groups. The pharmacist or health professional is another important agent that can bridge the gap between online and offline consumer involvement. This study thus helps marketers, healthcare professionals, and policymakers develop strategies for improving consumer awareness and confidence in OTC medicines.

Introduction

The main purpose of this study is provide information about digital and social determinants of consumer decision making in OTC pharmaceuticals It follows that, in recognition of this increased dependency, the paradigm for OTC medications has shifted in recent times from mere maintenance

medications to a global strategy of proactive management of good health where self-care is the new form of health care. OTC drugs, including everything from simple pain relievers to supplements, provide the individual with an easy, economical way to deal with everyday health problems without having to visit a doctor for a prescription. Spreading over the past 20 years, OTC sales have consistently outperformed prescriptions, giving great testimony against self-medication and consumer empowerment (Covington, 2002; Tisman, 2015). At the same time, consumer interest in self-care and wellness has grown, fueled by improved health literacy, greater access to information online, and continuing prescription to non-prescription switches (Denise et al., 2010). Unlike the clinical approach to health care with a relative absence of choice, the OTC market affords consumers the opportunity to choose between competing products according to preferences rather than clinician prescriptions, hence offering an opportunity for pharmaceutical manufacturers to create impressions and affect perception with branding, price, and promotion strategies (Battistoni et al., 2014). Unlike the prescription drug market, the OTC sector is less strictly regulated, which allows for more flexibility in marketing approaches and creates intense competition among brands.

Therefore, it is important to understand consumer behavior in this market as it provides the pharmaceutical companies with an opportunity to devise targeted marketing strategies that will meet the requirements and perceptions of consumers regarding health. This research aims to find out the key drivers of consumer purchase behaviour regarding OTC drugs, focusing on five key factors: digital marketing, reference groups, which include pharmacists, family, and friends; brand experience; price; and packaging design, and their impact on purchase intention. Digital marketing, with specific reference to social media and online platforms, has developed high levels of influence whereby "pharmaceutical firms gain direct access to consumers in increasing the awareness of benefits offered by their products or maintaining brand loyalty" (Roblek, 2018). More specifically, reference groups like pharmacists, family, or friends often guide and help develop consumers' perceptions and confidence in OTC products through advice that might be a very influential factor in buying decisions. Brand experience also serves as a critical factor influencing consumer perceptions of quality, safety, and trustworthiness.

Price is a critical determinant, especially in highly price-sensitive markets; affordable OTC options will go a long way in consumer choice. According to Kotler and Armstrong (2012), consumers weigh perceived value against the cost, and therefore, companies have to position their products appropriately in the competitive market with available alternatives. Packaging design is another influential factor, which is basically the first point of contact and visual appeal for consumers. Research has shown that packaging attributes, such as design, colour, font, and layout, increase a product's appeal and help create consumer perceptions about quality and trust (Silayoi & Speece, 2007). Creative packaging makes a brand stand out in a busy market and provides important information, which helps build trust, especially for health-related buying. Within the changing competitive landscape of today, with consumer choices for more products having similar therapeutic effects, the factors driving their decision to choose a particular one need to be understood. This study looks at certain factors to give useful marketing information to pharmaceutical companies. The goal is to help them improve their marketing plans to attract and keep more consumers loyal to their brands. The findings will be useful in both academic and practical fields, as they will also guide pharmaceutical marketers in implementing strategies that fit the changing market for OTCs. Finally, the study will be a primer for subsequent studies. It will provide a baseline for comprehending how digital marketing, reference group influence, and brand experience combine to influence purchase decisions for consumers of over-the-counter drugs.

Problem Statement

The OTC pharmaceuticals market is growing due to an increase in consumer desire for self-care and ease of availing drugs without prescriptions. Despite a multitude of studies that have addressed the factors that influence consumer buying decisions, there still exists ambiguity with regard to how digital marketing, reference group influence, experience of the brand, price, and packaging design each influence consumer behavior in this space particularly with the population of Karachi. The pharmaceutical companies invest considerable funds in the digital marketing strategy to enhance the brand awareness, but the extent to which the digital marketing is affecting the customer purchasing decision is still unknown. Secondly, though price and package design are two variables that have been known to affect the purchase, yet there has been no study exploring the importance of these variables under an integrated framework within the over-the-counter pharmaceutical market. Indeed, with the increasing competition in the OTC sector and changing consumer preference patterns, such insight is pertinent for pharmaceutical companies to design adaptive marketing programs and maintain consumer trust according to the current requirement of consumers.

Gap Analysis

The pharmaceutical industry has been studied in depth regarding consumer behavior; however, the study about how OTC medicine purchases in Pakistan are influenced by the simultaneous effects of digital marketing, reference groups, brand experience, price, and packaging design is relatively unexplored. Although global studies highlight the role of digital platforms in influencing consumer choice, few studies discuss how Pakistani consumers interact with digital marketing in terms of OTC medicines. Further, although reference groups like pharmacists and doctors are known to affect purchase behavior, there is insufficient empirical evidence that distinguishes their impact from that of family and friends. Brand experience in terms of consumer loyalty and repeat purchases is also underexplored in the Pakistani market. Price sensitivity and packaging design are also critical but understudied factors that influence consumer choices in OTC medicine purchases. The present study aims to fill the current gaps by an in-depth analysis of how these factors collectively affect consumer decision-making particularly in Karachi, thus providing pharmaceutical companies with very significant insights on how to improve their marketing strategies and boost consumer engagement.

Research Objectives

The Research Objectives of this study includes:

1. To determine the impact of Digital Marketing strategies on the consumer decision making for OTC drugs
2. To identify the extent to which brand experience, packaging design and prices influences consumer decision when buying OTC drugs
3. To evaluate influence of Reference groups on the purchase behavior of consumer for OTC drugs

Research Questions

- What is the impact of Digital Marketing strategies on consumer decision-making for OTC drugs?

- To what extent do brand experience, packaging design, and price influence consumer decisions when purchasing OTC drugs?
- How do reference groups influence the purchase behavior of consumers for OTC drugs?

Literature Review

Over-the-counter (OTC) Medications

OTC drugs are pharmaceutical products that a consumer can buy without a prescription. They are designed to treat minor, self-diagnosable health conditions, including the common cold, allergies, headaches, minor pains, and digestive problems. OTC drugs empower consumers to take care of their health independently and provide the convenience of treating small health problems without having to see a doctor. This accessibility makes it easier for healthcare systems by offering quick fixes for usual health issues. More people are aware, these products are cheaper, and self-medication is becoming more common, which is boosting the worldwide popularity of OTC medicines. As such, Dejana and Stanić (2018) noted that the increasing trend toward self-care has been one of the significant factors contributing to the global expansion of the OTC market. Besides, the regulatory trends that involve switching prescription drugs to over-the-counter status empower patients' independence by making them decide for themselves about their well-being (Kathiravan et al., 2019). This translates to a shift in health care to more comfortable and affordable medicines for the patients.

Digital Marketing for Pharmaceutical Companies

Digital marketing has brought about an excellent change in the promotion of OTC drugs within the pharmaceutical industry. Digital media provide a direct channel through which companies can reach the consumer with all the information relative to products, including benefits, proper use, and possible side effects. Methods like search engine optimization (SEO), social media ads, email marketing, and influencer promotion help drug companies connect with a wide audience, improving product awareness and brand memory (Khazzaka, 2016). Specifically, social media is usually used as an interactive channel for brands to reach their consumers, respond to queries, and offer personalized tips on health. This two-way communication builds up a relationship of trust and transparency- an essential component in healthcare. According to Tyrawski and De Andrea (2015), digital marketing enlightens consumers concerning over-the-counter (OTC) drugs through their decision-making processes. Moreover, the existence of digital information has made it easier for consumers to access credible resources, hence helping and molding them to make more informed health related decisions (Porokhnenko & Sapozhnikova, 2019).

Influence of Reference Groups

Reference groups, like family, friends, and healthcare professionals, play a vital role in consumer decisions about OTC medications. Social interactions often shape consumer preferences because people rely on trusted recommendations to guide their choices. Family and friends, through personal experiences and word-of-mouth endorsements, play an integral role in shaping perceptions about specific OTC brands or products. This influence is especially pronounced in collectivist societies, where decisions are often validated through social consensus (Ding et al., 2020). The influence of reference groups goes beyond personal connections. Informational influence provides consumers with guidance on purchasing a product, whereas normative influence forces consumers to conform to the choices the group has made and/or expects them to

make as well (Pransopon & Hoonsopon, 2019). In health-related purchases, trust in reference groups is especially influential since consumers make safety-ensuring and effective selections.

Role of Pharmacist and Doctor Recommendations

As part of the ongoing healthcare team, pharmacists and doctors are concerned authorities in healthcare whose recommendations significantly influence OTC medication purchases. The pharmacists, often the first point of contact in retail pharmacies, provide expert guidance on selecting appropriate OTC products based on individual needs. Their role in educating consumers about proper usage, dosage, potential side effects, and drug interactions ensures safe and responsible self-medication (Puspitasari et al., 2019). A study by Gore and Madhavan (2018) identifies that the role of pharmacist interventions is instrumental in reducing consumer uncertainty, given a broad array of over-the-counter options. Professional endorsements by doctors also bolster OTC products with respect to consumer confidence in their quality and reliability. Such consumer trust is very critical to decisions involving health compared to ordinary consumer purchases.

Brand Experience

Brand experience plays a central role in shaping consumer loyalty and satisfaction in the OTC market. Positive interactions with a brand whether through product efficacy, ease of use, or customer support create lasting impressions that influence future purchasing decisions. Consumers are more likely to repurchase products from brands they trust, especially in the healthcare domain, where perceived quality and reliability are critical (Kohli & Buller, 2019). The sensory and affective aspects of the brand experience increase consumer satisfaction by significant margins. Such attributes as pack presentation, usability, and integrated experience strengthen the brand image and give rise to affinity between the consumers and favorable emotions towards the product (Aufegger et al., 2021). In a market this competitive, branding and consistency for the OTC manufacturer is required for building long-term relationships with the consumer

Price as a Determinant of OTC Medication Purchase Decisions

Price is one of the major factors in consumer choice for OTC medicines, especially within price-sensitive markets. Affordability is one of the key factors that many consumers consider when choosing health-related products. Lower-priced alternatives, including generic options, often attract budget-conscious buyers who seek practical solutions at reduced costs (Altaf et al., 2020). However, it may be more appealing to other classes of consumers who believe that the higher the price, the better the quality and effectiveness. According to Ling et al. (2017), price perception also leads to brand loyalty. Consumers have a greater tendency to switch to a competitor's product if they perceive a certain brand's pricing as exorbitant. Pharmaceutical companies must balance this in terms of competitive pricing to ensure value appeal across different consumer segments.

Packaging Design and Consumer Appeal

Major determinants in consumer decision-making processes include the packaging of over-the-counter (OTC) medications. Packaging refers to a structural and visual mechanism that is aimed at capturing the interest of the consumer, providing essential product information, and reinforcing brand identity. Prominent labelling, dosage guidelines, and safety warnings are some of the critical components that give consumers confidence in the quality and dependability of the product (Rettie & Brewer, 2000). Besides, the stylish and creative package may well single out a commodity

against the background of rival brands, particularly in retail trade, where too many products struggle for consumers' attention. Indeed, some characteristics like ease of use, good material, and attractive appearance increase a product's subjective value. Underwood & Klein (2002) state that "Investment in quality packaging by a pharmaceutical company is less an aesthetic issue than a strategic move to gain consumer trust and loyalty."

Hypothesis Development and Conceptual Model

From the above sections that have justified the relationship among the variables of the study, the hypotheses and the model of the study are developed below as follows:

- **H1:** There is a positive significant impact of brand experience on consumer purchase decision for OTC medicines
- **H2:** There is a positive significant impact of pharmaceutical digital marketing on consumer purchase decision for OTC medicines
- **H3:** There is a positive significant impact of friends and family recommendation on the consumer purchase decision for OTC medicines
- **H4:** There is a positive significant impact of price on the consumer purchase decision for OTC medicines
- **H5:** There is a positive significant impact of packaging design on the consumer purchase decision for OTC medicines
- **H6:** There is a positive significant impact of pharmacist/physician recommendation on the consumer purchase decision for OTC medicines.

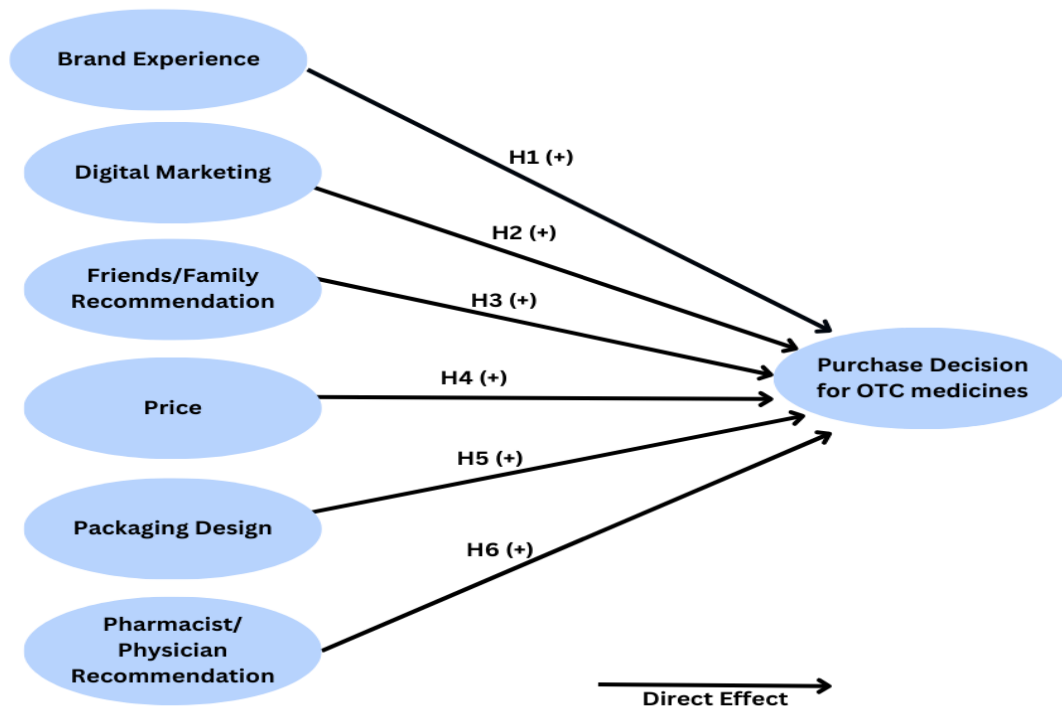


Figure 1: Conceptual Model

Research Methodology

Research Measures

This study used a cross-sectional survey method in which a structured questionnaire was adapted to collect quantitative data on key variables affecting consumer purchasing decisions for OTC (over-the-counter) medications: pharmaceutical digital marketing, reference group influence, brand experience, packaging design, and price, all against consumer buying decisions. To maintain privacy, the data collection process was anonymous via online questionnaires. This data was used to develop the research instrument for this purpose, namely an adapted questionnaire with sections that comprehensively measured these factors. This questionnaire contains eight sections in total. The first one is a demographic section where age and gender information is sought. The other sections were made up of 20 items rated on a five-point Likert scale ranging from 5 for strongly agree to 1 for strongly disagree. The higher the rating on the scale, the stronger the agreement. Items in each category have been developed and adapted from existing research using established scales for the measurement of each factor. For this study, the pharmaceutical digital marketing variable was measured using five items adapted from the work of Omar and Atteya (2020) and Habash and Al-Dmour (2020). The reference group variable was adapted from studies by Wube Temechewu and Gebremedhin (2020) and Chan and Tran (2016), resulting in five items. Brand experience was measured with three items, also adapted from Wube Temechewu and Gebremedhin (2020). Finally, the dependent variable, consumer buying decision-making, was measured using seven items adapted from studies by Wube Temechewu and Gebremedhin (2020) and Habash and Al-Dmour (2020). These adaptations ensured that the questionnaire items aligned with prior research findings and enhanced the relevance and accuracy of the data collected.

Data Collection

This research was conducted with consumers who buy OTC medicines from pharmacies in Karachi, Pakistan. The respondents were included in the online survey distributed through more than 200 links. A total of 158 complete responses were returned, including 70 males and 88 females. This sample size gave a good representation of consumer perceptions from all walks of life in the Karachi area, which increased the reliability and generalizability of the findings.

Instrument Reliability and Validity

A reliability test was performed on the questionnaire items using Cronbach's Alpha to determine their reliability. Nunnally (1978) suggests that a Cronbach's Alpha score of 0.70 or greater indicates acceptable internal consistency for study purposes. For this study, all variables were above 0.7, indicating that the measurement scales employed had a good level of reliability (Table 2). The measurement items adapted from previous, well-established studies supported the validity of the study. The questionnaire items were drawn from instruments that had been used in previous studies. The adaptation of these items into this study, as underpinned by the literature review, supports the construct validity of the research instrument as advanced by Kathiravan et al. (2019). This study improves the validity and reliability of the data collected through the use of validated items in advance and are itemized in Appendix A, which provides significant insight into the factors that influence the consumer buying decision for over-the-counter medications.

Results

For data analysis, partial least squares structural equations modelling (PLS-SEM) was considered the best choice for this case, as the core of our research model and hypothesized relationships were explanations and predictions, considering the expected managerial implications of the study given by Ringle et al. 2015, using Smartpls 3.3 to assess the measurements and estimate the model parameters. The analysis is performed by first evaluating the measurement model and then the structural model (J. Hair et al., 2010).

Demographic Statistics

An online survey was conducted using an adapted questionnaire. The sample that has been further analyzed for the results have following Demographic Statistics.

Table 1: Demographic Profile

Items	Classification	Frequency
Age	18-25	96
	26-35	57
	36-45	2
	45 & above	3
Gender	Male	70
	Female	88
Qualification	High School	20
	Bachelor's degree	120
	Master's degree	18

Measurement Model

For the assessment of internal consistency reliability, Cronbach's alpha composite reliability (J. Hair et al., 2010) and RhoA coefficient (Dijkstra & Henseler,2015) are the coefficients applied. Outer loading of the manifest variables or observed variables and Average Variance Extracted (AVE) was examined through convergent validity. The scale is considered acceptable when, according to (J. Hair et al., 2010), the Average variance extracted value exceeds 0.5 and the outer loading value is more significant than 0.7. A bootstrap procedure with 5,000 samples was performed in order to assess the significance of the data (J. Hair et al., 2010).

Table 2: Outer Loadings

	BE (Brand Experience)	DM (Digital Marketing)	FFR (Family Friend Recommendation)	P (Price)	PD (Package Design)	PPR (Pharmacist Recommendation)	PurD (Purchase Decision)
BE 1	0.928						
BE 2	0.939						
BE 3	0.951						
DM 1		0.988					
DM 2		0.990					
DM 3		0.964					
DM 4		0.969					

DM 5		0.980					
FFR 1			0.974				
FFR 2			0.984				
FFR 3			0.974				
FFR 4			0.987				
FFR 5			0.974				
P 1				0.863			
P 2				0.741			
P 3				0.919			
P 4				-0.755			
P 5				-0.635			
PD 1					0.903		
PD 2					0.917		
PD 3					0.889		
PD 4					0.871		
PPR 1						0.997	
PPR 2						0.991	
PPR 3						0.994	
PPR 4						0.995	
PurD 1							0.035
PurD 2							0.935
PurD 3							0.926
PurD 4							0.035
PurD 5							0.917
PurD 6							0.845
PurD 7							0.869

In table 3 Cronbach's Alpha values ranging between 0.7-0.8, Composite reliability range between 0.8-0.9 and rhoA coefficients >0.5. Hence, these all show the reliability of the construct and satisfy the criteria as prescribed by J. Hair et al., 2010. Convergent validity assessment has shown that both the variables of SM5 and PI4 with outer loading 0.677 and 0.688 are below the threshold limit of 0.7 and thus removed from the model. Thus, by removing both variables, the study satisfied the criteria and had satisfactory AVE and outer loading for all the indicators.

Table 3: Cronbach's Alpha Values

CONSTRUCTS	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
BE (Brand Experience)	0.937	1.024	0.958	0.883
DM (Digital Marketing)	0.989	1.000	0.991	0.957
FFR (Family Friend)	0.989	1.014	0.991	0.958
P (Price)	0.754	0.876	0.758	0.622
PD (Package Design)	0.917	0.920	0.942	0.801

PPR (Pharmacist Recommendation)	0.996	0.996	0.997	0.989
PurD (Purchase Decision)	0.623	0.883	0.864	0.610

Table 4: Fornell Larker

Constructs	BE (Brand Experience)	DM (Digital Marketing)	FFR (Family Friend Recommendation)	P (Price)	PD (Package Design)	PPR (Pharmacist Recommendation)	PurD (Purchase Decision)
BE (Brand Experience)	0.939						
DM (Digital Marketing)	0.495	0.978					
FFR (Family Friend Recommendation)	-0.038	-0.092	0.979				
P (Price)	0.097	0.060	-0.321	0.789			
PD (Package Design)	0.118	0.141	-0.023	-0.343	0.895		
PPR (Pharmacist Recommendation)	0.130	0.170	0.026	0.399	-0.384	0.994	
PurD (Purchase Decision)	0.131	0.147	-0.128	0.566	-0.485	0.913	0.641

As indicated by J. F. Hair et al. (2017), two indexes can be used to evaluate discriminant validity, including the Fornell-Larker criterion and the Heterotrait-Monotrait Ratio of Correlations (HTMT). Based on Table 3, the Fornell-Larker criterion confirms that the square root of each construct's AVE is more significant than its correlations with other constructs. In addition, as shown in Table 5, HTMT values are below 0.9, reinforcing discriminant validity Henseler et al. (2015).

Table 5: Hetero Trait Monotrait Ratio

	BE (Brand Experience)	DM (Digital Marketing)	FFR (Family Friend Recommendation)	P (Price)	PD (Package Design)	PPR (Pharmacist Recommendation)	PurD (Purchase Decision)
BE (Brand Experience)							
DM (Digital Marketing)	0.519						
FFR (Family Friend Recommendation)	0.042	0.093					
P (Price)	0.175	0.159	0.375				
PD (Package Design)	0.142	0.147	0.034	0.353			

PPR (Pharmacist Recommendation)	0.121	0.168	0.031	0.396	0.399		
PurD (Purchase Decision)	0.264	0.387	0.534	0.758	0.567	0.894	

Structural Model (Inner Model)

Direct Impact of Variables

The variance inflation factor (VIF) was used to evaluate the multicollinearity between the independent variables. All variables revealed Variance inflation (VIF) from 1.17 to 2.91, which is within the recommended threshold range of 3.3 or below. According to Kock and Lynn (2012), this suggests that there is no problem with multicollinearity or standard method bias.

Table 6: Inner Model List

	VIF
BE (Brand Experience) -> PurD (Purchase Decision)	1.349
DM (Digital Marketing) -> PurD (Purchase Decision)	1.392
FFR (Family Friend Recommendation) -> PurD (Purchase Decision)	1.175
P (Price) -> PurD (Purchase Decision)	1.470
PD (Package Design) -> PurD (Purchase Decision)	1.328
PPR (Pharmacist Recommendation) -> PurD (Purchase Decision)	1.401

Table 7 and Figure 2 indicate that, with a more than 95% confidence level, the relationships represented by H1, H4, H5, and H6 are statistically significant in the theoretical model. The other relationship does not reach the 95% significance level.

Table 6: Confidence Level

	T statistics (O/STDEV)	P values
BE (Brand Experience) -> PurD (Purchase Decision)	0.737	0.022
DM (Digital Marketing) -> PurD (Purchase Decision)	0.007	0.994
FFR (Family Friend) -> PurD (Purchase Decision)	0.840	0.401
P (Price) -> PurD (Purchase Decision)	2.076	0.038
PD (Packaging Design) -> PurD (Purchase Decision)	3.794	0.000
PPR (Pharma/Phy Recom) -> PurD (Purchase Decision)	17.143	0.000

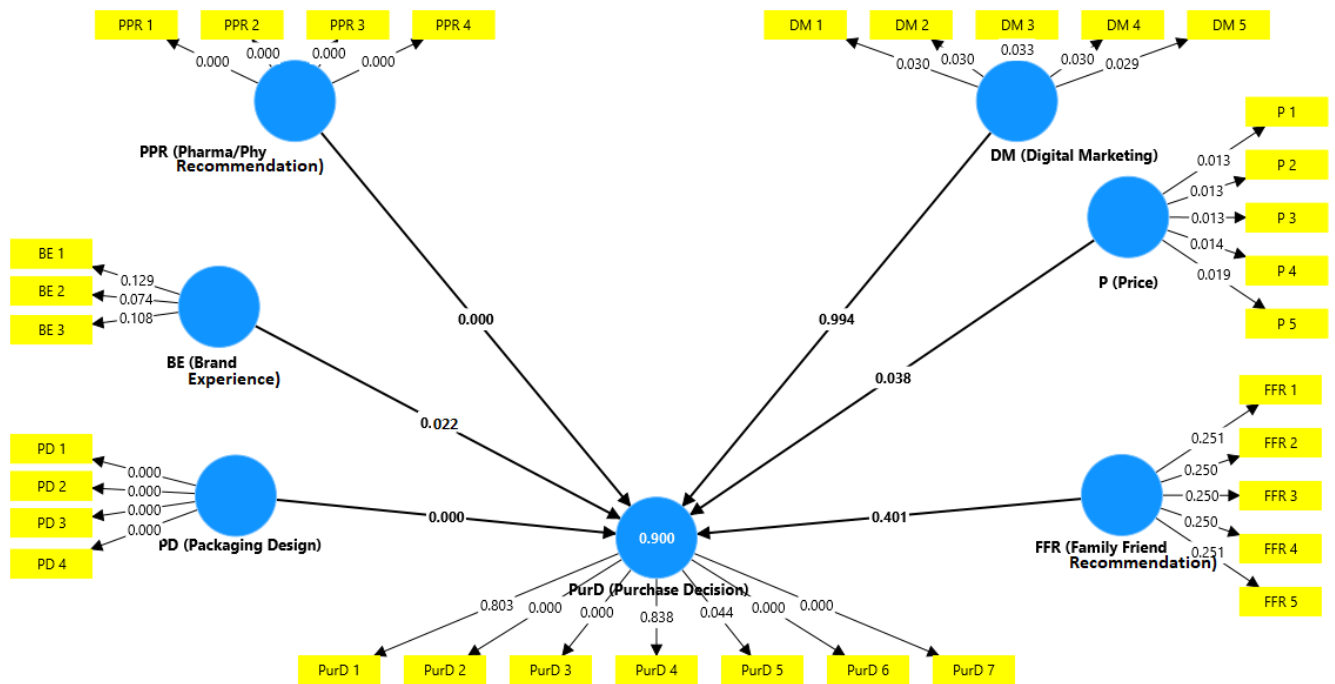


Figure 2: Graphical Framework

Hypothesis one shows how previous experience positively influences consumer buying decisions for OTC medicine, a claim supported by data analysis. The results indicate that many consumers tend to buy the same OTC medication repeatedly, underscoring the need for pharmaceutical companies to position their product as the top choice in its category. This finding is consistent with the research conducted by Wube Temechewu and Gebremedhin (2020), Habash and Al-Dmour (2020), and Rao (2016). Consumers often repurchase the same OTC medication mainly because they trust its effectiveness and have built familiarity through their brand experiences. They see the product as a dependable solution for their health issues. Moreover, some consumers stick with the same medication for convenience, as they may lack the time or desire to look for alternatives. As a result, brand experience significantly and positively influences consumer decisions when it comes to buying OTC medications. The second hypothesis argued that there is no significant relationship between digital marketing and consumer buying decision-making of OTC drugs, and the results of the data analysis show a medium correlation between the two variables. However, (Mekawie and Hany, 2019) (Roblek, 2018) and (Omar and Atteya, 2020) results show that there is a significant positive impact of pharmaceutical digital marketing on the consumer buying decisions of OTC medicines. Moreover, consumers use digital platforms as a good source of OTC medicine data.

Even though most of the respondents belongs to stable socioeconomic classes, they were highly concerned about the price. Therefore, price has a significant positive effect on the OTC purchase decision of consumer as shown in 4th hypothesis. This shows that consumers do check and compare the prices of OTC medications before buying. The finding is in accordance with the studies of Haramiova, et al. (2017), (Villako, et al., 2012), Major and Vincze (2010), Shohel, et al. (2013), and Dadhich & Dixit (2017). Packaging has much importance in marketing environment, the best packaging leaves the good image of product in the mind of customer. In the pharmaceutical industry, packaging is the collection of different components (Like bottles, vials, closures, ampoules, caps, blisters and etc.) which frame the pharmaceutical product from the time of production until it is being used. Packaging requires so much attention in the production

processes of pharmaceutical products which plays an important role in sustaining the efficacy of manufactured pharmaceuticals, but the design of package is the ultimate component that captures consumer attention. It is also evident from fifth hypothesis that packaging design has a positive impact on the consumer buying decision in OTC medicines.

The sixth hypothesis was that there is a significant positive impact of the reference group effect (pharmacist, doctor,) on the decision of consumers when it comes to buying OTC drugs and in this study and results supported through data findings of the past study. Various studies such as those by Chan and Tran, 2016 Habash and Al-Dmour, 2020 and Wube Temechewu & Gebremedhin, 2020, indicate that pharmacist, family, and friend recommendations are thought to be some of the most important factors affecting a consumer's decision to purchase an OTC. However, based on the results of this study, there is a positive relationship between pharmacist and doctor recommendations and the decision to purchase but no such relationship between friends and family recommendation and purchase decision as shown in hypothesis 3.

Conclusion

This study gives insights into what affects how people decide to buy OTC medicines. The results show that past experiences are very important in how consumers act, as many people often buy the same OTC medicine again because they trust its effectiveness and know the brand. This highlights how important it is for pharmaceutical firms to create strong brand experiences so their products stay as the preferred option. The research also looked at how digital marketing affects OTC medicine purchases. Analysis showed a moderate connection, but earlier studies indicate a stronger positive link, which means that digital platforms are an important source of information for buyers. With more people depending on digital media, pharmaceutical companies should use online marketing strategies to boost consumer engagement and brand visibility. Furthermore, the study points out that price has a big effect on what consumers buy. Even with many survey participants coming from stable economic backgrounds, people are still very sensitive to price and often compare costs before buying. This matches existing research and suggests that having competitive pricing is necessary for pharmaceutical companies. Another important finding is how packaging design affects consumer decisions. Besides its basic role of keeping the product effective, eye-catching and well-made packaging grabs consumer attention and improves how they see the brand. Therefore, spending on creative and attractive packaging can give pharmaceutical companies a competitive advantage. This study also examined the effect of reference groups, including recommendations from pharmacists and doctors, which are very powerful in influencing consumer choice. But here, in contrast to some previous research, this study found no significant effect of recommendations by family and friends on the purchase of those OTC medicines. This means that professional endorsements are more powerful in influencing consumer decision than follows peer those recommendations.

Practical Implications Based on the Research Findings

The findings of the study are actionable and valuable to the stakeholders in the OTC pharmaceutical market. It will enable the pharmaceutical companies, healthcare providers, and marketers to understand and correct consumer behavior so that market strategies and outcomes may be improved.

Reinforce Brand Experiences

A good, strong brand identity is as important to a company as the positive influence of past consumer experiences on OTC purchasing decisions. Pharmaceutical companies have to invest in consistent product quality and marketing campaigns that stress trust, reliability, and effectiveness. Most repeat purchases are driven by consumer trust and familiarity; therefore, building brand loyalty through superior product performance and targeted customer engagement is crucial.

Use Digital Marketing

Although the result suggests a moderate correlation between digital marketing and consumer purchasing behavior, earlier literature indicates a much greater positive impact. This result reveals one of the areas where pharmaceutical companies can improve their approach to digital marketing. It is important for them to emphasize the generation of quality content, enhance their position on search engines, and utilize social media to offer consumers accessible information that is credible and comprehensive about over-the-counter drugs. Organizations should add digital resources, such as interactive websites, mobile applications, and virtual consultations, to meet the needs of consumers better.

Competitive Pricing

Despite everything, price sensitivity still forms a very essential factor even in the consumer population from stable socioeconomic classes. The pharmaceutical company needs to check market prices frequently and ensure their products are competitive and not sacrificing quality. Value-for-money options with discounts or bundles on a periodical basis would help attract price-sensitive consumers and keep them coming back.

Innovative Packaging Design

The design of packaging serves a twofold purpose in both guaranteeing the effectiveness of a product and affecting the buying choices of consumers. Attractive, inventive, and practical packaging can increase a product's allure and assist pharmaceutical firms in distinguishing their products in a competitive landscape. Organizations ought to emphasize innovative designs that preserve the integrity of the product while also aligning with consumer preferences and enhancing brand perception.

Leverage Professional Endorsements

The study emphasizes the great impact of professional endorsements, for example, pharmacists and doctors, on the buying decisions of consumers of OTC medicines. Pharmaceutical companies must interact with health professionals by educating them on products, training sessions, and marketing materials. In this way, pharmacists and doctors will be adequately informed and equipped to refer their customers to pharmaceutical companies.

Implement Omni channel Strategies

In this regard, to cater to different consumer preferences, businesses should integrate digital marketing techniques with traditional methods like in-store promotions, consultations with pharmacists, and community involvement. This approach ensures that consumers receive a consistent brand message at all contact points, enhancing their overall experience and increasing their confidence in the product.

Limitations

This study is vital to understand the consumer behavior in the OTC pharmaceutical market, mainly focusing on such factors as the influence of past experience, digital marketing, price, packaging, and professional recommendation as drivers for the purchase decisions. However, study has some limitations. It was geographically confined to Karachi, which restricted its generalization to other regions having different consumer behaviors and market dynamics. In addition, although the research focused on the domain of digital marketing, it failed to analyze specific parameters like social media, search engine advertising, and influencer marketing, which would have created a more contextual understanding of effective strategies. The study was conducted over a rather short period, which restricts the ability to determine seasonal patterns or any possible change in the trends of consumer behavior. This might be looked into in subsequent studies to further strengthen the pertinence and intensity of findings and thereby the comprehension of consumer decision-making in the OTC pharmaceutical market.

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Appendix A

ITEM NO	ITEMS
<i>Brand Experience</i>	
BE1	I would put my confidence in the OTC brand since I have only had positive experiences with it.
BE2	I would be willing to pay extra for an over-the-counter brand with which I have had positive experiences.
BE3	Based on my experience, I would purchase the OTC brand that will resolve my health issues
<i>Digital Marketing</i>	
DM1	I would use digital marketing channels to know more about different brand/s available of OTC medication (vitamins, supplements, painkillers)
DM2	The available online promotional tools of OTC medication attract my attention.
DM3	The data I obtained from the OTC brand's digital marketing enables me to stay more educated about my health and/or make more informed choices.
DM4	I would prefer doing an online purchase of OTC rather than going to the pharmacy
DM5	I would go through various websites and/or online pharmacy stores to gather more information about the OTC drugs.
<i>Pharmacist/Physician's Recommendation</i>	
PPR1	I have a trust on pharmacist's/physician's recommendation of over- the-counter medicines.
PPR2	I have been buying an over- the- counter medicine according to physician's recommendation
PPR3	I repeat buying a medicine which the pharmacist described to me and gave me good results.
PPR4	I have an experience of buying over- the- counter medicine which the physician recommended me
<i>Friends/Family Recommendations</i>	
FFR1	I have been buying over- the- counter medicine of which I have heard from my friend and/or my family.
FFR2	I have a trust on family member's experiences regarding over- the counter medicines.
FFR3	I have experience of buying a brand of over- the- counter medicine that my family members recommended me without consulting the pharmacist
FFR4	The information I obtain from my family members and friends encourage me to buy over- the- counter medicine.
FFR5	I repeat buying an over-the-counter medicine that my family members and friends described to me and gave me good results.
<i>Packaging Design</i>	
PD1	Design of packaging has significant impact in buying OTC medicines
PD2	Designed packaging of OTC medicines make them more attractive.
PD3	If I am attracted by a nicely designed packaging, I would like to buy this

	OTC medicine.
PD4	Design of product wrapper inspire me to purchase an OTC medicine.
Price	
P1	I am very concerned about the price of the over- the- counter medicine
P2	I will continue buying over- the- counter medicine which I know so far even though it increases its price.
P3	I will switch to another brand of over- the- counter medicine if the price is increased.
P4	I will compare the prices of over- the- counter medicine among brands while I want to purchase
P5	I will buy the cheapest over- the- counter medicine.
Purchase Decision	
PurD1	I would purchase an over-the-counter brand that my physician recommended.
PurD2	I would purchase an over-the-counter brand that the pharmacist suggests.
PurD3	I would purchase the OTC brand that my family prefer to buy.
PurD4	I would purchase the OTC brand that my friends suggest to buy.
PurD5	I would only buy OTC medications that I know or that my doctor recommends to me.
PurD6	I decide to buy over- the- counter medicine by considering its price
PurD7	I would purchase the over-the-counter brand that would resolve my health issue based on what I heard or saw marketed on digital channels.