DEMOGRAPHIC VARIABLES AND CONSUMERS' PERCEIVED RISK IN THE PATRONAGE OF PHARMACEUTICAL RETAIL OUTLETS IN EDO AND DELTA STATES

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Abstract

This research determined the level of perceived risk that consumers' associate with the different pharmaceutical retail outlets that they patronize and establish the effect of such demographic variables as income, education, sex (gender) and occupation on the perceived risk. The investigation revealed that the levels of consumers' perceived risk in the different pharmaceutical - retail outlets were significantly different. It also revealed that income had significant effect on consumers' perceived risk but failed to establish a positive correlation between educational level, occupation, sex and perceived risk in pharmaceutical retail outlets. In view of these findings, this study recommended increased consumer protection activities and effective controlling and monitoring of pharmaceutical retail outlets by consumer protection and drug regulatory agencies, especially in the rural areas where most of the low income and poor Nigerians reside.

Key Words: Demographic Variables, Consumer Protection, Consumers' Perceived Risk (CPR), Pharmaceutical Retail Outlets, Fake and adulterated products

Introduction

In the Nigerian pharmaceutical sector, which is the focus of this study, there have been several reported cases of fake, counterfeit and adulterated pharmaceutical products in the different pharmaceutical sales outlets in the country (Osibo, 1998; Ohuabunwa, 2002; Yankus, 2006; Akunyili, 2007; Adeseun, 2011; FDA, 2013). The Nigerian government responded to these cases by promulgating various laws and establishing such consumer protection agencies as the Consumer Protection Council (CPC) through the Consumer Protection Council Act No 66 of 1992 (Laws of the Federation, 2005a), to address the plights of aggrieved consumers. The government also established the National Agency for Food and Drug Administration and Control (NAFDAC) through Act No 15 of 1993 (Laws of the Federation,2005b), to regulate and control the manufacture, importation, exportation, advertisement, distribution, sale and use of food, drugs, cosmetics, medical devices, chemicals and prepackaged water in Nigeria (NAFDAC, 2012).

Omenazu (2010) noted that despite the several consumer protection laws in the pharmaceutical industry and the penalties for the breaching such laws, Nigerian drug consumers still rank among the most exploited in the world. Erhun, Babalola and Erhun, (2001); NAFDAC, (2010); and Ayo-Aderele, (2013) also noted that" the drug distribution network in

Nigeria is in a state of chaos as the distribution channel for pharmaceutical products in Nigerian is under the control of mainly non-pharmacist businesspersons. Added to this, is the general absence of registered pharmacies in rural areas, which contributes greatly to the incidence of fake drugs. Akunyili, (2006); Monye,(2006); and Abubakar, (2010) linked some of the problems that consumers face in the pharmaceutical market to such demographic variables as poverty and illiteracy, which make it difficult for these consumers to identify fake products and enforce their rights.

A few related studies have been carried out on the effect of certain demographic variables on consumer perception and buying behaviour in Nigeria, For instance, Agbonifoh (1999) explored the elements of perceived risks in retail outlets, Erhun, Babalola and Erhun (2001) examined drug regulations and the challenges of fake drugs in Nigeria, while Pejas (2010) investigated consumer protection and drug marketing in Enugu State. However, to the best of our knowledge, no research work has been carried out on the effect of the selected demographic variables on consumers' perceived risk in pharmaceutical retail outlets in Edo and Delta States of Nigeria. Therefore, the expected outcome and its contribution to knowledge is the motivation for this study.

Research Objectives

The objectives of the study were as follows:

1. To ascertain the level of consumers' perceived risk in the different types of pharmaceutical retail outlets in Edo and Delta States.
2. To determine the extent to which income level affects consumer's perceived risk in pharmaceutical retail outlets
3. To establish the extent to which educational level affects consumer's perceived risk in pharmaceutical retail outlets.
4. To investigate if sex (gender) of a consumer affects his/her level of perceived risk in a pharmaceutical retail outlet.
5. To ascertain if occupation affects consumer's perceived risk in a given pharmaceutical retail outlet

Hypotheses for the Study

The following null hypotheses were tested in this study:

1. There are no significant differences in the levels of consumers' perceived risk in the different types of pharmaceutical retail outlets in Edo and Delta States.
2. The level of consumer's income have no significant effect on his perceived risk in pharmaceutical retail outlets
3. Consumer's level of education has no significant effect on his level of perceived risk in pharmaceutical retail outlets.
4. The sex (gender) of a consumer does not affect his/her level of perceived risk in pharmaceutical retail outlets.
5. The occupation of a consumer does not affect his level of perceived risk in pharmaceutical retail outlets.

Literature Review

Consumers' Perceived Risk

Agbonifoh et al (2007:167), defined consumer's perceived risk as "the risk or uncertainty to which consumers think they subject themselves when they buy or use any product." This definition was earlier elaborated in the studies on perceived risk and consumer buying behavior by Agbonifoh and Oyegunle (1987), and Agbonifoh (1999). In adopting and modifying the above definition to suit the objective of this study, this paper defines consumer's perceived risk in the patronage of pharmaceutical retail outlets as the risk or uncertainties to which consumers think they subject themselves when they patronize a particular pharmaceutical retail outlet. In this study, this risk is determined by the extent to which consumers think they will be exploited or sold fake, adulterated or counterfeit products when they patronize any pharmaceutical retail outlet

The Pharmaceutical Industry and the Concept of Consumer Protection

The pharmaceutical industry is concerned with the manufacture, importation, advertising, promotion and sale of drugs. The role of drugs in healthcare, especially in a developing country like Nigeria, cannot be overemphasized. However, a major problem facing Nigeria in her efforts at providing healthcare for her citizens is the prevalence of fake and adulterated pharmaceutical products and quacks in the pharmaceutical and medical professions {NAFDAC 2011), Indeed, Corey (2012) noted that counterfeit and adulterated medicines are a serious problem afflicting over 90 countries worldwide, including Nigeria, United States of America, Britain and Canada, and killing an estimated 700,000 people annually.

In view of the special nature of drugs, they are sold or made available to patients legally through the following outlets in Nigeria (Adelusi-Adeluyi, 2000; Edo State Ministry of Health, 2013):

i. Government Hospital Pharmacies (GHP)
ii. Private Hospital Pharmacies (PHP)
iii. Private Pharmaceutical Stores (PPS)
iv. Patent Medicine Stores (PMS)

However, NAFDAC (2012) and CPC (2012) have identified some malpractices in pharmaceutical retail outlets in Nigeria that seem to erode public confidence m the patronage of these outlets: These malpractices include sale of fake, counterfeit and adulterated drugs, repackaging and sale of expired drugs, sale of banned drugs, sate of drugs without NAFDAC registration numbers, sale of drugs with fake NAFDAC registration numbers, sale of controlled drugs to the wrong users, operation of unregistered drug stores, non-conformity to ethical pharmaceutical standards in the storage/dispensing of drugs and non-provision of drug information to patients/consumers. In view of the above malpractices, this study sought to know the level to which consumers think they will be exploited or sold fake and counterfeit drugs (perceived risk) in the various pharmaceutical retail outlets and the effect of such demographic variables as income, education, occupation and sex on the perceived risk.

Demographic variables and Perceived Risk

Agbonifoh, et al., (2007) noted, "Among the economic determinants of buyer behaviour, income stands out as the most important element". A consumer's level of income determines what he can afford and consume. High-income earners differentiate themselves by the quantity and quality of goods and services they consume and the places they patronize. Agbonifoh, et al (2007, p. 154) further noted, "Education also influences one's pattern of consumption through

its influences on one's values, occupation, social class and income." The consumer's formal educational level has also been implicated as a factor in his ability to protect himself and be protected in the market place. Hence, "only knowledgeable and alert consumers who can read and write and are aware of their rights and responsibilities can protect themselves effectively" (Agbonifoh, et al 2007, p. 698).

The Engel-Kollat - Blackwell (EKB) Model (1995) proposed four stages in consumer decision process, namely; the decision process stage, information input stage, information processing stage, and variables influencing the decision process. The model incorporated many items, which included demographic variables that influence consumer decision making such as value, lifestyle, personality, culture, finance and income.

Theoretical Framework

The concept of perceived risk is framed by the theories of consumer behavior, consumer perception and consumer buying decision processes. Hence, in finding answers to our research questions we shall rely on theinsights provided by these theories.

The dependent variable for this study is the Consumers' Perceived Risk (CPR) while the independent variables are Education (Ed), Income (In), Sex (Sx) and Occupation (Oc). In functional form, the model is depicted as follows:

CPR = t(Ed).....(i)
CPR = f(In).....(ii)
CPR = f(Sx).....(ii)
CPR = f(Oc).....(ii)
Integrating equations (i), (ii), (iii) and (iv), we get
CPR = f(Ed, In, Sx, Oc).....(v)
The variables in (v) above can be reduced to the general regression equation:
CPR = f[β01Ed + β2In + β3Sx + β4Oc + e]..... (iv)
Where

CPR	=	Consumer Perceived Risk
Ed	=	Educational level
In	=	Income level
Sx	=	Sex (gender)
Oc	=	Occupation
β	=	regression coefficient
e	=	error term

Methodology

The study was carried out using a survey research design with data collected using questionnaires. The study assumed that almost every adult Nigerian must have taken one drug or the other, or patronized one pharmaceutical retail outlet or the other in his/her adulthood. Hence, the study population comprised all adults (from 18 years and above) in Edc and Delta States. The use of Edo and Delta States_for this study was for propinquity to the place of study in addition to having a population that is representative of Nigeria's population.

Sampling

The combined population of Edo and Delta States is 7,565,793 (Census, 2005) hence using a convenient sampling method, six urban settlements (Benin City, Auchi, Ekpoma, Asaba Warri and Sapele) and six rural settlements (Ugbogwi, Ogbese, Usen, Ugbenu, Jesse and Koko) in Edo and Delta States were sampled. In selecting the settlements, the United Nations Classification of Settlements for Africa, in which settlements are classified into city, urban and rural settlements according to the following population criteria were used, (Olomo & Sajini, 2011):

Big cities - over 500,000
Cities - 100,000-500,000
Urban settlement - 20,000-100,000
Rural settlement - less than 20,000.

Sample Size

In view of the heterogeneity and geographical spread of the population and the fact that we adopted a convenience sampling method, 1,200 copies of the questionnaire were administered in Edo and Delta States, using the proportional allocation of sample size formula.

The Questionnaire

The questionnaire was composed of 15 questions/dimensions of consumers' perceived patronage risk for each of the pharmaceutical retail outlets, to which respondents were requested to respond using 5-point Likert-type scale from strongly agree, agree, not sure, disagree to strongly disagree. The calculated risk indices were thereafter compared with the computed risk indices in Table 1 to determine the levels of perceived patronage risk in each of the pharmaceutical retail outlets.

Presentation and Analysis of Data

Table 1: Computed Risk Indices

	Level of Perceived Patronage Risk	**Computated Risk Index**
1	Very Low	1.000 – 1.500
2	Low	1.501 – 2.500
3	Medium	2.501 – 3.501
4	High	3.501 – 4.500
5	Very High	4.501 – 5.000

Source: Author's Fieldwork.

Table 2: Summary of Perceived Patronage Risk Indices in Pharmaceutical Retail Outlets

S/N	**Pharmaceutical Retail Outlet**	**Perceived Patronage Risk Index**
1	Government Hospital Pharmacy Patent Medicine Stores	2.29 (Low)
2	Private Hospital Pharmacy. Private Pharmaceutical Stores	2.52 (Medium)
3	Private Pharmaceutical Stores	2.57 (Medium)
4	Patent Medicine Store	3.27 (Medium)

Source: Author's Fieldwork 2014.

Using the data from the fieldwork, the average score (risk index) for each of the 15 dimensions of risk in the questionnaire was calculated to determine the levels of perceived patronage risk for each retail outlet as shown in Table 2 above..

Data Analysis and Hypotheses testing

Multiple regression analysis, frequency distribution and analysis of variance were used in determining the relationship between the dependent variable and the independent variables.

The results revealed that consumers exhibited the highest level of perceived risk towards patent medicine stores, followed by the private pharmaceutical stores and the private hospital pharmacies. The results however showed that consumers exhibited the lowest level of perceived risk towards government hospital pharmacies.

Table 3: Model Summary of Multiple Regression Analysis (income, sex, education and occupation)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durblin Watson
					R Square Change	F Change	Df1	df2	Sig-F Change	
1	0.676	0.457	0.185	0.38189	0.049	1.680	1	2	0.324	

a. Predictor: (Constant), Sex, Education, Occupation and Income
Source: Author's Fieldwork, 2014.

From the model summary table, R = 0.676 and R^2 = 0.457. The R^2 of 0.457 suggest that in this study, these variables sex, education, occupation and income explain only 45.7 percent of the variance in the consumers' perceived patronage risk in pharmaceutical retail outlets.

Therefore, we conclude that in this study, these variables: sex, occupation, income and education do not strongly predict consumers perceived patronage risk in pharmaceutical retail outlets.

Test of Hypotheses

The significance of the differences in the perceived risks in the different retail outlets in Table 2 above was tested with the Univariate Analysis of Variance. The result gave a p-value of 0.001, which is well below the chosen alpha level of 0.05. Thus we reject the null hypothesis in support of the alternate hypothesis that perceived patronage risk does vary significarr between the different pharmaceutical retail outlets.

Table 5: Regression Coefficients

Model	Unstandardized Coefficients		Standardized coefficients	T	Sig	Correlations			Collinearity Statistics	
	B	std. Error	Beta			Zero-Order	Partial	Part	Tolerance	VIF

1	1.388	1.978		0.702	0.611					
(Constant)	0,465	0.515	0.898	0.903	0.532	0.676	0.670	0.635	0.500	2.000
Income	0,230	0.728	0.314	0.316	0.805	-0.321	0.301	0.222	0.500	2.000
per month										
Sex										
2	2.933	0.000		-	-					
(Constant),	0.208	0.000	0.401	-	-	0.676	1.000	0.253	0.400	2.500
Income	-0.028	0.000	-0,038	-	-	-0.321	-1.000	-0.025	0.444	2.250
per month	-0.258	0.000	-0,786	-	-	-0.913	-1.000	-0.703	0.800	1.250
Sex	-0.711	0.000	-0.480	-	-	-0.734	-1.000	-0.026	0.404	2.540
Occupation										
Education										

a. Dependent Variable: RISK INDEX

b. Predictor (Constant): Sex, education, occupation and income.

Source: IBM SPSS version 21

On the effect of demographic variables (consumers' educational level, income, sex, and occupation) on consumers' perceived patronage risk, the B-values in the Regression Coefficients above tell us about the relationship between consumers' perceived patronage risk in pharmaceutical retail outlets and each predictor. If the value is positive, we can tell that there is a positive relationship between the predictor and the **outcome,** whereas a negative coefficient represents a negative relationship. For these data only income had a little positive fa-value, 0.208 indicating positive relationship. Therefore, as income increases, consumers' perceived patronage risk in pharmaceutical retail outlets also increases.

In contrast sex, occupation and education had negative values -0.028 and -0.258, -0.777 respectively. In addition, the p-value of 0.0703 is greater than the chosen alpha level of 0.05. Therefore, we accept the null hypothesis and conclude that in this study, these variables-sexes, occupation and education do not strongly predict consumers perceived patronage risk in pharmaceutical retail outlets.

The general form of the equation to predict consumers' perceived patronage risk in pharmaceutical retail outlets from the variables is Risk Index = 2.933 + (0.208 x Income per month) + (-0.028 x sex) + (-0.258 x occupation) + (-0.711 x education)

Summary of Findings

This study generated the following findings:

(i) The levels of consumers' perceived patronage risk in the different pharmaceutical retail outlets are significantly different as shown by the following calculated risk indices:

Government Hospital Pharmacy (GHP) = 2.29 (Low)
Private Hospital Pharmacy (PHP) = 2.52 (Medium)
Private Pharmaceutical Store (PPS) = 2.57(Medium)
Patent Medicine Store (PMS) = 3.27 (Medium)

(ii) Demographic variables such as educational level, sex and occupation have no significant effect on consumers'patronage of pharmaceutical retail outlets.

(iii) In contrast to (ii) above, consumers' level of income has significant effect on consumers' patronage of pharmaceutical retail outlets.

Conclusion and Recommendations

On the relationship between perceived risk and selected demographic variables (income, sex, occupation and education), this study reveals that income, sex, occupation and education collectively explain 45.7% of the variance in consumers' perceived patronage risk. However, while income had positive value, suggesting that it significantly affects consumers' perceived risk, sex, occupation and education had negative values, suggesting that they do not strongly predict consumers' perceived patronage risk in this study.

This finding corroborates the previous findings by Agbonifoh (1999) and Ijewere (2005) that income-plays a significant role in consumer protection and buying processes. The finding also corroborates a previous finding by Agbonifoh (1999) that education and sex had no statistically significant relationship with perceived patronage risk. The reliability of this finding is further confirmed by the fact that it had earlier revealed that a majority of the respondents, which included the educated respondents, patronize patent medicine stores more that they patronize government and private hospital pharmacies and that their levels of perceived risk in these outlets seem not to affect their patronage of the outlets.

This study has made significant contributions to the body of knowledge on consumer protection, perceived risk and patronage of pharmaceutical retail outlets in Nigeria. These contributions include:

1) This study pioneered the provision and operationalization of a set of risk dimensions for the calculation of consumers' perceived patronage risk in pharmaceutical retail outlets.
2) This study clearly reveals that Nigerian drug consumers do not have implicit confidence in any of the pharmaceutical retail outlets. This is a major finding that should bother governments at all levels, drug dealers and consumer protection agencies in Nigeria.
3) The study was able to provide empirical evidence on the relationship between certain demographic variables and consumers' patronage of pharmaceutical retail outlets in Nigeria.
4) This study corroborated previous findings by marketing authorities on the significant role that income plays in consumer decision-making and buying processes.
5) The findings from this study have further reinforced the need for government, drug dealers, law enforcement and consumer protection agencies to step up efforts at controlling the drug markets against the manufacture, importation and sale of fake, counterfeit and adulterated products.

Based on the findings from this study, suggestions have been made for further studies to explore and contribute more to the body of knowledge on consumer protection, perceived risk and patronage of pharmaceutical retail outlets in Nigeria.

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