



A Study Of The Purchase And Consumption Of Counterfeit Drugs In Ghana: The Case Of Marketing Students In Sunyani Polytechnic?

Samuel Yeboah Asuamah

Marketing Department, Sunyani Polytechnic,
Ghana, West Africa

Vida Owusu-Prempeh

Marketing Department, Sunyani Polytechnic,
Ghana, West Africa

Cosmos Antwi-Boateng

Commercial Studies Department, Sunyani Polytechnic,
Ghana, West Africa

Abstract:

The aim of the paper is to contribute to the body of knowledge in the area of drugs production and marketing by examining respondent's attitude towards counterfeit drugs and the factors influencing the purchase of counterfeit drugs by consumers. The research design is quantitative cross sectional survey using sample of 198 students of the marketing department selected through convenience sampling method. Primary data was collected using self-designed questionnaire and administered during lecture periods. Data was analysed using frequencies, percentages and One-Way Analysis of variance (ANOVA) and presented in Tables. Few respondents purchase counterfeit drugs but are suspicious of the quality of drugs purchased. Respondents have negative attitude towards counterfeit drugs. Price and the look of pharmacy are used to evaluate the quality of drugs. Factors such as lack of information on quality of drugs, non-availability of quality drugs, ignorance of health implication and poverty influence the purchasing behaviour. Demographic variables such as gender, age, family income levels, religion significantly influence variations in responses provided by respondents. Manufacturers and marketer of drugs should incorporate these findings into their strategies in selling drug. Future study should increase the sample size in a causal study.

1. Introduction

Counterfeit and substandard drugs have been an issue in both developed and developing economies (Ibrahim & Ali, 2013, Yankus, 2009, Bird, 2008, Lybecker, 2007 and Liang, 2006). This has been a worry for governments, health practitioners, policy makers, marketers and economists. The problem according to the literatures is more severe in the low income economies or developing economy where few empirical works have been done on the demand side of attitude towards counterfeit drugs.

Aside the health implications of counterfeit drugs local manufacturers are affected with the influx of counterfeit drugs in loss of revenue. The government also loose in tax revenue while as citizens also loose as a results of inadequate jobs. For example, in Kenyan counterfeits cost Kenyan Small and Medium Enterprises (SMEs) 50 billion shillings (\$650 million) and the government 19 billion shillings (\$250 million) in taxes in 2008 (Wanjau & Muthiani, 2011). According to some researcher there is huge profit for the producers of counterfeit drugs in an economy since it is not easy to distinguish counterfeit drugs from genuine (Kontnik, 2004).

According to Dondorp et al. (2004) 53% of the 188 tablet packs purchased in Southeast Asia under the label of artesunate drug for the treatment of malaria did not contain any artesunate. Newton et al. (2001) in earlier studies established that 38% of 108 drug samples were counterfeit drugs.

World Health Organisation (WHO) in 2009 using a sample of 491 anti-malaria drugs from Africa found high failure rates in all of the three sample countries in the study. These results indicate an increase in the problem of counterfeit. According to Harris et al. (2009) counterfeit drug has caused the death of 700, 000 people in the treatment of malaria and tuberculosis every year in Africa.

According to researchers (Bate et al., 2011; Marcketti & Shelley, 2009; Liang, 2006; Bang et al., 2000) what makes the problem serious is the fact that consumers are not able at all times to identify the counterfeit and substandard drugs. Bate et al. (2011) indicates that consumers use price and the look of the pharmacy “good” or “poor.” To determine the quality of drugs which does not guarantee their safety at all times? According to them “the 13-18% lower price for failing drugs, as well as the information contained in innovator brand and pharmacy appearance, suggests that consumers are likely to suspect lower quality when they pay less.

Various reasons have been provided by researchers (see Bate et al. 2011 and Vida, 2007) as to why consumers will purchase counterfeit and substandard drug. Among the reasons are poverty; ignorance and the belief that some inferior drugs work. Bate et al. (2011) stated that the “price differential between failing and non-failing drugs (controlling for other factors) is about \$0.59-0.82, which could be substantial for a country like India where more than 40 percent of the population lives on less than \$1 a day”.

The theories on the purchase of counterfeit products can be traced to the works of Grossman and Shapiro (1988) and Chakraborty et al. (1996). There are two schools of thought. According to these economists, people purchase counterfeit products when they are not aware that the products are inferior goods. That is they know they are buying good goods (Bate et al., 2011 and Vida, 2007). The other school of thought indicates that consumers who buy counterfeit drugs are aware of the fact that the goods are inferior. This call for further empirical researcher to examine why consumers will purchase inferior drugs if they actually do so given the implications of such goods.

According to Bate et al. (2011) those who purchase inferior goods when they are aware do so as a results of the ‘status’ they enjoy for using those products. They indicated that this does not hold for the use of drugs. A consumer will not buy fake drugs as a result of ‘status’.

Studies have identified the factors that encourage the influx of counterfeit drugs into an economy. Among the factors identified by studies (Bate, et al, 2011; Kibwage, 2008; Opiyo, 2006) are weak legal framework, consumers’ attitude towards counterfeit medicines and higher prices charged on imported drugs which are not counterfeit. Wanjau and Muthiani (2012) established that counterfeit drugs influx Kenyan economy due to factors such as pricing, risk, perception, legislation, brand, value, quality, complaints, damage, consumer ignorance, tactics, protection and penalties.

On the determinants of the consumption of counterfeit products, various demographic and socio-economic variables have been identified as influencing the consumption of goods such as mobile phones, cosmetics; cloths pirated CDs by researchers (Norum & Cuno, 2011; Chen & Tang, 2006; Singhapakdi, 2004; Kwong et al., 2003; Cole and Smith, 1996). Among the variables identified are age, gender, educational level and income. But little have been done in the consumption of drugs. These will be investigated in the paper.

Various measures are used to identify the quality of drugs in the literature. Among the measures are the price, quality and the type of outlet from which the products are bought (Bate et al., 2011 and Vida, 2007). These measures are examined in the current study.

1.1. Statement of Problem, Justification and Significance

Ghana is one of the middle income countries that are faced high with counterfeit products including drugs. These drugs are sold at the pharmacy shops; chemical shops, at the markets and in bus. In view of these the researchers investigate why consumers buy counterfeit drugs in the face of the risks that are associated with the consumption of counterfeit drugs. In the knowledge of the researchers very few empirical works exist in literature (Ibrahim & Ali, 2013 and Penz & Stottinger, 2005) and there is no known empirical work in the study area. The paper fills in the gap and contributes to literature.

The findings contribute to explanations on theories of consumption of deceptive and non-deceptive products and also serve as reference material for future researchers in similar area of research. The findings also provide policy guide to policy makers on how to solve the production of counterfeit products in the economy.

1.1. Global Objectives/Specific Objectives

The paper contributes to the body of knowledge that exists in the area of demand for Counterfeit goods by investigating the reasons behind the purchase of counterfeit drugs. Specifically, the paper investigates to determine consumers attitude towards the purchase of counterfeit drugs and why? The effect of demographic and socio-economic variables on the attitude towards demand for counterfeit drugs is also investigated.

1.3. Research Questions and Assumptions:

The paper is based on the research questions which are:

- Why consumers purchase counterfeit drugs if they do?
- How does demographic and socio-economic variable affect consumer purchase decisions on counterfeit drugs?

Answers are provided for these questions using survey data collected from respondents who are students and buy drugs from various outlets where drugs are sold. The paper is based on the assumption that consumers are not aware that the drugs they purchase are inferior.

2. Research Methodology

The paper is based on explorative, quantitative, cross-sectional survey using 200 respondents selected through purposive sample method. The target population is the students in marketing one and two in Sunyani Polytechnic.

Data collected were analysed using percentages, means, and standard deviation, skewness for descriptive statistics and One-way Analysis of Variance (ANOVA) for the inferential statistics. Results were presented in tables and Charts.

The findings of the paper are limited by the use of survey data. Some respondents might have been biased with their responses. The paper does not look at the demand for other counterfeit goods such as cloths pirated CDs. It does not also focus on strategies to solve the influx of counterfeit drugs into the country. Data are not collected from all parts of the school.

3. Results And Discussions

The results and discussions are provided in this section of the paper. The demographic profiles are provided in Table 1. Majorities are males and the age distribution indicates that most respondent's falls in the age group of 23-27. Most of them are from Ashanti regions where as majority are in second year. The rest of the results are shown in Table 1.

| Variables | Frequency | Percentages (%) |
|-------------------|-----------|-----------------|
| Gender | | |
| Male | 128 | 64.6 |
| Female | 67 | 33.8 |
| Missing responses | 3 | 1.3 |
| Total | 198 | 100.0 |
| Age | | |
| Less than 18 | 3 | 1.5 |
| 18-22 | 88 | 44.4 |
| 23-27 | 102 | 51.5 |
| 28-32 | 4 | 2.0 |
| Above 42 | 1 | 0.5 |
| Total | 198 | 100.0 |
| Region | | |
| Brong Ahafo | 40 | 20.2 |
| Ashanti | 74 | 37.4 |
| Western | 19 | 9.6 |
| Eastern | 13 | 6.6 |
| | 8 | 4.0 |

| | | |
|-----------------------------|-----|-------|
| Volta | 12 | 6.1 |
| Greater Accra | 4 | 2.0 |
| Central | 13 | 6.6 |
| Northern | 7 | 3.5 |
| Upper east | 8 | 4.0 |
| Upper west | 198 | 100 |
| Total | | |
| Year in school | 88 | 44.4 |
| First year | 110 | 55.6 |
| Second year | 198 | 100.0 |
| Total | | |
| Religion | 4 | 2.0 |
| No religion | 174 | 87.9 |
| Christian | 18 | 9.1 |
| Muslim | 1 | 0.5 |
| Other religion | 1 | 0.5 |
| Missing responses | 198 | 100.0 |
| Total | | |
| Family income status | 30 | 15.2 |
| Low | 25 | 12.6 |
| High | 116 | 58.6 |
| Medium | 27 | 13.6 |
| I don't know | 198 | 100.0 |
| Total | | |
| Personality type | 82 | 41.4 |
| Individual | 89 | 44.9 |
| Collectivistic | 26 | 13.1 |
| I don't know | 1 | 0.5 |
| Missing responses | 224 | 100.0 |
| Total | | |

Table 1: Distribution of responses on Demographic features

3.1. Purchase of and consumption of counterfeit drugs:

Respondents were asked whether they purchase counterfeit drug. Majority (62.1%) of the respondents do not purchase counterfeit drug. Most (46.0%) respondents do not know persons who have ever purchased counterfeit drug. Most respondents (47.5%) indicated that they have ever suspected drugs they have purchased as counterfeit. Respondents were asked if they examine drug purchase for quality. Majority (75.8%) of the respondents inspect drugs for quality prior to purchase. The results are shown in Table 2.

| Variables | Frequency | Percentages (%) |
|--|-----------|-----------------|
| I have purchase counterfeit drugs in the past before | 31 | 15.7 |
| ➤ Yes | 123 | 62.1 |
| ➤ No | 39 | 19.7 |
| ➤ I don't know | 5 | 2.5 |
| ➤ Missing response | 198 | 100.0 |
| ➤ Total | | |
| Do you inspect the quality of drugs before purchase | 150 | 75.8 |
| ➤ Yes | 22 | 11.1 |
| ➤ No | 20 | 10.1 |
| ➤ I don't know | 6 | 3.0 |
| ➤ Missing responses | 198 | 198 |
| ➤ Total | | |
| Have you ever suspected a drug purchase as counterfeit | 94 | 47 |
| ➤ Yes | 82 | 41.4 |
| ➤ No | 15 | 7.6 |
| ➤ I don't know | 7 | 3.5 |
| ➤ Missing responses | 198 | 100.0 |
| ➤ Total | | |
| Do you know any person who has purchase counterfeit drugs | 84 | 42.4 |
| ➤ Yes | 91 | 46.0 |
| ➤ No | 15 | 7.6 |
| ➤ I don't know | 8 | 4.0 |
| ➤ Missing responses | 198 | 100.0 |
| ➤ Total | | |

Table 2: results on counterfeit drugs

(Source: field survey, March, 2013)

3.2. Measures of drug quality:

Respondents indicated their measure of drug quality by way of ranking. The results are shown in Table 3. The most important measure of quality according to the respondents is the price of product. This is consistent with the theory of irrational behaviour which indicates that irrational consumers confuse price with quality. The results are in support of the findings of researchers such as Bate et al. (2011) who reported that consumers use price to determine the quality of drugs purchased. The higher the price the more quality the drug is and the lower the price the less quality the drug.

| Measures | Frequency | Percentages |
|----------------------------|-----------|-------------|
| Price of drug | 122 | (61.6%) |
| The 'look of the pharmacy' | 83 | (42%) |
| I do not use any of these | 42 | (21.2%) |

Table 3: Distribution of ranked responses on measure of drug quality

(Source: field survey, March, 2013)

3.3. Sources of information on drug quality:

Respondents indicated their source of information on drug quality by indicating the ranks of the sources. Five main sources were identified. The most important source of information is self-inspection followed by government agency. The results are shown in Table 4

| Sources | Frequency | Percentages |
|--------------------------|-----------|-------------|
| Self-inspection | 118 | 59.6% |
| Government agency | 115 | 58% |
| Paper (graphic/magazine) | 100 | 50.0% |
| Word-of-mouth | 97 | 49% |
| Market cues | 87 | 43.9% |

Table 4: Distribution of ranked responses on source information on drug quality

(Source: field survey, March, 2013)

3.4. Reasons people purchase counterfeit drugs:

The reasons people purchase counterfeit drugs were identified by respondents. The results are shown in Table 5. Five main reasons were identified as motivation for the purchase of counterfeit drugs. The most important reason is lack of information on the quality of counterfeit drugs. Majority (59%) of the respondents disagreed that people purchase counterfeit drugs because some of the drugs work.

These findings are consistent with the empirical findings of previous research which reported that consumer purchase inferior drugs as results of poverty and ignorance of the health implications. The findings are also consistent with theoretical explanation of the reasons why consumers purchase inferior drugs. The theories (Chakraborty et al., 1996

and Grossman & Shapiro, 1988) indicate that consumer purchase inferior drugs since they are not aware of what they are purchasing in relation to quality.

| Sources | Frequency | Percentages |
|--------------------------------------|-----------|-------------|
| Lack of information on quality drugs | 159 | 80.3% |
| Non-availability of quality drugs | 159 | 80.3% |
| Ignorance of health implication | 137 | 69.2% |
| Poverty | 132 | 66.6% |

Table 5: Distribution of ranked responses on reasons of the purchase of counterfeit drugs

(Source: field survey, March, 2013)

3.5. Attitude towards counterfeit drugs:

Respondents attitude towards counterfeit drugs were examine using Likert scale. The ranks of positive responses (strongly agreed/agreed) on the various questions are shown in the Table 6. The results indicate that respondents have positive attitude towards genuine drugs and a negative attitude towards counterfeit drugs. Most respondents (84.4%) agreed that people who sell counterfeit drugs are committing a crime; Counterfeit drugs hurt the companies that manufacture the legitimate drug (70.2%) and people who buy counterfeit drugs are committing a crime (48.5%).

| Attitude Towards Counterfeit Drugs | Frequency | Percentage (%) |
|---|------------------|-----------------------|
| People who sell counterfeit drugs are committing a crime. | 167 | 84.4 |
| Counterfeit drugs hurt the companies that manufacture the legitimate drug | 139 | 70.2 |
| People who buy counterfeit drugs are committing a crime. | 96 | 48.5 |
| “Counterfeit products have been discussed in my classes.” | 72 | 36.4 |
| Purchase of counterfeit drugs is a way of getting back at uncaring and unfair “big business organisations” | 45 | 22.7 |
| People who buy counterfeit and substandard drugs are aware that they are buying counterfeit drugs | 35 | 17.7 |
| I buy counterfeit drugs because the prices of original drugs are unfair and gouge | 34 | 17.2 |
| Counterfeit drugs do not hurt the economy | 26 | 13.2 |
| I like counterfeit drugs because they demonstrate initiative and ingenuity on the part of the counterfeiters | 24 | 12.1 |
| I like buying counterfeit drugs because it’s like playing a practical joke on the manufacturer of the non-counterfeit drugs | 22 | 11.1 |
| I buy counterfeit drugs because counterfeiters are “little guys” who fight big business | 22 | 11.1 |
| I would buy counterfeit drugs even if I could easily afford to buy genuine drugs | 20 | 10.1 |
| Buying counterfeit drugs demonstrates that I am a wise shopper | 13 | 6.5 |
| Counterfeit drugs are just as good as original drugs | 12 | 6.0 |

Table 6: Distribution of ranked responses on attitude towards counterfeit drugs

(Source: field survey, March, 2013)

3.6. Results on variation in responses

One-way ANOVA was used to analyse the variation in response given by respondents in relation to the independent variables (gender, age, region, year in school, religion, family income level and personality type). There are statistical significant (at 1%, 5%, and 10%) variations in some responses in relation to Gender, age, religion, region, year in school, personality type and family income. The results are show in Tables 7 to 13.

The findings are consistent with earlier research (Norum & Cuno, 2011; Chen & Tang, 2006; Singhapakdi, 2004 and Kwong et al., 2003) on the effect of demographic variables on the purchase of counterfeit goods. Consumer purchase inferior goods as results of demographic variables such as age, gender, educational level and income. Very few empirical works have been done and the findings in the current works add to the empirical literature.

| STATEMENTS | F -VALUES | P-VALUES |
|--|-----------|----------|
| Self-inspection of drug quality | 11.927 | 0.001 |
| The look of the pharmacy good or poor | 4.208 | 0.042 |
| Poverty | 5.324 | 0.022 |
| People who sell counterfeit drugs are committing a crime | 7.090 | 0.008 |
| Counterfeit drugs hurt the companies that manufacture the legitimate drug | 3.395 | 0.067 |
| I buy counterfeit drug because the prices of original drugs are unfair and gouge | 3.002 | 0.085 |

Table 7. ANOVA results on effect of gender on responses to questions

| STATEMENTS | F -VALUES | P-VALUES |
|---|-----------|----------|
| Buying counterfeit drugs is a way to get back at uncaring and unfair bid business | 2.967 | 0.021 |

Table 8. ANOVA results on effect of age on responses to questions

| STATEMENTS | F -VALUES | P-VALUES |
|--|-----------|----------|
| Word –of-mouth | 1.886 | 0.056 |
| Do you know any person who has purchase counterfeit drugs | 2.179 | 0.025 |
| I found out quality of drug from price | 1.713 | 0.089 |
| Ignorance of health implication | 2.028 | 0.038 |
| Lack of information on quality drug | 1.796 | 0.072 |
| People who sell counterfeit drugs are committing a crime | 2.077 | 0.034 |
| I like counterfeit drug because they demonstrate initiative and ingenuity on the part of the counterfeiter | 1.765 | 0.078 |

Table 9. ANOVA results on effect of region on responses to questions

| STATEMENTS | F -VALUES | P-VALUES |
|--|-----------|----------|
| Do you know any person who has purchase counterfeit drugs | 2.576 | 0.079 |
| People who buy counterfeit drugs are committing a crime | 3.440 | 0.034 |
| Buying counterfeit drug is a way to get back at uncaring and unfair big business | 2.396 | 0.094 |
| Counterfeit products have been discussed my classes | 2.511 | 0.084 |

Table 10. ANOVA results on effect of year on responses to questions

| STATEMENTS | F -VALUES | P-VALUES |
|---|-----------|----------|
| I inspect drugs I buy for quality | 2.428 | 0.067 |
| Do you know any person who has purchase counterfeit drugs | 2.317 | 0.077 |
| People who buy counterfeit drugs are committing a crime | 3.375 | 0.020 |
| People who sell counterfeit drugs are committing a crime | 3.921 | 0.010 |
| Counterfeit drugs hurt the companies that manufacture legitimate drugs | 3.914 | 0.010 |
| I like counterfeit drugs because they demonstrate initiative and ingenuity on the part of the counterfeiter | 2.277 | 0.081 |

Table 11. ANOVA results on effect of religion on responses to questions

| STATEMENTS | F -VALUES | P-VALUES |
|--|-----------|----------|
| Self –inspection is used for drug quality | 3.613 | 0.014 |
| I have bought counterfeit drug in the past year | 2.317 | 0.012 |
| Drug purchased is inspected for quality | 3.150 | 0.026 |
| Do you know any person who has purchase counterfeit drug | 3.038 | 0.030 |
| Counterfeit drugs do not hurt the economy | 3.645 | 0.014 |
| Counterfeit drugs hurt the companies that manufacture legitimate drugs | 2.899 | 0.036 |
| I like buying counterfeit drugs because it's like playing a practical joke on the manufacturer of non-counterfeit drugs. | 2.317 | 0.077 |
| Counterfeit drugs are just as good as original drugs | 2.466 | 0.064 |

Table 12. ANOVA results on effect of family income status on responses to questions

| STATEMENTS | F -VALUES | P-VALUES |
|--|-----------|----------|
| Market cues are used to measure quality | 2.288 | 0.080 |
| I inspect for the quality for drugs I purchase | 8.343 | 0.000 |
| Have you ever suspected a drug you purchased as counterfeit | 2.802 | 0.041 |
| Do you know any person who has purchase counterfeit drug | 3.009 | 0.032 |
| The look of the pharmacy (good or poor) is use to measure quality | 3.092 | 0.028 |
| Lack of information on quality drug | 2.204 | 0.089 |
| I would buy counterfeit drugs even if I could easily afford to buy genuine drugs | 3.650 | 0.014 |
| Buying counterfeit drugs demonstrates that I am a wise shopper | 2.375 | 0.071 |

Table 13. ANOVA results on effect of personality type on responses to questions

4. Conclusions and Policy Implications:

The aim of the paper has been achieved on counterfeit drugs. Few consumers purchase counterfeit drugs with most of them suspecting the quality of drugs they purchase. Respondents examine drugs they purchase for quality. The most important sources of information on the quality of drug are self-inspection and government agency.

Various measures are used to examine the quality of drugs by consumers in the study. The most important measure is price of drug and look of the pharmacy. Consumers purchase inferior drugs due to lack of information on quality of drugs, non-availability of quality drug, ignorance of health implication and poverty.

Respondents have positive attitude towards genuine drugs and negative attitude towards counterfeit drugs. They do not support the manufacture of inferior and counterfeit drugs. Demographic variables are the sources of variation in responses provided by respondents in the survey. The findings provide further understandings to the theoretical framework underlying the paper and also add to the empirical literature on the purchase and consumer of counterfeit drugs. The findings fill the literature gap since the study is the first empirical work in the study area.

Policy makers on the production and regulation of drugs, marketers and manufacturers of drugs must take the findings of the current findings into consideration in the production, marketing and regulation of drugs. Regulatory agencies should intensify their education on the quality of drugs.

The study should be replicated in other communities in the country to ascertain if the findings will be corroborated. Large sample size should be used in future study. Sample from rural communities should be use in future studies since price is used by consumer in determining the quality of drugs. Causal studies based on structural analysis should be done in subsequent studies.

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