

Product Packaging and Consumer Patronage of Pharmaceutical Products in the Katsina Metropolis

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Abstract

Existing empirical literature on product packaging and consumer patronage is quite scarce in the developing economies including Nigeria. Hence, there is the need for more empirical investigation in this area. This study, therefore, examines the impact of product packaging on consumer patronage using 480 users of pharmaceutical products in the Katsina metropolis. The study utilized cross-sectional descriptive survey design, descriptive statistics and multiple regression techniques. Findings indicate that packaging colour and packaging material have a positive and significant impact on consumer patronage, while packaging information has a negative but significant impact on the consumer patronage. The study concludes that right colour combination, quality material and information embedded or embossed on packaging will arouse consumers' interest and attract their attention, and consequently, improve the level of patronage. The study recommends that manufacturers of pharmaceutical products should package their products with adorable colours to improve patronage level. The paper also recommends that manufacturers of pharmaceutical products should carry out survey aimed at determining or discovering colours that are more appealing to users with a view to packaging their products in such colours.

Keywords: *Product Packaging, Consumer Patronage, Pharmaceutical Products, Katsina Metropolis*

Introduction

Packaging is an important process in the completion of a product; it is as important as advertisement as a promotional tool since it is capable of arousing interest and attracting customers to a product. Packaging is an enclosure that surrounds or wraps a product and can assume or take the form of colour, material, information on the package; size, shape, and label among others. Aside quality of the product, many consumers are attracted or endeared to a product based on its beauty and aesthetics. Hence, a well-packaged product is likely to attract more consumer patronage than a product that is not carefully packaged. Manufacturers and distributors can use the product packaging as a good selling point in the marketing of products, in anticipation or expectation for a high patronage level. The function of packaging in attracting consumer patronage is essential and cannot be over-emphasized since customer patronage for a product affects business growth, sales volume, liquidity, survivability and profitability.

Customer patronage is adjudged as an instrument for enhancing profitability and maintaining the positional level of a firm (Olowe & Okeke, 2020). Customer patronage has been viewed as a competitive asset by many result outputs. A high level of customer patronage is associated with successful organizations that are having a competitive edge as pointed out by Aksu (2006). Consumer patronage is an important factor in the customer strategy of any business (Olowe & Okeke, 2020). Increasing customer patronage has become a topical issue for discussion by consultants, practising managers, and scholars in academia (Keiningham et al., 2007). This study, therefore, investigates the impact of product packaging on the consumer patronage of pharmaceutical products in the Katsina metropolis.

There are several empirical investigations globally in the area of packaging. However, the results of these studies have produced varying conclusions concerning the relationship between packaging attributes and consumer buying behaviour (Kuvykaite et al., 2009). Differences in the context (Kuvykaite et al., 2009), proxy variables and methods of analysis may be responsible for the variability in findings. This suggests that the lack of a standard answer to the phenomenon under study is because of diverse contexts, situations/localities products under consideration, among other issues, affect consumer behaviour (Kosgei, 2014). In support of this assertion, Kotler and Armstrong (2001) observed that the behaviour of consumers is not static and factors such as personal, social, cultural and psychological factors influence buying behaviour. Cultural influence on the behaviour of consumers is different among nations; thus, marketers need to understand and exercise restraint in cultural analysis of other countries (Christ, 2009).

The existing empirical literature on product packaging and consumer patronage is quite scarce in developing economies including Nigeria. Hence, there is a need for more empirical investigation in this area. A review of empirical studies indicates that a lot of prior studies focused on purchase intention, perception, decision-making process or buying behaviour rather than the actual purchase, which is patronage. See, for instance, Ali et al. (2015); DeepaDamodaran (2019); Deliya and Parmar (2012); Eldesouky and Mesias (2014); Farooq et al. (2015); Pradhan (2020); Shafiq et al. (2011) among several others. This study addresses this variable gap by adopting patronage as the dependent variable. The review of empirical studies also suggests that most prior studies have been carried out on products or sectors different from the pharmaceutical products or healthcare sector considered in the present study. See, for example, empirical studies by Borishade et al. (2015); Grundey (2010); Kalilanjani (2020); Kosgei (2014); Liu (2011); Okeke and Amobi (2020); Sioutis (2011) among others. These empirical studies were conducted using food and beverages products, cosmetics, and household products and with none focusing on pharmaceutical products. In addition, none of these empirical studies adopted the Katsina metropolis as its case study. This study fills this contextual gap by using pharmaceutical products in the Katsina metropolis.

Literature Review

Concept of Packaging

Packaging is an extrinsic element and the container for a product (Deliya & Parmar, 2012). Packaging has the potential to increase sales and market share and reduces market and promotional costs (Raheem et al., 2014). Product packaging is used for protecting a product from the external environment and for promotion purposes (Raheem et al., 2014).

Packaging plays a key role when products are purchased; after all, it is the first thing seen before making purchase decisions (Kamaladevi, 2010). A product that is well packaged is self-advertising and serves as a purchase appeal (Lifu, 2012). A poorly packaged product poses a serious problem to the salesmen, as it will require detailed explanations to convince the customers (Lifu, 2012, Oladele & Akeke, 2012). Packaging needs to have all the necessary information on it to provide awareness to the consumer about the usage of its contents (Hannele & Harri, 2010).

There are many different schemes for the classification of packaging attributes shown in the previous research (Kuvykaite et al., 2009). Graphics, colour, form, size and material were analyzed as the main visual elements, while product information, producer, country-of-origin and brand were taken as the main verbal elements of packaging by Kuvykaite et al. (2009). However, only the attributes relevant to the present study are discussed below.

Packaging Colour

Colour plays an indispensable function in a potential customer's purchase intention and decision-making process; certain colours set different moods and are capable of drawing attention (Deliya

& Parmar, 2012). Packaging colour assists consumers to visualize and differentiate competitive brands (Aydin & Ozer, 2005). Consumers that visit a shop are exposed to different products with different colours that attract their attention.

Every colour has a special meaning which can influence consumers' feelings and mind-sets (Yeo et al., 2020). Packaging has a huge role to play in product positioning (Naik, 2015). Packaging is a source of attraction for the consumer and helps in the brand promotion of the product (Pradhan, 2020). Colours have the potential to create a deep and long-lasting impression and image about the product or brand (Imiru, 2017).

Packaging Material

Consumers can change their decisions regarding packaging material. High-quality packaging may attract consumer than low-quality packaging (Deliya & Parmar, 2012). Packaging material is the first attribute of a product that comes in direct contact with the consumer. Packaging material can prevent products from damage or loss (Waheed et al., 2018).

Printed Information

Printed information provides information about products (Waheed et al., 2018). It has been discovered that printed information on products tends to stimulate consumer purchase intentions (Ollberding et al., 2011). Eldesouky and Mesias (2014) posit that consumers in the process of reading printed information pay more attention to nutritional information than expiry date, price and brand name. Kupiec and Revell (2011) suggest that it will be more convenient for consumers to compare the ingredients if the printed information on pharmaceutical products is in the same format.

A wrapper of the product serves several purposes protection and description of the contents, theft deterrence, and product promotion (Deliya & Parmar, 2012). Information printed on the packaging can influence consumer purchase decisions (Deliya & Parmar, 2012).

Concept of Consumer Patronage

The term patronage has been described by (de Silva, 1999) as a system in which the means to accessing goods, positions, or services is enjoyed through personal relationships and the exchanging of "favours" rather than by impersonal and impartial systems of distribution (de Silva, 1999). Customer patronage is a strong commitment to repurchasing a company's products ahead of those of its competitors (Oliver, 1999). Adiele et al. (2015) see customer patronage as an increase in a company's sales volume, profit margin and customer retention level. Customer patronage is the support organization get from its customers (Adebisi & Akinruwa, 2019). Consumer patronage contains both financial and non-financial dimensions, and that makes it imperative (Olowe & Okeke, 2020).

Review of Empirical Studies

This section is devoted to reviewing the literature of empirical nature conducted in developed and developing countries of the world. Concerning this, the following empirical studies were reviewed.

Saha (2020) examined the impact of packaging on buying decisions of 338 consumers in Bangladesh using correlation and regression techniques. The author utilized colour, material, the attractiveness of wrapping; design, labelling and innovative packaging as surrogates of packaging. Consistent with the correlation results, findings from the multiple regression techniques show that all proxies of packaging are positively and significantly related to a consumer buying decision.

Using the Chi-square method of analysis, Pinto and Demey (2020) document that customers prefer written instructions on the product package, good quality and user-friendly packages. Okeke and Amobi (2020) analyzed the link between packaging and buying decisions

of 288 consumers in Awka, Nigeria using Pearson Product Moment Correlation. Findings reveal that packaging colour and material have a positive significant link with buying decisions.

Kwaku and Fan (2020) found that good product design and packaging have a positive relationship with market value and performance in Ghana. Yew et al. (2020) in Nilai-Malaysia show that colour and packaging information has a significant positive effect on buying decisions whereas packaging material shows no significant relationship with buying decisions. Yeo et al. (2020) reveal that packaging colour has a significant negative impact on purchase intention, while packaging material and packaging graphics have a significant positive impact on purchase intention using a 1 per cent level of significance.

Applying the Hierarchical multiple regression techniques to data obtained from 322 respondents, Adebisi and Akinruwa (2019) show that proxies of packaging have a significant positive effect on the patronage of Bournvita. Anjana (2018) studied the factors influencing buying behaviour of cosmetic products and found that the quality product, product price; brand name, product packaging and advertising have a positive effect on buying decisions. Waheed et al. (2018) discover that packaging colour and font style have a significant positive effect on consumer purchase intentions, while packaging material, packaging design and printed information have no significant effect on consumer purchase intentions. Khan et al. (2016) explored the impact of packaging and labelling on consumer buying behaviour in Karachi, Pakistan using multiple regression techniques applied to data received from 120 respondents. Results show that colour has a positive and significant effect on buying behaviour, while material, design and font size and printed information have no significant effect on buying behaviour.

Khuong and Hong (2016) document that colourful packaging, packaging materials and fonts, and packaging shapes indirectly affect repurchase intention. Zekiri and Hasani (2015) discovery indicates that colour, label, quality, design; product information on the package, language, brand image and innovation and practicability have a positive effect on customer buying behaviour. Naik (2015) also found that colour, packaging material and information had statistically and significant positive effect on the buying decisions using both correlation and regression methods. Farooq et al. (2015) results suggest that colour and material have a positive effect on purchase intentions using the correlation technique as a method of estimation.

Oladele et al. (2015) investigated the relationship between products packaging consumer patronage of toothpaste in Ado-Ekiti using Pearson correlation method. Results show a positive relationship between colour and customer patronage. Borishade et al. (2015) studied the effect of packaging on purchase decisions in Nigeria using multiple regression techniques. Kosgei (2014) also reports a significant positive relationship between packaging attributes and consumer's buying behaviour in Kenya. Raheem et al. (2014) discovers a significant positive relationship between packaging and students' buying behaviour in Karachi. Deliya and Parmar (2012) results reveal a positive relationship between packaging and buying behaviour in Palan district of Gujarat in India. Ahmad et al. (2012) results uncover significant positive relation between packaging represented by colour & picture and buying decision.

It can be observed from the foregoing that most of the studies have been conducted outside Nigeria, leaving a contextual gap to be filled. Additionally, it can also be observed that existing empirical works focused on purchase intention or buying behaviour and not patronage.

The review also uncover that no author focused on pharmaceutical products in the Katsina metropolis. This study has addressed these identified gaps.

Having reviewed the afore-mentioned empirical works, this study hypothesised that:

H₀₁: Packaging colour has no significant impact on consumer patronage.

H₀₂: Packaging material has no significant impact on consumer patronage.

H₀₃: Packaging information has no significant impact on consumer patronage.

Theoretical Framework

The TRA is a general theory of human behaviour that examines the link among beliefs, attitudes, intentions, and behaviours (Ajzen & Fishbein, 1980). The theory developed by Fishbein and

In selecting the respondents for the study, convenience and purposive sampling techniques were used. The convenience sampling technique was used by selecting respondents based on availability, while the purposive sampling technique was adopted because there was a deliberate attempt at ensuring that only civil servants and students of higher institutions located at Katsina metropolis were administered with the data collection instruments i.e. the questionnaire.

To address the problem of non-return and invalid cases which often renders research results invalid as documented by Groves (2006), 500 structured questionnaires was administered as against 385 suggested by the formula for sample size determination. This implies that 115 or 30% of the sample size was added to the initial sample size. Similar procedure has been adopted by many authors including Akeem et al. (2017), Aliyu (2017); Oyetunde et al. (2017); Mamman et al. (2016) and Mamman et al. (2017).

Descriptive and inferential statistics are the methods employed in data analysis. Descriptive statistics in the form of frequency tables and percentages are used in the presentation of data; while inferential statistics in the form of multiple regressions were employed to investigate the impact of product packaging on the consumer patronage of pharmaceutical products in the Katsina metropolis.

The outcome (dependent) variable is patronage and is regressed on the explanatory (independent) variables: packaging colour, packaging material and packaging information using multiple regression model specified as follows:

$$PA = b_0 + b_1PCOL + b_2PMAT + b_3PINF + \varepsilon \quad (2)$$

Where: PA = patronage

b_0 = intercept,

b_1, b_2, b_3 = Parameters or coefficient of the regression model

PCOL = Packaging Colour

PMAT = Packaging Material

PINF = Packaging Information

ε = error term

Validity of the research instruments (questionnaire instrument) was achieved with the aid of pilot study, content as well as face validity. The main objective of the validity test is to ensure that the questions or items or statements in the questionnaire schedule measure the variables that they are supposed to measure. This study carried out a pilot study to pre-test the questionnaire instrument. In line with Connelly (2008), research shows that the right pilot study sample should be 10% of the sample size projected for the large-scale study. In this study, a pilot test was conducted on 39 users of pharmaceutical products in the Katsina metropolis which correspond to 10% of the actual sample size as recommended by Connelly (2008). The result shows that the items in the questionnaire instruments are adequate. Content and face validity was done through a thorough review of related literature and validation by the project supervisor.

To achieve reliability which is ensuring that the questionnaire instruments did only measure the constructs that they are supposed to measure, but measured them correctly, the common and widely used Cronbach alpha was adopted. A Cronbach alpha not below 0.60 was adjudged as adequate by Hair et al. (2006) while Gliem and Gliem (2003); Sekaran (2003) and Uhegbu (2010) recommend 0.7 as the minimum acceptable level for achieving internal consistency. This study adopts 0.7 as the minimum level for achieving reliability.

Results and Discussion

Of the 500 structured questionnaires administered to the respondents, 480 were returned as valid resulting in a 96 per cent response rate. The high rate of valid responses was because the sampled respondents are literate. In addition, the 480 valid responses are higher than the 385 minimum sample size suggested by the Cochran formula for sample size determination for an infinite population. Hence, the 480 valid responses are adequate for analysis and discussions. Discussion

in this section is organized under the following main headings: Diagnostic tests, descriptive analysis, regression results; the test of hypotheses and discussion of findings.

Diagnostic Tests

Diagnostics tests are necessary in ensuring that the results are not biased or spurious and also to ensure that the main assumptions of the regression model are not violated. In this regard, the reliability test, normality test, collinearity test and autocorrelation test are the diagnostic tests presented here. A reliability test using Cronbach's alpha is conducted to ensure that the study scales have internal consistency. Table 1 displays the results of the Cronbach alpha.

Table 1: Reliability Test

Variable	Cronbach's Alpha	Number of Items
PCOL	.932	5
PMAT	.819	5
PINF	.859	5
PAT	.838	7

Source: Authors' Computation (2022) using SPSS

The results of the Cronbach alpha used for the reliability test in table 1 reveal that the variables have Cronbach's alpha coefficients above the minimum acceptable level of .70 according to Gliem and Gliem (2003), Hair et al. (2010), Sekaran (2003), Sekaran and Bougie (2010) and Uhegbu (2010). This implies that all the constructs meet the requirement of internal consistency.

A normality test is a statistical method used in detecting whether the data i.e. the sample has been drawn from a symmetrically distributed population. To ensure that the normality assumption is not violated, we conducted a normality test using Skewness and Kurtosis. Table 2 presents the results of skewness and kurtosis.

Table 2: Normality Test

	N	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
PCOL	480	-1.448	.111	1.213	.222
PMAT	480	.729	.111	-.066	.222
PINF	480	.530	.111	-1.547	.222
PAT	480	.014	.111	-1.255	.222

Source: Authors' Computation (2022) using SPSS

From table 2 above, it can be observed none of the values of skewness and kurtosis is more than two and seven respectively. This according to West et al. (1995) suggests that the variables are from a normal distribution. Similarly, since the skewness and kurtosis values are within the range of ± 3.5 , Hair et al. (2013) conclude that the constructs fulfil the requirements of univariate normality.

Following the normality test, the autocorrelation test is also carried out using Durbin-Watson (D-W) statistic. The D-W statistic for this study is 2.179 and it suggests that there is no serial autocorrelation problem since the statistic is close to 2 as documented by Field (2009).

A collinearity test is also conducted to ensure that there is no multicollinearity problem among the independent variables. The presence of multicollinearity in a model if not checked may bias the regression results. High correlation among the independent variables is referred to as multicollinearity, and multicollinearity is a violation of regression assumption. This study relied on two commonly used techniques of detecting multicollinearity, namely correlation matrix and variance inflation factor (VIF). Table 3 shows the results of the correlation among the explanatory variables.

Table 3: Correlation

		PCOL	PMAT	PINF
PCOL	Pearson Correlation	1	.411**	.156**
	Sig. (2-tailed)		.000	.001
	N	480	480	480
PMAT	Pearson Correlation	.411**	1	.299**
	Sig. (2-tailed)	.000		.000
	N	480	480	480
PINF	Pearson Correlation	.156**	.299**	1
	Sig. (2-tailed)	.001	.000	
	N	480	480	480

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' Computation (2022) using SPSS

It can be observed from the results of the correlation in table 4.3 that the highest correlation coefficient is .411 i.e. the correlation between packaging colour and packaging material, which is significant at a 1 per cent level of significance. Since the highest correlation coefficient is less than .70, it implies the study model has no multicollinearity problem in line with Wooldridge (2015). Additionally, the VIF is also used to detect collinearity, and the results are presented in table 4.

Table 4: Collinearity Statistics

Variable	Tolerance	Variance Inflation Factor
PCOL	.830	1.205
PMAT	.775	1.291
PINF	.909	1.100

Source: Authors' Computation (2022) using SPSS

From the results of collinearity statistics in table 4, it can be seen clearly that the tolerance statistics for each of the independent variables exceeded 0.1 and their corresponding VIFs are not up to 10. The fulfilment of these requirements following Hair et al. (2014), Harun (2020), Marzuki et al. (2020) and Pallant (2005) connote the absence of multicollinearity. This means that the VIF result has upheld the position of the correlation matrix in the absence of multicollinearity. It then follows that we can safely conclude that multicollinearity is not an issue for the present study.

Descriptive Analysis

This section captures the descriptive analysis of the demographic characteristics of the respondents in terms of gender, age distribution and occupation. Table 5 presents the descriptive results.

Table 5: Descriptive Results

Gender of the Respondents		
	Frequency	Percentage
Male	360	75
Female	120	25
Total	480	100
Age Group of the Respondents		
	Frequency	Percentage
15- 20	48	10
21- 25	144	30
26- 30	96	20
Above 30	192	40
Total	480	100
Occupational Distribution of Respondents		
	Frequency	Percentage
Civil servant	264	55
Students	216	45
Total	480	100

Source: Field Survey, 2022

It can be observed from the results of the gender distribution of the respondents as shown in table 5 that the majority of the respondents are males. This may not be in connection to the population distribution of the study area, but because of the non-probability sampling technique that was adopted. The questionnaire instrument was administered based on convenience; as such, it was easier to approach a male stranger than the female one on the street or in any strategic location. However, past studies in the study area by Mamman et al. (2017) and Olukorede (2021) have reported a higher number of male respondents than female ones in their studies, citing the cultural and religious beliefs of the study area as a possible reason for female under-representation in a survey. The descriptive results for the age distribution further reveal that majority of the respondents are more than 30 years of age. The implication is that most of the respondents are individuals of mature minds; which may also translate into the quality of responses received. It is often believed that persons that are mature in age tend to possess or exhibit a high sense of responsibility (Olukorede, 2021).

Similarly, an analysis of the occupational distribution of the respondents is also presented. The descriptive results in table 4.5 show that the majority of the respondents (55 per cent) are civil servants while the remaining are students of higher institutions. People of different occupations aside from the aforementioned ones are excluded from the study for the reasons already highlighted. The results show that the questionnaire instruments were administered to the right target audience. The higher number of respondents as civil servants is also good for the study since they have financial independence than the students who may be dependent on their parents for buying decisions or patronage.

Regression Analysis

The regression technique is used to determine the impact of the independent variables on the dependent variable. The study has one dependent variable and three independent variables. To determine the impact of these independent variables on the dependent variable, multiple regression techniques are employed. The dependent variable: Patronage (PAT) is regressed on the independent variables: packaging colour (PCOL), packaging material (PMAT) and packaging information (PINF), and the results are shown in Table 6.

Table 6: Summary of Regression Results

Model	Coefficients	t-values	p-values
Constant	19.643	19.366	.000
PCOL	.150	3.574	.000
PMAT	.119	2.466	.014
PINF	-.312	-8.217	.000
R-square	.146		
Adjusted R-square	.141		
f-stats	27.176		
f-sig.			.000
D-W	2.179		

Source: Authors' Computation (2022) using SPSS

The regression results in table 6 indicate that packaging colour (PCOL) has a significant positive impact on patronage as confirmed by the t-value of 3.574, which is significant at a 1 per cent level of significance. Similarly, the regression results also reveal that packaging material (PMAT) has a significant positive impact on patronage as indicated by the t-value of 2.466. Conversely, the regression results in table 6 reveal that packaging information (PINF) has a negative and significant impact on patronage as indicated by a t-value of -.312, which is also significant at a 1 per cent level.

Discussion of Findings

The null hypothesis one was rejected because packaging colour has been discovered to have a significant and positive impact on patronage at a 1 per cent level of significance. This implies that the decision to reject the null hypothesis one was based on 99 per cent confidence level.

The coefficient of PCOL is .150 and it implies that a 1 per cent increase in the colour decoration on the package of a pharmaceutical product is associated with about a 0.15 per cent upsurge in the level of patronage. This implies in the absence of a doctor's prescription, users of pharmaceutical products in the study area are most likely to patronize a product based on its colour decoration. The results also suggest that pharmaceutical products with good colour combinations tend to attract more attention which results in purchases. This finding is consistent with those of Adebisi and Akinruwa (2019); Amin et al. (2015); Farooq et al. (2015); Khan et al. (2016); Kosgei (2014); Okeke and Amobi (2020); Olawepo and Ibojo (2015); Saha (2020); Waheed et al. (2018); Yew et al. (2020); Zekiri and Hasani (2015) among several others that reported a positive and significant association between packaging colour and purchase intention or buying behaviour and patronage.

Furthermore, null hypothesis two which states that "packaging material has no significant impact on patronage" was also rejected because the t-value was significant at 0.05 levels. The coefficient of PMAT of .119 indicates that a 1 per cent increase in the quality of packaging material results in about 0.12 per cent contribution to the level of patronage. The implication is that pharmaceutical products with high-quality packaging material are more likely to record a high level of patronage than those with low-quality material. This result is in tandem with those of Adebisi and Akinruwa (2019); Farooq et al. (2015); Kosgei (2014); Okeke and Amobi (2020) and Saha (2020) and contrary to the findings of Khan et al. (2016), Waheed et al. (2018) and Yew et al. (2020).

In contrast, packaging information is the only variable among the independent variables having a negative t-value, suggesting that the impact of packaging information on patronage is adverse. The coefficient of PINF is -.312 which implies that a 1 per cent increase in the volume of information on packaging is associated with about a .31 per cent decline in the level of patronage. The result may not be too surprising given that pharmaceutical products are specialized products and the patronage level relies heavily on doctors' prescriptions. This implies that information on packaging such as date of manufacturing, expiry date; instructions for use,

and dosage among others did not propel patronage. This result is contrary to those of Khan et al. (2016) and Waheed et al. (2018) that did not report any significant relationship between packaging information and buying behavior. The result also did not conform to those of Kosgei (2014), Saha (2020), Yew et al. (2020) and Zekiri and Hasani (2015) that reported significant positive association between information on packaging and purchase intention or buying behaviour.

In addition, the R-square of .146 implies that about 15 per cent of the variation in patronage is jointly accounted for by packaging colour, packaging material and packaging information, whereas the remaining 85 per cent is due to other factors such as doctor's prescription, availability of the products, affordability, price, users prior experience, income level, poverty level, attitude towards orthodox medicine, literacy level, chance among other several factors not captured by the study. The low R-square does not call for concern given that many factors aside from packaging determine patronage level for pharmaceutical products considering their specialized nature. The f-statistics of a 27.176 is significant at a 1 per cent level, confirming the joint significance of packaging colour, packaging material and packaging information on consumer patronage. This implies that the model is fit and the findings are suitable for discussion, conclusion and recommendations.

Conclusion and Recommendations

This study analyzed the impact of product packaging on consumer patronage of pharmaceutical products in the Katsina metropolis using evidence from 480 users of pharmaceutical products in the study area. Three surrogates of product packaging namely packaging colour, packaging material and packaging information were taken as independent variables, while consumer patronage was used as the dependent variable. The main findings reveal that both packaging colour and packaging material have a significant positive impact on patronage; while packaging information has a significant negative impact on patronage of pharmaceutical products in the Katsina metropolis.

Following the outcome of the major findings, the study concludes that the right colour combination, quality material and information embedded or embossed on packaging will arouse consumers' interest and attract their attention, and consequently, improve the level of patronage. Information on the packaging is an important determinant of patronage, but only packaging with high-quality vital and correct information will stimulate purchase intention and patronage.

Based on the major findings and conclusion, the study recommends as follows:

- i. Manufacturers of pharmaceutical products should package their products with adorable colours to improve patronage level.
- ii. Manufacturers of pharmaceutical products should carry out survey aimed at determining or discovering colours that are more appealing to users with a view to packaging their products in such colours.
- iii. Manufacturers of pharmaceutical products should package their products with qualitative and standardized materials to enhance the level of product patronage.
- iv. Findings indicate that packaging information impacts adversely on consumer patronage in the present study. However, findings also reveal that, packaging information is the most important determinant of consumer patronage as evidenced by the highest coefficient of packaging information in the regression results. Hence, there is need for further investigation into the kind of information users want to see on the product packaging. Manufacturers of pharmaceutical products should also ensure that information on product packaging are correct and a true representation of facts.

This study is only restricted to users of pharmaceutical products in the Katsina metropolis and confined to three attributes of packaging as packaging colour, packaging material and packaging information. Other proxies of packaging such as label, size, design, innovation

etc. were excluded from the study. Future studies should consider using other locations and incorporating these variables in their studies. There is also the need to incorporate control variables or moderators such as doctor's prescription, income level, poverty level, price and affordability in future studies. This will improve the low R-square recorded in this study.

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