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Chihururu, Constance

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Factors influencing consumers' purchasing behaviour of pharmaceuticals in South Africa

Constance Chihururu

2373947

A research article submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

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DECLARATION

I, Constance Kudakwashe Chihururu, declare that this research article is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

CK Chihururu

Signed at ……Greenstone Hill……

On the ……22nd….. day of …….June…… 2023

DEDICATION

I dedicate this paper to my mother, Pelagia Chihururu, whose unwavering determination has taught me that it is never too late to pursue one's aspirations. I would also like to dedicate it to my father, Raymond Chihururu, whose unshakable belief in my abilities has consistently encouraged me to strive for greatness in everything I undertake. Thank you both for reminding me that I have the power to accomplish anything I set my mind to.

ACKNOWLEDGEMENTS

I would like to acknowledge and express my gratitude to the wonderful individuals who have supported me throughout this research journey. Their unwavering encouragement, understanding, and belief in my abilities have been invaluable. I am deeply thankful to my loved ones who stood by me during the highs and lows of this endeavour. Their unwavering support and patience provided me with the motivation to overcome challenges and persevere. Additionally, I extend my thanks to the friends who offered their advice, shared their experiences, and provided a listening ear when I needed it the most. Their input and camaraderie were truly uplifting. Finally, I am grateful to all those who have played a part in my academic and personal growth, even if their contributions cannot be specifically mentioned here. Without their collective support, this research report would not have been possible.

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ABSTRACT

Purpose: This study aims to identify the intrinsic and extrinsic factors influencing purchasing decisions for pharmaceuticals among South African consumers.

Methodology: A descriptive quantitative approach was employed, utilizing an online questionnaire distributed through nonprobability snowball sampling. The sample consisted of 246 South African consumers aged 18 and above who had recently purchased pharmaceuticals.

Findings/Results: Using regression analysis, Price, product information, and patient experience were found to significantly impact consumer purchase intention and actual purchase. Consumer trust in the product improved price tolerance and influenced actual purchases.

Practical implications: The findings have practical implications for pharmaceutical companies, marketers, policymakers, and healthcare providers. Tailoring marketing strategies, optimizing packaging designs, and providing comprehensive product information can enhance consumer purchase intentions and stimulate actual purchases. Policymakers and healthcare providers can optimize resource allocation, cost-effectiveness, and reduce unnecessary healthcare expenditures by targeting interventions that enhance consumer knowledge, promote competitive pricing, and ensure transparent product information.

Originality/value: This study contributes to the existing body of knowledge on factors influencing the purchasing behaviour of South African consumers towards pharmaceuticals. It fills a research gap by providing specific insights into consumer behaviour in this context, offering practical implications for decision-makers and adding to the literature on consumer behaviour studies in South Africa.

Keywords: consumer purchase behaviour, pharmaceutical products, South Africa, purchase decision

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1 CHAPTER 1: INTRODUCTION

1.1 Research Purpose Statement

The purpose of this study was to examine factors that influence consumer purchase intentions of pharmaceuticals in South Africa. The research looked in particular to whether search for information, product attributes and personal factors have a positive influence on purchase intentions and ultimately purchase decision of pharmaceuticals in South African healthcare consumers. On the backdrop of rising healthcare consumerism and global health care spending, understanding consumer behaviour in retail pharmaceuticals will offer insight into the influences of the buying decision of consumers (Gordon et al., 2020).

1.2 Research Background

Spending on healthcare has drastically increased globally in the past years and South Africa is no exception to this trend. In 2019, healthcare spending accounted for the second biggest expenditure for South African provincial government, with Gauteng and Western Cape spending more on health than on education (STAT SA, 2021). Healthcare spending includes consumption of healthcare goods and services. This study will explore a specific kind of healthcare spending, namely pharmaceutical spending.

Pharmaceutical spending accounts for a significant portion of healthcare expenditures in South Africa (Africa Health Exhibition, 2019). Pharmaceutical spending refers to the expenditure on prescription and over-the-counter (OTC) medicines as well as “medical non-durable goods” for consumption outside of healthcare facilities such as hospitals (OECD, 2021). With an increasing population, it is likely that healthcare and pharmaceutical spending will continue to rise (Jakovljevic et al., (2020), Xiong et al., (2022)). Healthcare and pharmaceutical spending are funded in a variety of ways, including by government entities, health insurance companies, and directly from consumer pockets (OECD, 2021). Healthcare consumers, as the ultimate beneficiary in the health decision-making chain, play a critical role in healthcare expenditures owing to their baseline financial choices. Consequently, the decision-making process of healthcare consumers has garnered increased attention from different stakeholders. However, factors influencing consumer healthcare choices are not fully understood.

1.3 Research Problem

The purchasing behavior towards pharmaceuticals is a complex and multi-faceted issue that warrants careful analysis, yet research on the subject is limited. Understanding these factors is essential for pharmaceutical companies, healthcare providers, and policymakers in South Africa to develop effective strategies to meet consumers' needs, enhance access to quality medications, and ensure the safe and responsible use of pharmaceutical products. Studies evaluating consumer purchase behaviour provide critical insight into decisions made by consumers on overall healthcare access, use of healthcare services, and disposal of pharmaceutical goods, as well as the intrinsic and extrinsic factors that influence consumer behaviour (Ting et al., 2019). While research has examined the influences on purchase decisions of pharmaceuticals (Duh & Diniso, 2020; Habash & Al-Dmour, 2020; Pujari et al., 2017; Srivastava & Wagh, 2020; Ting et al., 2019), little is known about the intrinsic and extrinsic factors that influence consumer purchasing decisions towards pharmaceuticals in South Africa. Interestingly, studies have also indicated that consumer behaviour may be influenced by geographic location (Srivastava & Wagh, 2020). However, despite the demonstrated importance of consumer-centred research in improving health economics, pharmaceutical service delivery, and overall, consumer well-being, understanding of factors influencing consumer behaviour in South Africa and Africa is limited and needs to be investigated. Therefore, the present study aims to shed light on these factors and their impact on consumer behaviour. We will examine the impact of societal factors, personal factors such as age and income, and price sensitivity on consumer purchase behaviour of pharmaceuticals in South Africa. This research is important for healthcare policy and practice, as it can inform efforts to improve healthcare access and reduce healthcare expenditures in South Africa.

1.4 Research conceptualisation

1.4.1 Research objectives

- To explore the sources of information utilised by South African healthcare consumers when making decisions about purchasing pharmaceutical products..
- To investigate the influence of product attributes viz. price and packaging on intention to purchase pharmaceuticals among South African health consumers.

- To examine the influence of personal factors viz. past experience and personal perception on intention to purchase pharmaceuticals among South African health consumers.
- To analyse the relationship between purchase intention and actual purchase behaviour of pharmaceutical products among South African healthcare consumers.

1.4.2 Research Questions

- What are the primary sources of information that South African healthcare consumers rely on when making decisions about purchasing pharmaceutical products?
- How does evaluation of product attributes viz. price and packaging influence consumer intention to purchase pharmaceuticals in South African?
- How do personal factors viz. past experience and personal perception influence consumer intention to purchase pharmaceuticals in South African?
- Is there a significant relationship between the intention of South African healthcare consumers to purchase pharmaceutical products and their actual purchase behaviour?

1.5 Delimitations and Assumptions

In this study, several delimitations were established to narrow the scope of research. Firstly, the study focused on adults older than 18 years who had purchased pharmaceuticals within the last 12 months. This criterion ensured that the study population consisted of individuals who were actively engaged in pharmaceutical consumption. Secondly, consumers who obtained medication exclusively from government facilities were excluded from the study. This exclusion was justified by the fact that these consumers do not make purchasing decisions, thus rendering their input less relevant for the research objectives. Lastly, the study employed a crowdsourcing approach to maximize participant involvement within a reasonable timeframe. This method allowed for a larger and more diverse sample size, enhancing the generalizability of the findings.

Additionally, several assumptions were made to guide the study. Firstly, it was assumed that participants would respond truthfully to the questionnaire. Since no personally identifiable information was collected, participants were expected to provide honest and unbiased answers. Secondly, the study assumed that the sampled participants would be a true representation of South African consumers of pharmaceuticals. By ensuring diversity within the crowdsourced sample, the researchers aimed to capture a wide range of perspectives and experiences. Lastly, the study assumed that the preferences of consumers regarding pharmaceuticals were well-defined. This assumption recognized that participants would have distinct preferences and expectations when it came to purchasing and consuming pharmaceutical products.

2 CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This section begins by providing an analysis of the problem. This is followed by an overview of the management theories informing this study and review of study variables. Further, hypotheses development and conceptual framework are provided.

2.2 Analysis of the problem

The literature addressing purchasing behaviour towards pharmaceuticals in South Africa is limited. Though there are considerable consumer behaviour studies conducted on South African consumers, their general applicability to this heavily regulated market of pharmaceuticals is limited. This study aims to add to the body of knowledge on factors influencing the purchasing behaviour of South African consumers towards pharmaceuticals.

Insights from the study may be used by medical aids in understanding how their members make purchasing decisions when utilising allocated medical savings funds on their medical aid as well as towards consumer education of their purchasing behaviour. Also, with so many generic products being introduced to the market, this study aims to provide insight to pharmaceutical companies on the purchasing behaviour of South African consumers. Furthermore, the findings may be used by regulatory agencies for intervention areas for consumer protection.

2.3 Theoretical Framework

Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour a social psychological theory that aims to explain and predict human behaviour. It was developed by Icek Ajzen in the late 1980s as an extension of his earlier work. According to the Theory of Planned Behaviour, these three factors—attitudes, subjective norms, and perceived behavioural control—combine to shape an individual's intention to perform a behaviour. The stronger the intention, the more likely the behaviour will occur. However, it is important to note that intention does not always

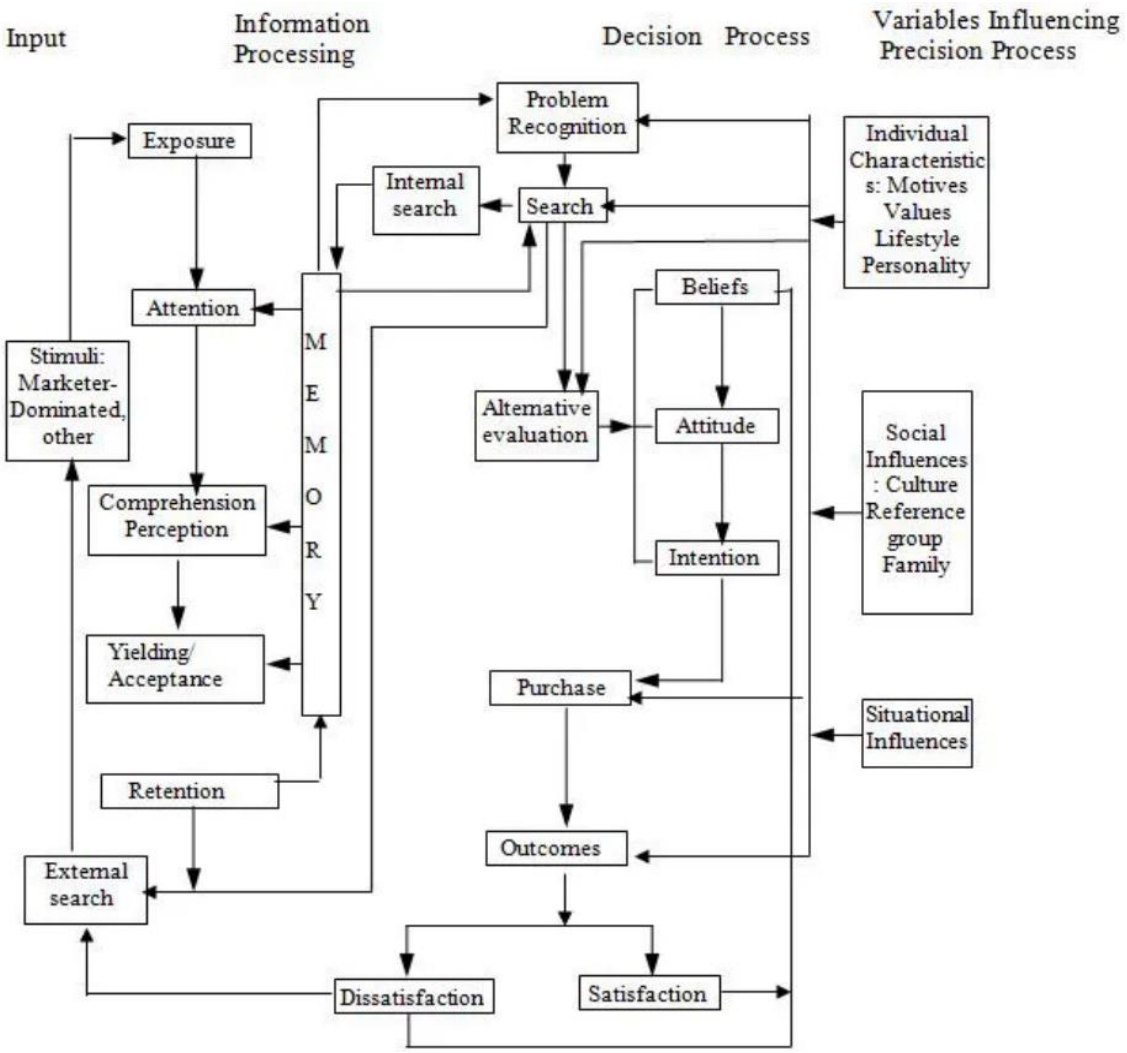
translate into actual behaviour, as there may be other external factors or constraints that come into play.

The Theory of Planned Behaviour has been widely applied in various fields, including health psychology, consumer behaviour, and organizational behaviour, to understand and predict human behaviour in different contexts. It provides a framework for analysing the factors that influence behaviour and can be used to develop interventions or strategies to promote behaviour change. develop interventions or strategies to promote behaviour change. Studies conducted on consumer behaviour towards pharmaceuticals most focused on the Theory of Planned Behaviour (TPB) (Ateke & Didia, 2018; Lodorfos et al., 2006; Srivastava & Wagh, 2020). While TPB does a great job of outlining the process of consumer behaviour and areas within it that are open to modification by practitioners (Bray, 2008), for the purposes of this study the Engel Blackwell Miniard (EBM) model of consumer behaviour was the ground theory of the research.

Engel Blackwell Miniard (EBM) model of consumer behavior

This study focused on the EBM model of consumer behaviour. The model was originally developed in 1968 and has since gone through multiple variations. It speaks to how consumers make decisions, the connection between the different stages of the decision process and the variables that influence the process (Darley et al., 2010). The model, shown in Figure 1 (Blackwell, 2006), consists of four stages namely information input, information processing, decision process, decision variables and external influences. It captures well the cognitive process involved when consumers must make a purchase (Blackwell, 2006).

Figure 1. Engel Blackwell Miniard Consumer behavior model



The EBM has great applicability and has been used to understand consumer behaviour in different markets. A recent study in Malaysia further developed a consumer behaviour model specific to healthcare based on the EBM model (Ting et al. (2019). The authors examined the consumer behaviour of 160 Malaysian adults who had purchased and used pharmaceutical products. Based on these two models, the present study sought to explore the relationship between the independent variables; consumer search for information, product attributes, personal factors, and the intention to pay as the moderating variable and pharmaceutical purchase as the dependant variable.

Search of Information

Healthcare consumers have been shown to engage in information searches on medication from multiple sources before and after a doctor visit (DeLorme et al., 2011). The information sources are categorically personal and impersonal sources. Personal sources include family, friends and healthcare professionals and impersonal sources included

print and electronic media as well as digital social networks (Ting et al. 2019). While personal sources such as healthcare professionals have been the primary information source (Nichol et al., (1992), Gore et al., (1994), Bootsumran et al., (2021), consumers refer to digital social media when making purchase decisions for pharmaceuticals (Fogel & Zhuk, 2019). In South Africa direct to consumer advertising for pharmaceuticals through print, tv, radio or online media is limited only to a narrow class of products. Furthermore, there is limited transparency on price information of drugs available which begs the question of how South African consumers get their information on pharmaceuticals and how this influences their purchase decision.

Product attributes

Consumers' intention to purchase is influenced in part by the product attributes (Lee et al., 2017, Qadri & Yasri, 2019). Pharmaceutical product attributes include reputation, safety, price, authority, packaging and authenticity (Ting et al., 2019). Price as a product attribute has been found to be one of the most influential attributes to consumer purchasing behaviour (Lodorfos et al., 2006; Akpoyomare et al., 2013; Poturak, 2014; Lee et al., 2017). In a study done in India on consumer buying behaviour toward pharmaceuticals Pujari et al., (2017) found that price influences consumer decision on product choice more than advice from healthcare professionals. Of note also is packaging, as a product attribute. Product packaging provides consumers with information on the product, differentiates one product from the next and protects the actual product (Poturak, 2014). Furthermore, elements of ease-of-use form part of packing and impact consumer purchasing behaviour (Rambabu & Porika, 2020). The present study will focus on price and packaging as proxy for product attributes.

Personal factors

Personal factors of consumers are listed by Hemsley-Brown & Izhar Oplatka (2016) as the "age, occupation, life cycle, economic, lifestyle, personality and self-conception" of the consumer. Personal factors can influence the relationship between product attributes, consumer intention to purchase and ultimately purchase decision (Ting et al. 2019). A study looking at influence of personal factors on purchases of men's cosmetic products found the relationship to be significant (Khuong & Duyen, 2016). In healthcare consumers, over and above these factors, past experience is also a significant factor (Ting et al. 2019). In a study on repeat purchase of pharmaceuticals, Lodorfos et al., (2006)

found product experience to be the most influential factor. The study also found consumer sensitivity to prices also have an influence on their purchase behaviour. The present study will focus on past experience and consumer self-conception of price sensitivity as personal factors.

Purchase intention

Intention is said to be the greatest predictor of actual behaviour, and together with purchase behaviour, consumer internal and external factors determine the intention and ultimately behaviour. Purchase intention is the willingness of consumers to buy and recommend products in the future, after a purchase. Many authors have explored the factors that influence purchase intention in various markets. These include healthcare (Bootsumran et al., 2021), wine (Atkin et al., 2007), cell phones (Lee et al., 2017) and online shopping (Indiani & Fahik, 2020). In a study done in Malaysia on factors influencing online shopping behaviour in university students, the findings showed that purchase intention greatly influenced online shopping behaviour (Lim et al., 2016). Shi et al., (2014) explored consumer intrinsic factors that impact intention to purchase organic food products and found it was influenced by personal factors such as perception and socio-economic status. The study however did not explore extrinsic factors. Another study done in Nigeria on purchase behaviour explored external factors only in the form of product attributes (Akpoyomare et al., 2013). The present study will examine both internal and external factors to determine their influence on purchase decision.

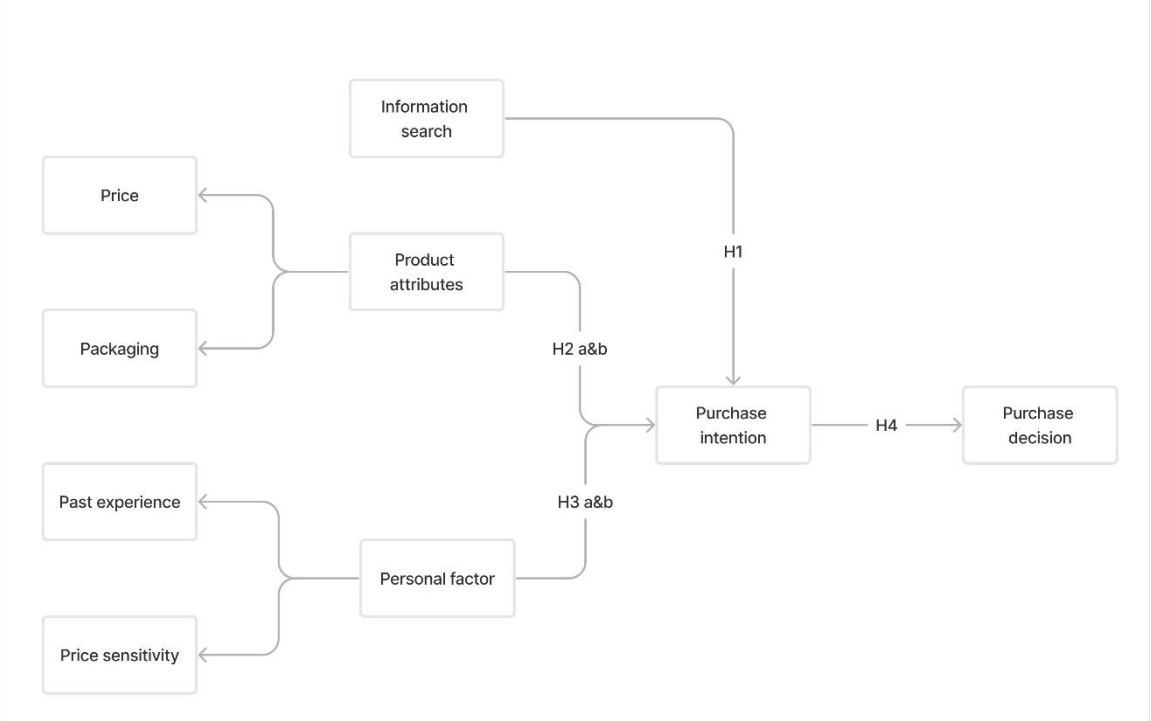
Actual purchase

As discussed above, behavioural intention has a great influence on actual purchase decision. The stronger the intention, the greater the chance of actual purchase occurring. In the present study, purchase intention as a predictor for actual purchase will be studied. The mediating role of purchase intention between actual purchase and influencing variables viz. search for information, product attributes and personal factors will be studied as factors that can predict actual purchase of pharmaceuticals in South Africa.

2.4 Hypotheses development

Built on the above discussion, figure 2 shows the conceptual framework of the study.

Figure 2. Conceptual Model



Information search and purchase intention

The healthcare market in characterised by complex inaccessible information. This narrative is true for South Africa with restrictive laws on direct-to-consumer marketing of pharmaceuticals. Health care consumers often utilise personal information sources to gain confidence in their purchase decision (McClymont et al., 2014). Personal sources have the capability to provide the information at the level of understanding the consumer (Gore et al., 1994), which influences the consumer's intention to purchase. Bootsumran et al., (2021) also corroborates that personal information sources to influence purchase intention. Thus, H1 is proposed.

H1: Information search from personal sources positively influences purchase intention of pharmaceuticals among South African health consumers.

Price and purchase intention

Across all markets, price is an integral part of product attributes and has great influence on the consumer buying decision. Pricing of pharmaceuticals in South Africa is not explicit for the consumers and often is only revealed at point of purchase. Levrini & Jeffman dos Santos, (2021) showed in their study that consumers can change their preselected choices upon discovering the price of their options and therefore influencing

purchase intention. In another study on healthcare shopping behaviour, Gordon et al., (2020) found that 98% of participants tried to find out the price before making a purchase decision. Price was shown also to be an important contributor to planned purchase behaviour of over the counter (OTC) medication (Srivastava & Wagh, 2020). Based on this, H2a is proposed:

H2a: There is a positive influence between price and purchase intention of pharmaceuticals among South African health consumers.

Packaging and purchase intention

Packaging is instrumental in helping consumers identify the product and differentiate it from other products. Poturak, (2014), looked at the role of packaging in purchase intention and found there to be a positive relationship. Furthermore, he found consumers older than 22 years of age paid attention to the writing on the products to make a purchase decision. Various studies also affirmed the positive influence of packaging on purchase intentions (Akpoyomare et al., 2013; Alhamdi, 2020; Waheed et al., 2018). So H2b is proposed:

H2b: There is a positive influence between packaging and purchase intention of pharmaceuticals among South African health consumers.

Past experience and purchase intention

Past experiences normally suggest some base knowledge of a given product. Research has shown that experience as part of consumer knowledge has a positive influence on purchase intention of healthcare consumers (Ateke & Didia, 2018). A study done in Thailand on influence of past experience on purchase intention of pharmaceutical consumers also corroborated this finding. This relationship is not only confirmed in healthcare consumers but in many other retail settings such as online shopping (Baranauskas & Raišienė, 2021; Gómez-Díaz, 2016; Lim et al., 2016). Therefore, past experience is one of the significant contributors to purchase intention, so H3a is proposed:

H3a: There is a positive relationship between past experience and purchase intention of pharmaceuticals among South African health consumers.

Price sensitivity and purchase intention

Price sensitivity as defined by Monroe (1973) is the consumers awareness and subsequent reaction when finding differences in prices of products. Hoch et al., (1995) price

sensitivity is predicated on knowledge of price ranges which requires effort and time to look up and therefore individuals with high value for time and effort are prone to be less price sensitive. Lodorfos et al. (2006) looked at influence of price sensitivity on purchase intention of OTC products and found consumers who preferred generic products over originator products to have low repeat purchase behaviour. With the lack of price transparency in most pharmaceutical products in South Affrica, H3b is proposed:

H3b: There is a positive relationship between self-perception of price sensitivity and purchase intention of pharmaceuticals among South African health consumers.

Purchase intention and actual purchase

Many authors have looked at the relationship between intention and actual purchase in various industries (Lee et al., 2017; Qadri & Yasri, 2019). Intention was found to be a strong predictor of actual purchase in online shopping (Lim et al., 2016). In the context of healthcare and pharmaceuticals, (Ateke & Didia, 2018) found there to be a positive relationship. Therefore, H4 is proposed:

H4: Purchase intention positively influence actual purchase decision of pharmaceuticals among South African health consumers.

3 CHAPTER 3: METHODOLOGY

This study aims to investigate the factors influencing the purchase behaviour of pharmaceutical products among South African healthcare consumers. Specifically, it seeks to understand the sources of information used by consumers, the influence of product attributes and personal factors on purchase intention, and the relationship between purchase intention and actual purchase.

3.1 Research approach

This study used a descriptive quantitative approach, which is suitable for exploring the relationships between variables and describing their patterns. The research objectives outlined in Section 1.4.1 above necessitated a methodological approach that would comprehensively examine the factors influencing pharmaceutical purchase behaviour. Given the need to quantify relationships, explore patterns, and describe behaviours, a descriptive quantitative approach was selected within the positivist paradigm. A descriptive quantitative approach, grounded in positivism, aligns with the objectives by enabling the collection of numerical data, establishing correlations, and analysing patterns among variables. This approach empowers the investigation of the influence of product attributes, personal factors, and the relationship between purchase intention and actual purchase, all of which constitute the core of the research questions. For the purposes of this study, this methodology was chosen as it is in direct alignment with all the research objectives. It facilitates the quantitative exploration of information sources and enables the investigation of the influence of product attributes and personal factors by measuring their impact on purchase intention. Additionally, it allows for the quantitative analysis of the relationship between purchase intention and actual purchase by collecting numerical data. It provides the necessary tools to explore, measure, and analyse the factors influencing pharmaceutical purchase behaviour among South African healthcare consumers, thus ensuring the fulfilment of the research goals.

3.2 Study Population

The population for the present study was South African health care consumers, defined as someone who uses or is a potential user of healthcare services. The target population were specifically pharmaceutical care consumers. To qualify for this study, the consumers

need to be an adult 18 years or older and have purchased pharmaceuticals in a retail or hospital setting outside of government facilities.

3.3 Sampling strategy

The sample was chosen using nonprobability snowball sampling, a selection process of participants using networks, where the questionnaire was sent to a smaller group of people who were then used to reach more respondents. Snowball sampling provides quick access to participants who can provide honest and accurate answers (Etikan, 2015). Participants are more relaxed because they were recruited through a referral system. Furthermore, because of the referral system, this sample method is both cost-effective and time effective. This method was used as it allows participant selection based on convenience and availability. Furthermore, it assisted in maximising response rate for the study.

3.4 Sample size

The target sample size, as calculated on the Sample Calculator was 385 with a 95% confidence. However due to the limited timeframe of the present study, the sample size was 246, achieving a medium sized sample (Kline, 2017). The questionnaire was sent to a smaller group of people who then forwarded the questionnaire to more respondents. The initial participants were the Wits Business School MBA students. This group was selected as it had individuals from varied backgrounds and therefore promised a sample that was varied and not too skewed. Furthermore, the ease of accessibility of this group for the researcher allowed the progress of the study in a restrictive schedule.. This initial cohort of participants were then asked to forward to any of their contacts who were above 18 years of age who have ever bought pharmaceutical products.

3.5 Data collection methods

Primary data was collected through a structured online questionnaire using the Qualtrics platform. The questionnaire was distributed via the social media platform WhatsApp to reach a wider audience. The questionnaire included validated scales from prior literature and used a five-point Likert scale. This method was chosen for its capacity to reach a wide audience, maximize response rates, and facilitate the collection of quantitative data. All participant responses collated on the Qualtrics account which was password protected to ensure data security. Furthermore, the dataset was downloaded and kept on a secure,

access-controlled laptop during and after the processing and analysis phase of the research.

3.6 Study measures

Previously validated scales were adapted to measure various constructs identified in this study. Multi-item scales were used to measure each construct, with all items measured on a five-point Likert scale ranging from 1 = “strongly disagree” to 5 = “strongly agree.” The information search scale was adapted from Chen et al. (2016) and Atkin et al. (2007), while the price, past experience, and price sensitivity scales was adopted from Lodorfos et al. (2006). The packaging and intention to purchase scales was adopted from Waheed et al. (2018), and the actual purchase scales was adopted from Kumar & Ghodeswar (2015) and Shi et al. (2014).

3.7 Ethical Considerations

This study adhered to ethical principles and obtained ethical clearance (Ethics protocol number: WBS/BA2373947/574) from the Wits Business School Ethics Committee before data collection began. Informed consent was obtained from all participants before proceeding with the study. The questionnaire had a consent form as a preface, informing participants that no personally identifiable information would be collected or used in the study, and the participants could not proceed to the rest of the survey if they did not consent to the study by clicking the ‘I consent’ button. Participants were informed that their participation is voluntary and that they could withdraw from the study at any time without consequences.

3.8 Data Analysis

The data was processed through Statistical package for Social Sciences (SPSS). Confirmatory factor analysis (CFA) was completed to confirm the variables proposed in the conceptual model, thereafter regression analysis was used to test relationships among variables.

3.9 Limitations

The sample may not be representative of the wider population of South African healthcare consumers, as it was recruited through the social media platform WhatsApp and targeted

a specific group of people who were asked to forward the questionnaire to their contacts. The use of an online questionnaire may have resulted in a selection bias towards individuals who are comfortable with and have access to technology and the internet, which may have excluded individuals who are less technologically inclined or do not have reliable internet access. Furthermore, the use of snowball sampling may have led to a self-selection bias, as participants who are more interested in the topic of the study or who have stronger opinions on pharmaceutical products were more likely to participate and forward the questionnaire to others.

4 CHAPTER 4: RESULTS

4.1 Sample Descriptives

A total of 246 responses were received for the survey. However, due to incomplete responses, only 218 responses were included in the sample and analysed. Therefore, the response rate for the survey was 88.6%. The response rate indicates the proportion of completed responses out of the total number of survey submissions. The sample (Table 1) had more females (60,1%) than males (39,4%), and one (0,5%) participant who did not prefer to state their gender. Slightly more than half of the sample (54%) is between the ages of 30 and 39 years, followed by the 40 to 49 years (21%) and 18 to 29 years (19%) age groups. Only 6% of the sample were in the older than 50 years age groups. Majority of the participants identified as black/African (84,4%) and few identified as White (6%) and Indian (6%). The sample appeared to have a high level of education as 74% of the sample had a bachelor's degree or higher as their highest level of education. Only a quarter of the sample reported not being on medical aid, whereas 75% were either the main member or a beneficiary. The sample had a relatively wide range of monthly income levels with the most common income range being R10 000 - R25 000 (25.5%), followed by Below R10 000 (20.8%) and R25 000 - R40 000 (14.8%). More than half of the sample (55,3%) reported that they spend on average between R100 and a R1000 on medications, which they purchase from a pharmacy as reported by 96% of the sample. There is a nearly equal split on main reason for visiting a pharmacy between purchasing prescription medications (44.4%) and purchasing over the counter medications (55.6%).

Table 1. Summary of the sample demographics

Variable	Category	Frequency	Percent
Gender	Male	86	39.4
	Female	131	60.1
	Prefer not to say	1	.5
Age	18 – 29 years	42	19.3
	30 – 39 years	117	53.7
	40 – 49 years	46	21.1
	50 – 59 years	10	4.6

	60 or more years	3	1.4
Ethnicity	Coloured	4	1.8
	Indian	13	6.0
	White	13	6.0
	Black/African	184	84.4
	Non-SA Citizen	4	1.8
Highest Education level	Grade 12/Matric	30	13.8
	Certificate	27	12.4
	Bachelor's Degree	63	28.9
	Honours/Postgraduate Diploma	62	28.4
	Masters	32	14.7
	PhD	4	1.8
Medical aid status	Main Member	131	60.1
	Beneficiary	33	15.1
	Not on Medical Aid	60	24.8
Total average monthly income	Below R10 000	45	20.8
	R10 000 - R25 000	55	25.5
	R25 000 - R40 000	32	14.8
	R40 000 - R55 000	30	13.9
	R55 000 - R70 000	27	12.5
	Above R70 000	27	12.5
Average monthly spent on medications	Below R100	52	24.2
	R101 - R500	76	35.3
	R501 - R1000	43	20.0
	R1001 - R1500	16	7.4
	R1501 - R2000	6	2.8
	Above R2000	22	10.2
A pharmacy is your main place for the purchase of medications	Yes	207	95.8
	No	9	4.2
	Purchasing prescription medications	92	44.4

Under which circumstances would you mostly purchase medications from a pharmacy?	Purchasing over the counter medications	115	55.6

When asked about their top three preferred sources of information when buying OTC medication, the sample's responses revealed pharmacists, other healthcare professionals and friends and family as the most influential (Table 2).

Table 2. Preferred sources of information when buying OTC medication

Responses	**Frequency**	**Percent**
Recommendation from friends/family	129	59,2
Recommendation from my Pharmacist	185	84,9
Recommendation from other healthcare professional	138	63,3
Search on Google	38	17,4
Recommendation from social media such as Facebook, Instagram, etc	11	5,0
Search on a medical website	28	12,8
An advert I would have seen on TV, Internet, or newspaper	21	9,6
I try to remember what I have used before	104	47,7

And when asked about their top three preferred sources of information on prescription medication they are not familiar with (Table 3), the responses were similar to preferred sources of information with Pharmacists and Doctors taking the lead, and Google as the surprising third preferred sources of information.

Table 3. Preferred sources of information on new prescription medication

Responses	**Frequency**	**Percent**
Ask my doctor about it	185	84,9
Ask my pharmacist	193	88,5
Ask other healthcare professionals	97	44,5
Search on Google	104	47,7

Ask on social media like Facebook, Instagram etc	3	1,4
Look for information on medical websites	60	27,5
Nothing, I don’t need to know more about it	12	5,5

4.2 Factor Analysis

A one-sample Kolmogorov-Smirnov test for normality was conducted. The results were consistent across variables, all the variables tested had p-values that are reported as "<0.001," suggesting that none of the variables in the data follow a normal distribution. Therefore, nonparametric tests were used for the analysis.

Kaiser-Meyer-Olkin (KMO) test, which measures the sampling adequacy of the variables in a dataset and examines the extent to which the variables are suitable for factor analysis was calculated as 0.763, which indicates a moderately favourable value. Generally, a KMO value above 0.6 is considered acceptable for factor analysis. This suggests that the variables in the dataset have a reasonable level of correlation and are suitable for conducting factor analysis. Additionally, Bartlett's test of sphericity yielded an approximate chi-square value of 1266.740 with 136 degrees of freedom. The associated p-value is less than 0.001, indicating statistical significance. This suggests that the variables in the dataset are significantly correlated, further supporting the suitability of factor analysis.

Factor analysis was conducted to explore the underlying structure and relationships among the variables. Principal Component Analysis (PCA) was used for factor extraction, and a Varimax rotation with Kaiser Normalization was applied to simplify and interpret the factor structure. The rotated component matrix (Table 4) displays the factor loadings for each variable across the five identified factors. Factor loadings indicate the strength and direction of the relationship between each variable and each factor.

Table 4. Factor analysis results

Rotated Component Matrix[a]					
	Component				
	1	2	3	4	5

1. I read printed information on the package of the pharmaceutical products I buy	.131	-.055	.165	.868	-.122
2. I evaluate the pharmaceutical product according to the printed information while purchasing	.039	.024	.092	.858	.020
3. I feel product information on the packet is important	.046	.010	.364	.696	.091
4. I will buy whichever pharmaceutical brand is cheapest	.099	.748	.070	.041	-.148
5. Price isn't important to me when I purchase a brand of pharmaceutical product, I have experience with	.218	-.672	.031	.222	.044
6. I am a price sensitive customer	.000	.773	-.001	.100	.271
7. I will look for the cheapest brand of pharmaceutical product	.053	.840	-.045	.023	-.047
8. If I had a good experience with a pharmaceutical product, I would recommend it to friends	.035	.013	.758	.211	.201
9. I prefer to purchase a pharmaceutical product that I have previously purchased	.200	.117	.780	.201	-.148
10. I am prepared to pay more for a pharmaceutical product that I have had a good experience with	.180	-.130	.815	.152	.080
11. It is very likely that I will purchase pharmaceutical products	.736	.006	.385	.085	-.022
12. I intend to buy pharmaceutical products	.816	.007	.282	.065	.117
13. I expect to buy pharmaceutical products	.778	-.112	.197	-.013	.136
14. I buy prescription pharmaceutical products regularly	.528	-.119	-.119	.025	.534
15. I buy non-prescription pharmaceutical products regularly	.599	.089	-.127	.102	-.008
16. I often buy pharmaceutical products when recommended to me	.128	-.114	.193	-.042	.684
17. I will only purchase a pharmaceutical product I have experience with if the price is at a certain amount or below.	-.025	.396	-.031	.016	.516
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 5 iterations.					

Five factors extracted together account for 64.37% of total variances on an overall basis. Consequently, the number of variables is reduced from 17 to 5 underlying factors. Factor 1 labelled “Purchase Intent" is characterized by relatively high factor loadings of 0.736, 0.816, 0.778, 0.528 and 0.599 for variables 11,12,13,14 and 15 respectively. These variables have anchor words such as “likely to”, “intend to”, “expect to” and “buy regularly”, suggesting that Factor 1 is a combination of these variables. Factor 2, named "Price" is represented by high factor loadings for variables 4, 5, 6, and 7 of 0.748, 0.672, 0773, and 0.840 respectively. Factor 3 has high factor loadings of 0.758, 0.780, and 0.815 of variables 8, 9, and 10 respectively, implying they collectively form Factor 3. Therefore, they are termed “Experience”. Variables 1,2 and 3 which refer to printed information on the product packaging have high factor loading of 0.868, 0.858, and 0.696 respectively on Factor 4 and are therefore named “Product information”. Variables for Factor 5, termed “Actual Purchase”, which are 14, 16, and 17 have factor loadings of 0.534, 0.684, and 0.516. These variables refer to purchase of pharmaceuticals. From the analysis, we condensed the 17 variables to distinct underlying factors related to expenditure on pharmaceutical products as summarised below:

Factor 1	Purchase Intent
Factor 2	Price
Factor 3	Experience
Factor 4	Product Information
Factor 5	Actual purchase

4.3 Testing Hypothesis

In this section, we examine the statistical significance of the relationships identified through the application of linear regression. Hypothesis testing allows for the assessment of the strength and significance of these relationships, providing insights into the potential impact of the independent variables on the dependent variable. Evaluating the p-values associated with the coefficients enables the determination of whether the observed relationships are statistically significant or occurred due to random chance. Through this analysis, the aim is to confirm or reject the research hypotheses and draw meaningful conclusions about the relationships between the variables under investigation.

To test the relationship between Search for information and Purchase intention, the preferred source of information when buying OTC medication as well as the preferred source of information on prescription medication the respondents are not familiar with, were converted into dummy variables and run through a regression model as independent variables. All the dummy variables with the exception of "Ask my doctor about it" had low coefficients and very high p values, making them statistically insignificant. The variable, "ask my doctor about it", with regards to new prescription medications the respondents don't know much about, had a negative albeit highest coefficient and low p value (β=-0.181, p=0.034). This indicates that asking a doctor about the product is associated with a decrease in purchase intention. The coefficient is statistically significant (p = 0.034), suggesting that this relationship is not likely due to chance. Therefore, based on the available evidence, we do not have sufficient support to accept the hypothesis and therefore we reject *Hypothesis 1: information search from personal sources positively influences purchase intention of pharmaceuticals among South African health consumers.*

The 5 factors extracted from exploratory factor analysis were run through linear regression and the results are summarised in Table 5 below. Since all the variables for price sensitivity had high factor loading on factor 2, together with the variable for product price, a new construct simply termed "price", combining the two constructs was raised. Consequently, hypotheses 3b, *H3b: There is a positive relationship between self-perception of price sensitivity and purchase intention of pharmaceuticals among South African health consumers*, was collapsed into hypotheses 2a. Results from the regression analysis showed that Price, Product information and Experience all had positive and significant relationships with purchase intention. The standardized coefficients beta which represents the level of effect each of the variables had on the dependent variable, Purchase Intention, showed the ranking of level of impact with the highest being Experience (β=0.355, p<.001), followed by product information (β=0.190, p=0.003) and lastly product prices (β=0.151, p=0.020). Furthermore, purchase intention (β=0.219, p=0.001) as a mediating variable had a positive and significant relationship with actual purchase, the ultimate dependant variable in the model. With every 1 standard deviation increase in Purchase intention, there will be a 0.219 increase in actual purchase of pharmaceuticals from the consumer. Based on the above analysis, there is sufficient support to accept hypothesis H2a, H2b, H3a and H4 as stated below.

H2a: There is a positive influence between price and purchase intention of pharmaceuticals among South African health consumers.

H2b: There is a positive influence between packaging and purchase intention of pharmaceuticals among South African health consumers.

H3a: There is a positive relationship between past experience and purchase intention of pharmaceuticals among South African health consumers.

H4: Purchase intention positively influence actual purchase decision of pharmaceuticals among South African health consumers.

Table 5: Coefficients test results

Dependant Variable	Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
Price	(Constant)	6.636E-16	.045		.000	1.000
	Price	.192	.082	.151	2.350	.020
Product Information	(Constant)	6.028E-16	.045		.000	1.000
	Product Information	.158	.053	.190	2.974	.003
Experience	(Constant)	3.446E-16	.043		.000	1.000
	Experience	.295	.051	.355	5.830	.000
Actual Purchase	(Constant)	3.353	.044		76.662	.000
	Purchase Intention	.214	.062	.219	3.447	.001

5 CHAPTER 5: DISCUSION OF FINDINGS AND CONCLUSION

5.1 Discussion Of Findings

The primary aim of this research was understanding the intrinsic and extrinsic factors that influence consumer purchasing decisions towards pharmaceuticals in South Africa. This section discusses the findings in relation to our research objectives, provides a link to the pertinent literature, and outlines the practical implications of the results. The findings of the study provide valuable insights into the factors that drive consumer purchasing decisions in the pharmaceutical industry in South Africa. The results of the regression analysis provided insights into the relationships between the identified factors (Price, Product Information, Experience) and the dependent variables (Purchase Intention and Actual Purchase). Additionally, the consolidation of the constructs related to price sensitivity and product price into a single construct termed "Price" resulted in the collapse of Hypothesis 3b into Hypothesis 2a.

The first objective aimed to explore the sources of information utilized by South African healthcare consumers when making decisions about purchasing pharmaceutical products. The findings revealed that healthcare professionals, particularly pharmacists and doctors, remain pivotal sources of information for consumers. This finding aligns with previous research conducted in Ethiopia (Temechewu & Gebremedhin, 2020), Thailand (Bootsumran et al., 2021), and India (Srivastava & Wagh, 2020). Notably, the study also uncovered the growing significance of digital platforms, with Google searches emerging as the third most popular source of information for prescription pharmaceuticals. This emphasizes the evolving role of online resources in shaping consumer perceptions and knowledge about pharmaceutical products, which is consistent with the broader global trend. While the findings provided insights into the sources of information, it's essential to acknowledge that the research could not provide conclusive support for the hypothesis that information search positively influences the purchase intention of pharmaceuticals among South African health consumers. This outcome warrants further exploration and potential refinement of the research instrument.

The second objective delved into investigating the influence of product attributes, specifically price and packaging, on the intention to purchase pharmaceuticals among South African health consumers. The study demonstrated that product information on packaging had a moderate impact on purchase intention, indicating that consumers do pay attention to packaging details. The majority of respondents confirmed reading and deeming packaging information as important, underlining its role in influencing their purchase decisions. However, intriguingly, a relatively smaller proportion of respondents (47%) affirmed that they evaluate pharmaceutical products based on the printed information during purchase. This may suggest that a significant portion of the sample referred to repeat purchases, where past experience played a more significant role than evaluating product information during subsequent transactions. This aligns with findings by Ting et al. (2019), emphasizing that favourable past experiences reduce the effort consumers invest in evaluating products before purchase.

Objective three examined the influence of personal factors, such as past experience and personal perception, on the intention to purchase pharmaceuticals among South African health consumers. Notably, past experience emerged as the most influential factor, with a substantial impact (β=0.355) on consumer purchase intention. A majority of the sample expressed a preference for products with which they had previous experience and were willing to pay a premium for such familiarity. This finding resonates with studies conducted in the UK (Lodorfos et al., 2006) and elsewhere (Habash & Al-Dmour, 2020; Temechewu & Gebremedhin, 2020), emphasizing the linkage between past experience, trustworthiness, and price sensitivity. The significance of positive past experience lies in its potential to shape product trust, brand loyalty, risk perception, and word-of-mouth influence. This has widespread implications such as treatment adherence which research has shown to contribute to healthcare expenditure, enhancing price elasticity of the brand products giving pharmaceutical companies a competitive edge. Understanding these dynamics can help policymakers, healthcare providers, and pharmaceutical companies develop strategies that balance consumer preferences, healthcare outcomes, and overall pharmaceutical expenditure.

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Additionally, the perceived prices of pharmaceutical products play a significant role in shaping consumers' purchase intention. The finding on the price being a positive impact corroborates findings from many other studies (Bootsumran et al., 2021; Habash & Al-Dmour, 2020; Srivastava & Wagh, 2020; Temechewu & Gebremedhin, 2020; Ting et al., 2019). The sample demonstrated a willingness to pay, with 52% of the sample agreeing that price was not important when considering a product they had a good experience with. This is supported by Lodorfos et al., (2006) who concluded that price tolerance was improved when consumers trusted the product and led to repeat purchases.

The fourth and final objective centred on analysing the relationship between purchase intention and actual purchase behaviour of pharmaceutical products among South African healthcare consumers. The analysis revealed that Purchase Intention itself acts as a mediating variable with a positive and significant relationship with Actual Purchase, the ultimate dependent variable in the model. This indicates that consumers' intention to purchase pharmaceuticals has a direct impact on their actual purchasing behaviour.

5.2 Conclusion

In conclusion, this research provides valuable insights into the factors that influence consumer purchasing decisions in the pharmaceutical industry in South Africa. The study found that healthcare professionals, such as pharmacists and doctors, remain the primary sources of information for consumers when it comes to pharmaceuticals. However, the importance of digital platforms, particularly Google searches, is also increasing in shaping consumer perceptions and knowledge about pharmaceuticals.

The findings highlight the significance of past experience as a personal factor influencing consumer purchase decisions. Consumers tend to prefer products they have previous experience with and are willing to pay more for them. Positive past experience with a product contributes to trust, brand loyalty, and word-of-mouth influence, which have important implications for treatment adherence and price elasticity of brand products.

Extrinsic factors, such as product information on packaging and product price, were also found to have a significant impact on consumer purchase intention. Consumers pay attention to the information on packaging and consider it important, indicating the role of packaging in influencing their decisions. Moreover, the perceived price of pharmaceutical products plays a crucial role in shaping consumers' purchase intention. Consumers with

favourable past experiences are willing to pay higher prices, indicating the importance of product trust and brand loyalty in price tolerance.

The research also highlights the mediating role of purchase intention, which directly influences consumers' actual purchasing behaviour. This emphasizes the importance of understanding and influencing consumer intentions to drive actual purchases in the pharmaceutical market.

5.3 Implications Of the Study

The study provides valuable insights for pharmaceutical companies, marketers, policymakers, and regulatory bodies. The findings highlight the importance of considering consumer factors such as experience, product information, and price when developing marketing strategies. Pharmaceutical companies and marketers can use this information to tailor their marketing efforts, improve packaging designs, and provide relevant and comprehensive product information to enhance consumers' purchase intentions and drive actual purchases. Furthermore, by understanding the factors that drive pharmaceutical consumers, policymakers and healthcare providers can use this information to develop strategies to optimize resource allocation and improve cost-effectiveness in the pharmaceutical sector. By targeting interventions to enhance consumer knowledge and awareness, promoting competitive pricing, and ensuring transparency in product information, healthcare stakeholders can influence consumer behaviour, leading to more informed purchasing decisions and potentially reducing unnecessary healthcare expenditures. These insights can contribute to the development of policies and interventions aimed at promoting affordable and efficient pharmaceutical spending while ensuring consumer satisfaction and access to necessary medications.

5.4 Limitations Of Study and Future Research

This study focused on factors influencing purchase of all pharmaceutical products without differentiating between those that influence the purchase of prescription pharmaceuticals and those that influence the purchase of OTC pharmaceuticals. These two categories of products have distinct characteristics, availability, and regulations surrounding their purchase. Consequently, the study may have overlooked important factors specific to each category. Future research could be conducted with separate studies that specifically focus on prescription pharmaceuticals and OTC pharmaceuticals. Studies on prescription

pharmaceuticals could explore factors such as healthcare provider recommendations, insurance coverage, the severity of the medical condition, and the influence of patient information leaflets. On the other hand, research on OTC pharmaceuticals could investigate factors such as consumer knowledge and awareness, product labelling, advertising and marketing strategies, brand reputation, and convenience of access. Furthermore, the respondents for this study were recruited solely online which may have resulted in a sample that may not be analogous to the general pharmaceutical consumer population in South Africa. Mixed-mode data collection and targeted sampling may be employed in future studies to specifically include individuals who may be underrepresented due to technological barriers.

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