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Factors Explaining Consumer's Attitudes Towards Buying Counterfeit Drugs in North Cameroon

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Abstract: The purpose of this research is to identify the determinants of the attitude towards counterfeit drugs and to analyze the effect of this attitude on the purchasing behavior of Cameroonian consumers. The purchase of illicit drugs requires a better understanding of consumer behavior if the authorities are to effectively combat the development of this scourge. Data were collected by questionnaire from 696 households in the cities of septentrional zone of Cameroun. The use of regression tests on the determinants of attitude towards counterfeit drugs. The results reveal that attitude towards counterfeit drugs depends on certain socio-demographic factors, product-related factors, and psychographic factors. However, product-related factors, such as perceived quality and the price differential between the original and the counterfeit drug, are the most important. These results are similar to those of Le Roux (2015). The counterfeit drug market is resistant to anti-counterfeiting campaigns mainly because patients find relief at a lower cost.

Keywords: attitude; counterfeit drugs; perceived risk; perceived quality

JEL Classification: D11

1. Introduction

Counterfeiting, by its ever-growing scale, is today more than ever a real scourge. Counterfeit products, if they let believe by their nature that they are originals, generally have selling prices less expensive than the authentic articles (Le Roux et al, 2015). The growing demand for this type of product tells us that a counterfeit product is potentially a substitute for an original. Moreover, according to Gentry et al (2006), contrary to the popular belief that it is the middle and lower classes that consume counterfeits, even people with substantial incomes in rich countries buy them. This indicates a multitude of determinants of attitudes toward counterfeit purchases other than poverty. This work focuses on sociodemographic, product-related, and psychographic variables as determinants of consumers' attitudes toward counterfeit drug purchases (Viot C. et al., 2006). The purpose of this paper is not only to identify the determinants of consumer attitudes towards the purchase of counterfeit drugs in North Cameroon but also to demonstrate that product-related variables are the most relevant.

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2. Literature Review

Drawing its sources from psychology, the concept of attitude is nowadays widely used in the field of marketing and more precisely in the analysis models of consumer behavior. The most commonly used definition of attitude is that of Fishbein and Azjen (1975). According to these authors, „Attitude is a learned predisposition to react favorably or unfavorably to an object or class of objects.

Although there is much debate about the structure of attitude, the main theory in use today in the marketing literature is to describe an attitude in terms of three components. The first theoretical orientation on attitude structure came from the work of Rosenberg and Hovland (1960) who broke down attitude into three dimensions. According to this three-dimensional view, to know a person's attitude towards an object, one must examine at the same time the person's beliefs or knowledge about the object (the cognitive dimension), his or her feelings towards it (the affective dimension), and the intentions or behavior related to it (the conative dimension).

With the evolution of research, this three-dimensional vision of attitude has given way to a unidimensional vision (second orientation) emanating from the work of Lutz (1991). This vision of attitude corresponds essentially to the affective dimension. Thus it is distinguished from the beliefs and intentions of the individual towards the object in question. According to this vision, attitude corresponds to a mediating variable between beliefs and intentions. However, the debate remains unresolved. It should be noted that within the framework of this study, the first vision of the attitude is retained. Thus, the attitude of a person towards an object will be reflected by his favorable or unfavorable feelings towards the latter and to the behaviors about the attitude object. This work is then interested in the conative dimension. According to Viot C. et al, (2006), the explanatory variables of the attitude are of 3 orders:

Socio-demographic Variables

Demographic changes, as well as changes in consumer purchasing behavior, impact the opportunities and threats in a market. Concerning socio-demographic variables that can influence the purchasing behavior of counterfeit products and services, four variables are commonly used. These are age (more maturity and experience), level of education (more insight, greater openness, better analytical ability, and greater volume of knowledge), household income (more margin), and gender (Wee et al., 1995).

While it is natural to consider that attitudes towards the purchase of a product depend on age, salary, income, occupation, and many other variables, it should be noted that attitudes vary according to the type of product. Working on counterfeit drugs leads us to postulate in this article that: socio-demographic variables affect the consumer's attitude towards the purchase of counterfeit drugs. Specifically, the older the consumer, the more unfavorable his or her attitude toward counterfeit drugs; the higher the level of education, the more unfavorable the attitude toward counterfeit drugs; the higher the level of income, the more unfavorable the consumer's attitude toward counterfeit drugs.

2.1. Product-related Variables

Two variables are considered: price and perceived quality. In their study on counterfeit luxury brands, Phau et al (2008) highlights the relationship between price and perceived quality. According to these authors, some buyers give more importance to the price than to the quality of the counterfeit good. For

them, the advantage provided by a lower price compensates for the loss in quality or performance of the product. Thus, according to these authors, buyers who give more importance to the price than to the quality of the product will have a favorable attitude towards the purchase of counterfeit products. Thus, the purchase of counterfeit drugs at a lower cost can nevertheless relieve the disease.

Fear of poor quality is a disincentive to purchase counterfeit products, while on the other hand, a small perceived quality differential between the original and the copy encourages the purchase of fakes (Tom et al, 1998: Cordell et al, 1996). These authors show that the more comparable the expected performance of a product is to the original, the greater the likelihood of purchasing counterfeit products. However, the consumer is not always able to evaluate the difference in quality between the fake and the original (Gentry et al, 2006). Thus, depending on the information available to them, consumers will choose among intrinsic and extrinsic attributes specific to a product category to form their judgment about the quality of a given product.

In the present study, the consumer's perceived quality could influence his or her attitude toward the purchase of the counterfeit drug. Indeed, original products are often distinguished from counterfeit products by their superior quality. Consumers who value the quality of the products they purchase would therefore have a more negative attitude towards counterfeit products. Tom et al (1998); Cordell et al (1996); Le Roux et. al. (2015) have shown that quality positively influences the attitude towards buying counterfeit products.

Consumers who perceive counterfeit products to be of poor quality might be expected to have an unfavorable attitude toward such products.

Thus, it is postulated that: the perceived difference in quality between the original and counterfeit products has a positive influence on the consumer's attitude toward purchasing counterfeit drugs.

Psychographic Variables

Risk decisions always involve a choice between several alternatives (presence of uncertainty), each characterized by a variety of attributes. Since the outcome of this choice can only be known in the future, the consumer is forced to accept a (more or less significant) degree of risk. This uncertainty varies according to the considerations associated with the product (the possibility of choosing between several brands/distribution channels, the value of the product, the method of payment, etc.). This uncertainty also varies from one consumer to another depending on their degree of confidence (or lack thereof) in their ability to make the right consumption choice.

Perceived risk is a central construct in marketing, which suggests that consumers seek to reduce the uncertainty and negative consequences of their purchasing decisions (Bauer, 1960). Individuals face risk when a decision or action produces social or economic consequences that cannot be accurately estimated. Perceived risk is multidimensional (ethical, psychosocial, legal, and physical), and has a major influence on consumer attitudes.

3. Methodology

Many variables must be measured to answer the proposed problem. Two possibilities are considered, depending on the progress of previous research: The creation of measurement scales adapted to the concepts studied following Churchill's (1979) paradigm and the use of scales implemented in previous research. The creation of scales is justified only when those available do not correspond to the conceptual expectations or when they show a lack of effectiveness, i.e. reliability and validity. The use of multi-item measurement scales allows the operationalization of the determinants of attitude towards counterfeiting (legal risk, ethical risk, psychosocial risk, perceived quality, price, and socio-demographic variables). Therefore, we will present and justify the choice of these scales and their scoring system selected from the marketing literature. The measurement items for each construct are presented in the questionnaire on a 5-level Likert scale (Strongly disagree; somewhat disagree; Neutral; somewhat agree; strongly agree).

The application of PCA on the psychographic variable items (Appendix 1) reveals that the KMO index is 0.822 indicating a strong correlation between the items. Then, Bartlett's test of sphericity is significant ($P< 0.000$) and reflects the probability of making an error by rejecting Ho (the correlation matrix is equal to the identity matrix) which confirms that the use of a principal component factor analysis is largely justified.

The quality of representation of the indicators measuring the different risks is good since all the items have values well above the minimum threshold of 0.5.

As for the reliability of the scale, Cronbach's alpha is all between 0.870 and 0.998 indicates that the scale has good internal consistency reliability. The value 0.998 may indicate that there are too many items; however, all our items come from the literature review. This is why we chose to keep them in the work.

The application of the PCA to this scale of measurement allows us to identify four factors following the Kaiser rule of eigenvalues greater than 1 which explain 95.759 of the total variance of the sample. Similarly, the items selected have a high community, as they are greater than 0.5, except for an ethical risk item which is 0.444 (If I bought a counterfeit drug, I would feel guilty). The psychographic dimension is divided into four distinct factors that we have named: ethical risk (7 items), psychosocial risk (6 items), legal risk (5 items), and physical risk (2 items).

The application of the eigenvalue criterion led us to keep two main components, namely perceived quality and perceived low price, which explain 94.134 of the initial variance. The PCA shows that the five items are on the perceived quality dimension and 3 items on the price dimension and that the internal consistency of the scale is acceptable. The Cronbach's coefficient is close to 0.9, so its level is very satisfactory. The scale has good internal consistency reliability.

It should be noted that at the beginning, the „attitude towards counterfeit drugs" scale was composed of seven items. The representation quality for the item „I have ever knowingly purchased counterfeit products" was 0.092 and for the item "I also frequent illicit markets for other purchases" was 0.304. These values were lower than 0.5. We sought to find the item or items to be eliminated to improve the reliability of the scale.

We, therefore, begin the analysis of the validity and reliability of the scale composed of five items. First, the KMO index being 0.640 is higher than 0.50, indicating a good correlation between the items. Second, concerning the Bartlett test, the probability of making an error by rejecting Ho (the correlation matrix is equal to the identity matrix) is very low (00.000) which confirms that the use of a principal component factor analysis is largely justified. Finally, the rule of the eigenvalue > 1, as well as that of the elbow, we obtained two components: the first one made up of 3 items is named "attitude towards counterfeit drugs" and the second component made up of 2 items is named "attitude towards the purchase of counterfeit drugs". As for the reliability of the scale, Cronbach's alpha is respectively 0.8560 and 0.834. This indicates that the scale is reliable. The measurement scales of our two components are good.

4. Presentation of the Results

Attitude towards buying counterfeit drugs is more influenced by product-related variables including perceived quality and price differential. Before carrying out the regression on our different variables, we first check the strong linear dependence between our variables. We find that there is no risk of multicollinearity between the explanatory variables, we proceeded directly to the regression and the result is recorded in the following table.

Table 1. Test of the Relationship between the Determinants and the Attitude Towards the Purchase of Counterfeit Drugs

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	Alpha	Standard error	Bêta		
Constant	-1,983***	0,070		-28,143	0,000
physical risk	-0,186**	0,076	-0,372	-2,436	0,015
legal risk	-0,014	0,013	-0,027	-1,086	0,278
ethical risk	-0,008	0,088	-0,016	-0,093	0,926
psychosocial risk	-0,073***	0,028	-0,070	-2,572	0,010
perceived price differential	0,332**	0,138	0,665	2,404	0,016
perceived quality	0,355**	0,156	0,711	2,271	0,023
Age	-0,069***	0,012	-0,152	-5,798	0,000
Education level	-0,152***	0,014	-0,316	-10,576	0,000
Income level	-0,304***	0,010	-0,877	-30,917	0,000
Sex	-0,002	0,087	-0,003	-,019	0,985
R^2	0,605				
Adjusted R^2	0599				
F-Stat Pvalue	0 ,000				

Notes: the dependent variable is attitude towards buying counterfeit drugs. ***, ** and * indicate statistical significance at 1%; 5% and 10% levels respectively.
Analysis of the overall significance of the model

R2= 0.605 which explains that the variability of these factors explains 60 .5% of the variability of the attitude towards the purchase of counterfeit drugs, i.e. nearly 39.5% of this variability is explained by other factors that are not taken into account in this model. However, the Fisher probability is equal to 0.000 < 5%. This explains the overall significance of the model at 5%.

- Individual significance of the model parameters

The price differential and the perceived quality have a significant and positive influence on the attitude towards counterfeit drugs because their sig < 5% being respectively 0.016 and 0.023. These results are consistent with the work of Tom et al (1998); Cordell et al (1996); and Gentry et al (2006).

We also note from this table that perceived quality with a coefficient equal to 0.3555 followed by price differential with a coefficient of 0.3 32 are the factors that best explain the attitude towards the purchase of counterfeit drugs and which are both product-related variables. These results are in line with the work of viot et al (2015), Penz and Stottineger (2005) who showed that the more comparable the expected performance of a product to the original, the greater the likelihood of buying counterfeit drugs. it is also worth noting that the contribution of price to explaining the attitude towards buying counterfeit drugs is slightly larger. These findings are consistent with those of Tom et al (1998). In light of the above, we find that the favorable attitude toward counterfeit drugs among Cameroonian consumers increases with the perception that the quality of these products is good.

5. Conclusion

This work has contributed to the study of the consumption behavior of counterfeit products. It focused on consumer attitudes toward the purchase of counterfeit drugs to better understand what leads individuals to resist anti-counterfeit drug campaigns or the sale of drugs on illicit markets. This study highlighted key determinants of consumer attitudes towards counterfeit medicines. It reveals that product-related factors, notably perceived quality and the price differential between the original and the counterfeit drug, are the most explanatory of the attitude towards the purchase of counterfeit drugs.

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Appendixes

Appendix 1: Summary of the PCA on the items of the attitude variable			
Component matrix after rotation			Quality of representation
Items	Components		
	Attitude towards counterfeit drugs	Attitude towards buying counterfeit drugs	
I am against the fight against counterfeit drugs	0,929	0,060	0,868
I like counterfeit drugs	0,924	0,030	0,854
I see no harm in keeping counterfeit drugs	0,767	-0,102	0,599
I like to own counterfeit drugs.	0,117	0,803	0,659
I like to buy counterfeit drugs.	-0,135	0,801	0,659
Eigenvalue	2,338	1,302	
of variances	46,752	26,034	
Cumulative % Variance Explained	26,034	72,786	
Alpha of Cronbach	0,856	0,834	
KMO= 0,640 **Bartlet =** 10 **P = 0.000** **Khi-2=**1286,077			

Appendix 2: Summary of the PCA on the items of the product-related variables			
Items	Components		Quality of representation
	Perceived quality	price	
There is no difference in quality between the counterfeit drug and the original.	0,937	0,320	0,981
Counterfeit drugs are as good as the original products.	0,937	0,320	0,980
The difference in quality between the original and counterfeit drugs is minimal.	0,934	0,318	0,975
Counterfeit drugs are as good as the originals.	0,930	0,314	0,964
The difference in effectiveness between the original and counterfeit drugs is small.	0,741	0,320	0,652
Counterfeit drugs are less expensive than the originals.	0,330	0,940	0,993
Counterfeit drugs are an alternative and cheaper than original drugs.	0,334	0,939	0,994
The prices of the original medicines are abusive	0,336	0,939	0,993
Eigenvalue	6,208	1,322	
of variances	77,606	16,528	
Cumulative % Variance Explained	77,606	94,134	

Alpha of Cronbach	0,875	0,897	
KMO= 0,867 **Bartlet** = 28 **P = 0.000** **Khi-2=** 14666,874			

Appendix 3: Summary of the PCA on the psychographic variable items

Items	Components after relationship vari max				**Quality of representatio**
	ethical risk	**Psychos ocial risk**	**juridial risk**	**Physical risk**	
Counterfeit drugs are reserved for people of little consideration	**0,874**	0,317	0,362	-0,014	**0,997**
Buying counterfeit drugs makes me feel bad.	**0,874**	0,318	0,359	-0,018	**0,995**
I don't like buying counterfeit medicine because I don't know where it comes from	**0,874**	0,317	0,357	-0,014	**0,993**
I don't like buying counterfeit drugs because it makes me feel bad about myself.	**0,872**	0,312	0,364	-0,015	**0,989**
I don't like to buy counterfeit medicine because it makes others feel bad about me.	**0,870**	0,316	0,363	-0,017	**0,989**
If I were to buy counterfeit medicine, I would feel uncomfortable.	**0,870**	0,320	0,364	-0,011	**0,992**
I would be ashamed to own/carry counterfeit medicine.	**0,869**	0,315	0,364	-0,019	**0,987**
I don't like to buy counterfeit medicine because I feel I am encouraging counterfeiting	0,284	**0,931**	0,212	0,013	**0,994**
I don't like to buy counterfeit drugs because of the Enbarras when buying them	0,284	**0,930**	0,216	0,015	**0,993**
I do not like to buy counterfeit drugs because they are unfair competition	0,284	**0,929**	0,214	0,021	**0,990**
I don't like to buy counterfeit drugs because I am afraid of the judgement of those around me	0,287	**0,929**	0,215	0,018	**0,992**
I don't like to buy counterfeit medicine because I don't know who made it	0,283	**0,928**	0,214	0,019	**0,988**
I don't like to buy counterfeit drugs because I am afraid that others will find out.	0,283	**0,927**	0,219	0,015	**0,988**
People who sell counterfeit drugs are committing a crime.	0,405	0,255	**0,872**	0,050	**0,992**
I don't like to buy counterfeit drugs because of the penalties.	0,405	0,251	**0,872**	0,047	**0,988**
I don't buy counterfeit drugs because of the risk of seizure.	0,399	0,253	**0,871**	0,050	**0,985**
People who buy counterfeit drugs are committing a crime.	0,398	0,249	**0,870**	0,056	**0,981**
People who sell counterfeit drugs are committing a crime.	0,400	0,248	**0,869**	0,053	**0,979**
Counterfeit medicines can be dangerous for those who use them.	0,064	-0,068	-0,026	**0,837**	**0,710**
There may be a risk of disease complication during consumption	0,110	-0,109	-0,133	**0,768**	**0,632**
Eigenvalue	**13,655**	**2,774**	**1,588**	**1,135**	
of variances	**68,27**	**13,868**	7,942	5,673	
Cumulative % Variance Explained	**68,27**	**82,14**	**90,086**	**95,759**	
Alpha of Cronbach	**0,887**	**0,896**	**0,898**	**0,870**	
KMO= 0,822 **Bartlet = 190** **P = 0,000** **Khi-2= 50946,235**					