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Effect Of Recycled Counterfeits On Strategic Pricing Of Electronic Products In Nairobi Central Business District, Kenya

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Abstract:
Background*: In the recent years the term counterfeit has become a buzzword in the greater global economy. According to Qian (2014) counterfeit relates to all illegal products that are produced and commercialized in violation of a trademark, copyright, patent or other Intellectual Property Rights. Trade in counterfeit goods causes damage to businesses, stagnates economic growth and alters global competition. Besides, counterfeiting also threatens the safety of citizens as the products produced elude safety controls and regulations as they align with criminal activities. Global markets have witnessed a significant growth of counterfeited electronic products which in turn affects the prices of these products in the market. Considering the proliferation of counterfeit trade in Kenya, despite the extensive and legal mandate of different institutions to protect consumers and businesses producing electronic devices, their trade is still rampant creating a need for this study. Purpose of this study. The study will therefore purpose to investigate effect of counterfeits the pricing strategies of electronic products in Nairobi Central Business District, Kenya.*
Materials and Methods*: The study, anchored on price theory, illegitimate opportunity theory, rational choice theory and enterprise theory of crime, adopted a positivism research paradigm with a cross-sectional descriptive design. The study was conducted in the Central Business District of Nairobi city. The population comprised of 3204 managers of the electronic shops in Nairobi CBD and Yamane formula will be used to get a sample of 366 managers who were sampled through simple random sampling*
Results*: According to the findings, it has been established that the coefficient to recycled counterfeits is 0.25 and it is statistically significant. This means that increasing the recycled counterfeits by one unit will result into strategic pricing of electronic products in Nairobi Central Business District, Kenya to increase by approximately 0.25. This means that firms in the Nairobi Central Business District, Kenya are more likely to engage in strategic pricing whenever they are dealing with recycled counterfeit electronic products.*
Conclusion:*Recycled counterfeits have a way of influencing strategic pricing of electronic products in Nairobi Central Business District, Kenya*
Key Word*:Recycled counterfeits, strategic pricing, electronic products*
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I. Introduction

Counterfeiting and piracy of different product is a global issue and more acute in the developing countries than the developed world (Fink et al., 2016). One of the main issues with counterfeiting is that the consumers generally perceive that their behavior is harmful to a particular industry or that it can lead to a social cost(Terblanche &Niemann, 2021). The problem of counterfeiting affects all the industries these include the pharmaceutical industry that in the recent years has reported highest incidence of counterfeit product as the illegal enterprise produces different types of medication including COVID-19 Vaccines (Ziavrou et al., 2022). The dangers of these counterfeits is that they are always of inferior quality, safety and efficacy compared to the original pharmaceuticals and are a risk to public health as it erodes the confidence in medicines, healthcare providers and health system (Bottoni&Caroli, 2019). Secondly, the electronic industry is also affected by counterfeiting. Pecht (2013) avers that there are counterfeits in different electronic products ranging from automobiles, avionics, and even military electronics. The researcher indicated that as long a product can be produced cheaper than the original the risk of counterfeiting can arise. The risk is further advanced by the lack of supply of the original product.

Moreover, it is important to note that the impact of production and trade of counterfeit products vary across different national context a phenomenon attributed to the enforcement of intellectual property laws

(Biancardi et al., 2021). This has always been the issues with developing nations that have a relatively weak enforcement of Intellectual property rights resulting to the runaway counterfeiting activities. an intriguing indicator shared by the OECD (General Trade-related Index of Counterfeiting and Piracy of Economies (GTRICP-e) provides values for the main global economy including China 1.44, India 0.64, Italy 0.38, Russian federation 0.26, united states 0.14, United Kingdom 0.13 and Germany 0.04 the lower the value the more stringent the intellectual property rights enforcement. The impact of the counterfeiting can be felt in sales brand value and firm reputations as well as the capacity of the firm harnessing the breakthroughs in developing their products (Commuri, 2009). At the global stage counterfeiting of the electronic products remains a major concern for big brands and producers of different merchandise considering the counterfeits sale cheaply thus making the companies not generate the expected revenue from the investment in research and development.

The problem of counterfeiting is common in Africa and affects different sectors of the economy. The pharmaceutical industry is greatly affected by counterfeiting in the continent. Gwatidzo et al. (2017) notes that in Zimbabwe the streets are littered with vendors sending unregistered pharmaceutical products ranging from skin-lightening creams, steroidal products, sex-enhancing products, oral contraceptives, pain relievers and different products often at negotiate able prices. The counterfeiting efforts extend to agricultural inputs in the continent. According to a report by Bill and Melinda Gates foundation smallholder farmers in Africa are faced with significant challenge of counterfeited products that have often resulted in reduction of income, increased risk to health and safety and reduced confidence on inputs (de Boef et al., 2019). The use of such products has lowered the yields of the farmers. The counterfeiting of pharmaceutical and agricultural inputs signals a greater problem of counterfeiting in the continent particularly with respect to legislation against counterfeits. In South Africa the problem of counterfeiting is more pronounced especially with respect to pharmaceutical products that lack proper legislation against the practice (Moshoeshoe et al., 2022). The lack of effective legislation adversely impacts different industries.

In the Kenyan context counterfeiting is a serious impediment for success in the market. Data from Kenya Association of Manufacturers indicate that the country lost Sh. 70 billion in 2008 because of counterfeit (Ongola, 2014). Among the core products that are being counterfeited and sold in the local markets include electrical fittings, electronic equipment, processed foods, alcoholic beverages, sanitary towels, and optical lenses. Surprisingly the counterfeiters have also managed to have standardization marks on these products making it very difficult for the unsuspecting consumers to distinguish between what is genuine and counterfeit. Besides, considering that the counterfeiters overlook the need to follow all the manufacturing practices they tend to produce inferior goods that attract relatively low costs. In the Kenyan market the counterfeit electronics originate from Southeast Asia and the consumers of these products either acquire them knowingly or unknowingly.

II. Literature Review

Recycling relates to the practice of breaking down used products into its component parts and reprocessing them into new or original forms (Singoei& Yusuf, 2019). The process of recycling often starts at the collection bins that contain materials that can be recycled. The materials are collected, cleaned, and then processed. The sorting process often depends on the material to be recycled. While the approach is effective in promoting environmental sustainability studies indicate that recycling has adverse impacts on manufacturing largely due to counterfeiting. Huang et al., (2013) in a study on counterfeit electronics components reported the danger associated with semiconductor recycling with regards to developing substandard product. The scholars reported that recycling this kind of counterfeiting often results in the development of defective parts or previously used parts from scrapped assemblies. This has multitude financial implication as the devices are not reliable and durable thus resulting into a higher early failure rate of the different electronics that have been developed using these components. While the pricing of electronics with these components can be attractive in the short run the long run implication might be different as consumers will be hesitant to acquire similar defective units. Nevertheless, while the study offers important insights on counterfeiting and consumer electronics, the authors focused on principle component analysis by only focusing on the usability of the recycled integrated circuits and not how this will influence the strategic pricing of the products a knowledge gap that this study intents to fill.

Similarly, studies indicate that counterfeiting of integrated circuits. The recycled and remarked electrical components are a significant threat to the electronic market and industry as they lead to the recall of different electronic equipment (Guin, Huang, et al., 2014). Typically, the recycled components are extracted from printed circuit boards (PCBs), repackaged and remarked then sold in as new in the market. The remarking process often includes the removal of marketing on the package and remarking with untrue information. Besides, new components can also be remarked to obtain specification. Recycling as a means of counterfeiting is also common in the pharmaceutical industry where medicine vails and medication are reproduced for resale purposes (Swaminath, 2008). The studies indicate that this practice has adversely affected the potency of medication and rendered legitimate medicine manufacturers poor considering such practices reduce their profits.

These studies concentrated on the impact of the counterfeits creating a gap on the effect on strategic pricing. Furthermore the medical sector is different from the electronic product sector which has limited studies conducted relating to counterfeits. Caswell (2010) also indicate the risk of recycled products promoting the development and proliferation of counterfeit products. In the African context, the researcher did not come across empirical studies relating to sale of recycled counterfeiting electronics and how it affects strategic pricing... The lack of literature and research on the area of interest calls for the need to conduct this study to fill in the existing knowledge gaps.

III. Theoretical Review

Price Theory

Price theory is concerned with explaining economic activity in terms of the creation and transfer of value, which includes the trade of goods and services between different economic agents (Tellis 1986). According to Friedman (1990), it is the explanation of how relative prices are determined and how prices function to coordinate economic activity. The author further outlined two reasons why we must understand price theories. The first reason to understand price theory is to understand how the society around you works. The second reason is that an understanding of how prices are determined is essential to an understanding of most controversial economic issues while a misunderstanding of how prices are determined is at the root of many, if not most, economic errors. According to Nagle and Holden (1995), a market economy is coordinated through the price system. Costs of production ultimately, the cost to a worker of working instead of taking a vacation or of working at one job instead of at another, or the cost of using land or some other resource for one purpose and so being unable to use it for another are reflected in the prices for which goods are sold. The value of goods to those who ultimately consume them is reflected in the prices purchasers are willing to pay. If a good is worth more to a consumer than it costs to produce, it gets produced; if not, it does not. This theory is therefore imperative for this study since counterfeiting plays a big role in the value a customer puts into an item and consequently the price of that particular item will be affected. Having examined the relevance of price theories, other price theories are explained below.

The Illegitimate Opportunity Theory

This theory was first formalized by Cloward and Ohlin (1960). In their theory they argued that individuals and organizations tend to commit crimes when the chances of being caught are low. This theory closely relates to strain theory that states that social structures within the society pressure citizens to commit crime. It is closely associated with the words of Emile Durkheim. The Strain Theory has been advanced by Robert King Merton (1957), Albert Cohen (1955), Richard Cloward and Lloyd Ohlin (1960), Robert Agnew (1992), and Steven Messner and Richard Rosenfeld (1994). According to these scholars, strain may be either: Structural: this refers to the processes at the societal level which filter down and affect how the individual perceives his or her needs, i.e., if particular social structures are inherently inadequate or there is inadequate regulation, this may change the individual's perceptions as to means and opportunities. Secondly, the strain can be Individual meaning to the frictions and pains experienced by an individual as he or she looks for ways to satisfy his or her needs, i.e., if the goals of a society become significant to an individual, achieving them may become more important than the means adopted. According to Merton strain is caused by the discrepancy between culturally defined goals and the institutionalized means available to attaining an objective. The theory indicates that the problem with this type of society is that the legitimate means for achieving material success are not uniformly distributed. As a result, individuals tend to turn into criminal activities to achieve the expectation of the society and this including counterfeits and other vices. According to Merton, the innovator is the most likely to engage in criminal behavior, as the innovator accepts the socially recognized goals of society but reject the legitimate means to achieve these goals. Consequently, the innovator uses proceeds from crimes such as fraud, theft, and illegal drug dealing to access culturally defined goals.

Some scholars have argued that this theory is predicated since it has limitations. Albert Cohen states that there is an ample amount of crime/ delinquent behavior that is "non-utilitarian, malicious, and negativistic that this theory is unable to explain youth crimes that are often engaged in for social status rather than material acquisition. Also, the theory fails to adequately address issues such as race, gender, and phenomena of white-collar crime (Cohen, 2000). This theory anchors this study since counterfeiting or dealing in counterfeit products in Nairobi Central Business District is easy since their importation and distribution locally is not highly restricted by the government. Furthermore, in scenarios where they are cheaper, some customers would prefer them over other original products which may be expensive.

The Rational Choice Theory

The theory was advanced by Cohen and Parsons (Dean & Croft, 2009). The theory posits that the action is rational if it pursues ends possible within the conditions of the situation by the means which those available to the actor are intrinsically best adapted to the end. According to the scholars, the actors in different

situations understand facts, situations in which they act and the conditions necessary for the realization of the end goals. In this respect, actuation is oriented to the attainment of the goals and systems of action evaluated by the individual who judges each system to be desirable or not just useful or not gratifying or not and ranks all these systems according to their value to attaining an objective. This notion is further advanced by Cohen who indicated that individuals purposively work towards a goal that is shaped by values and preferences (Blustein, 2011). In the application of the rational choice theory with regards to illegal actives such as counterfeiting, the perpetrator of a crime weighs the punishment and potential value or gains they are likely to derive from engaging in criminal activities hence the decision to commit a crime is informed by balance between the available opportunities and risks. The theory is relevant to the current study focusing on counterfeiting of electronic goods as individuals can make decisions after determining the gains in terms of profitability while also considering the risk when arrested. Nonetheless, since criminals are typically aware of the ineffective control measures by the government they manage to push for more products and goods in the markets.

Enterprise Theory of Crime

The Smith's Enterprise Theory (1980) tries to understand and explain the stake of organizations in criminal acts as reflective of specific environmental factors-market or economic forces, influencing the motivations of criminals, how they interact, their perceptions or risk versus benefit, and the efficiency and efficacy of their modus operandi (Lyman & porter 2007). According to this theory, organized crime exists because legitimate markets leave many customers and potential customers unsatisfied, that High demand for a particular good or service, low levels of risk detection and high profits lead to a conducive environment for entrepreneurial criminal groups to enter the market and profit by supplying those goods and services. According to the theory competition organizational crimes discourage competition to ensure criminal monopolies are maintained to sustain profits (Lyman & porter 2007). The theory is relevant to the current study as it can be used to explain well the counterfeits and piracy by merchants and organizations. The theory further explains that economic enterprises involves both legitimate and criminal activities, Smith Jr, (1980) states that market dynamics operating past the point of legitimacy tend to establish the primary context of the illicit entrepreneur, that a high level demand for a particular form of goods and services combined with relatively low level risk of detection and considerable high profit margins provides the ideal condition for illicit business groups to enter the market, At the heart of enterprise theory is the hall mark of economics, the law of supply and demand which the counterfeit drug cartels trading can illustrate (Lyman & porter 2007).

IV. Methodology

Research paradigm

The proposed study will adopt a positivism research paradigm. According to the positivist perspective reality is a stable phenomenon and can be perceived and defined from an objective perspective without interfering with the phenomenon being studied and research needs to be keen on concrete facts (Hasan, 2016). The perspective emphasizes that the researcher maintain their independence from the study and there is little or no provision for human interference within the study hence the study is purely objective (Crowther & Lancaster, 2008). The philosophy was deemed appropriate to the current study as primary data will be collected through an interactive process with people. Strategic pricing is a purely dependent on counterfeiting as the current system settles for a free market

Research design

Research design defines the researchers' plan of how to proceed to gain an understanding of some group or some phenomenon in a given context (Kothari, 2004). The proposed study will be based on cross-sectional descriptive design. According to Bryman (2012) the design involves collecting data in order to test hypothesis or to answer research questions concerning the study. The design is appropriate for the proposed study considering it determines and reports phenomenon the way things are. Besides, the session is scientific and provides description about phenomena or fact systematically dealing with area or population. In the proposed study efforts will be directed to understanding how counterfeits influence the strategic pricing in electronic products in Nairobi Central Business District. Quantitative data relating to the phenomenon under investigation will be collected by use of questionnaires.

Study area

The proposed study will be conducted in the Central Business District of Nairobi city. The CBD of Nairobi hosts different suppliers and distributors of electronics and is often the distribution point to other parts of the country. Besides, Nairobi region was preferred for the study due to its cosmopolitan nature and being that Nairobi is the most populous city/region in Kenya compared to all the other cities (KNBS 2019). The choice of Nairobi area therefore enabled the research to tap into many sellers, and suppliers of different electronics.

Target Population

Target population relates to the population the researcher intends to generalize the findings (Majid, 2018). The target population will include different electronic dealers in Nairobi Central Business District registered by the County of Nairobi, Kenya. This will include 3204 electronic shops Nairobi Central Business District (County of Nairobi,2021). The study will target the managers of the electronic business units.

Sampling Procedure and Sample size

Sampling

Sampling relates to the process of selecting participant to be included in a study or a research (Berndt, 2020). Considering the proposed study was keen identifying the key players in the electronic products business the choice of participants is directed to individuals who have specialized information and knowledge relating to pricing strategies that are used by the businesses and the facilities that are included in the proposed study. The researcher will use simple random sampling to select the business units then purposefully select the managers/owners to fill the questionnaires.

Sample Size

Yamane formula (1967) will be used to determine the sample size based on the population of the managers in the each of the business unit in Nairobi CBD. The study will consider the 3204 managers in the business units selling electronic products. The sample was determined using Yamane formula below:

$$n = \frac{N}{1 + N * (e)^2}$$

Where, N- Target population; n- sample size, e- tolerance at a desired level of confidence usually 95% confidence level (take e = 0.05),

$$\frac{3204}{1+ (0.05)^2 3204}$$

N = 366 managers

Data collection tools

The researcher will collect primary data using structured questionnaires. Questionnaires will be used with the managers to determine their views on the pricing, awareness about counterfeiting and what informs their decisions relating to pricing for different electronic products.

Data analysis and presentation

The study will conduct quantitative data analysis. The data collected from the managers will be subjected to both descriptive and inferential statistics with the help of SPSS version 24. Data for descriptive statistics will be analyzed in the form percentages, means, standard deviation and weighed averages and presented using tables, pie charts and bar graphs. Spearman's rank correlation and regression analysis will be used to analyze inferential statistics. Correlation analysis will be used to establish the nature and strength of the relationship between the study variables, this will be done through Pearson's product moment correlation coefficient(r) Multiple regression analysis is will be used to assess the relationship between one dependent variable and several independent variables.

The following is the regression model will be used in the study.

$$Y = \beta_0 + \beta_1 X_1 + \boldsymbol{\varepsilon}$$

Where, Y represents the dependent variable strategic pricing; β_0 is a constant; β_2 is the coefficient of the model; X1 is recycled counterfeits; and $\boldsymbol{\varepsilon}$ is the error term

Ethical Considerations

Considering the proposed study will involve human subjects the researcher will consider ethical issues. First, the researcher will seek authorization from the Board of Postgraduate Studies and Ethical Review Committee of JaramogiOgingaOdinga University of science and Technology (JOOUST). Permission to conduct research will also be sought from NACOSTI. The researcher will also adhere to all ethical standards relating to research starting with getting informed consent from the participants before involving and engaging them in the research. The researcher will also make the participants aware of their rights during the study and will guarantee the participants that all the information collected in the study will strictly be used for the research and protected

from access by third parties who are not part of the study. All the participants will be selected and enrolled to the study on voluntary basis, and no one will be coerced to be part of the study

V. Result

Response Rate

The study targeted 366 managers. As a result, 366 questionnaires were developed and distributed to the identified participants. However, only 313 were able to fill and return the questionnaires. This means that the study recorded response rate of 85.5%. According to Mugenda and Mugenda (2003), a response rate of 70% is considered adequate for a survey. By recording a response rate of 85.5%, the study concluded that the response rate was adequate enough to help in gathering enough data towards investigating effect of counterfeits the pricing strategies of electronic products in Nairobi Central Business District, Kenya.

Descriptive Statistics

Gender and Strategic Pricing

Having confirmed that the survey had an adequate response rate, the next step was to investigate composition of the participants based on the identified demographic characteristics. For a better understanding, the study was interested in finding out how the demographic characteristics related to the extent to which the managers adopted strategic pricing. In this case, the study conducted cross-tabulations for the demographic characteristics and the extent to which strategic pricing is used. The following sections provide the results of cross-tabulations performed on the different demographic variables and the extent to which there is use of strategic pricing.

The first demographic aspect of interest was gender. The study aimed at establishing how the extent of strategic pricing adopted by the managers differed among the genders. The results of the cross-tabulations are summarized in **Table no 1**:

Table no 1: Extent of Strategic Pricing * Gender Cross-tabulation.

		Gender				Total	
		Male		Female			
		N	%	N	%	N	%
Extent of Strategic Pricing	Very little extent	5	2.8%	4	3.0%	9	2.9%
	Little extent	18	10.0%	14	10.5%	32	10.2%
	Neutral	22	12.2%	15	11.3%	37	11.8%
	Large extent	90	50.0%	78	58.6%	168	53.7%
	Very large extent	45	25.0%	22	16.5%	67	21.4%
Total		180	100.0%	133	100.0%	313	100.0%

According to the findings, of the 313 respondents, 57.5% (180) were males while the remaining 42.5% (133) were females. Of the males, 50% indicated that they employ strategic pricing to a large extent with 25% indicating very large extent. Less than 13% of the male participants indicated that they employ strategic pricing to a little and very little extent. For the female participants, 58.6% noted that they employ strategic pricing to a large extent with 16.5% indicating a very large extent and less than 15% indicating that they employ strategic pricing to a very little and little extents. Indeed, it is evident that in as much as differences exist on the extent of strategic pricing among the genders, the majority of both genders indicated that they employ strategic pricing to a large extent. The findings can be related to those of Chuanyong and Jiajuan (2020), which provided that managers, irrespective of their genders, would want to engage in strategic pricing. However, Buowari (2012) noted that female managers are likely to behave differently from male managers when it comes to strategic pricing. The interpretation from that results is that the information obtained was adequate and reliable particularly with reference to understanding how different factors would influence the strategic pricing.

Position and Strategic Pricing

The second aspect of interest was the managerial position of the participants. The study aimed at establishing how the extent of strategic pricing adopted by the managers differed among the various positions. The results of the cross-tabulations are summarised in the following table:

Table no 2: Extent of Strategic Pricing * Position in Management Cross-tabulation

			Extent of Strategic Pricing					Total
			Very little extent	Little extent	Neutral	Large extent	Very large extent	
Position in Management	Top level management	N	4	9	9	35	14	71
		%	5.6%	12.7%	12.7%	49.3%	19.7%	100.0%

	Middle level management	N	1	6	2	19	7	35
		%	2.9%	17.1%	5.7%	54.3%	20.0%	100.0%
	Supervisory role	N	2	7	12	49	19	89
		%	2.2%	7.9%	13.5%	55.1%	21.3%	100.0%
	Departmental management	N	2	10	14	65	27	118
		%	1.7%	8.5%	11.9%	55.1%	22.9%	100.0%
Total		N	9	32	37	168	67	313
		%	2.9%	10.2%	11.8%	53.7%	21.4%	100.0%

Based on the results, of the 313 respondents, 22.7% (71) were top level management, 11.2% (35) were middle level management, 28.4% (89) were in the supervisory role, and the remaining 37.7% (118) were department managers. Of the top level management, 49.3% indicated that they employ strategic pricing to a large extent with 19.7% indicating very large extent. Less than 19% of the top level management participants indicated that they employ strategic pricing to a little and very little extent. For the middle level management participants, 54.3% noted that they employ strategic pricing to a large extent with 20% indicating a very large extent and approximately 20% indicating that they employ strategic pricing to a very little and little extents. In reference to participants in the supervisory role, 54.3% noted that they employ strategic pricing to a large extent with 20% indicating a very large extent and approximately 20% indicating that they employ strategic pricing to a very little and little extents.

Indeed, it is evident that in as much as differences exist on the extent of strategic pricing among the genders, the majority of both genders indicated that they employ strategic pricing to a large extent. The findings can be related to those of Guin, Huang, et al. (2014), which provided that managers, irrespective of their genders, would want to engage in strategic pricing. However, Huang et al., (2013) noted that female managers are likely to behave differently from male managers when it comes to strategic pricing. The interpretation from that results is that the information obtained was adequate and reliable particularly with reference to understanding how different factors would influence the strategic pricing.

Registration Status and Strategic Pricing

The third aspect of interest was the registration status. The study was interested in finding out whether those firms that use strategic pricing are registered or not. In other words the study wanted to find out the differences in the adoption of the strategic pricing based on the status of registration. The results of the cross-tabulation analysis are summarised in the following table.

Table no 3: Extent of Strategic Pricing * Registration Status of the Business Cross-tabulation

		Registration Status of the Business				Total	
		Registered		Non-registered			
		N	%	N	%	N	%
Extent of Strategic Pricing	Very little extent	6	3.2%	3	2.4%	9	2.9%
	Little extent	20	10.6%	12	9.6%	32	10.2%
	Neutral	25	13.3%	12	9.6%	37	11.8%
	Large extent	97	51.6%	71	56.8%	168	53.7%
	Very large extent	40	21.3%	27	21.6%	67	21.4%
Total		188	100.0%	125	100.0%	313	100.0%

Based on the results, 60.1% (188) of the managers came from companies that registered whereas the remaining 39.9% (125) of the respondents indicated that their companies are registered. In as much as the results show that approximately a third of the companies in Nairobi County are registered, it is evident that there are approximately a third of the companies that are operating without registration. It would be imperative to investigate the reason or challenge behind the high number of unregistered businesses. Looking at the registered companies, 51.6% clnfi4med that they are engaged in strategic pricing to a large extent with 21.3% of the participants indicated that they engage in strategic pricing to a very large extent. Less than 15% of the participants in the registered firms indicated that their firms are involved in strategic pricing a very little and little extent.

For the case of unregistered companies, the results indicated that 56.8% of the Participants came from companies that apply strategic pricing to a large extent with 21.6% engaging in the strategy to a very large segment. Only 13.1% of the participants come from firms that engage in little or very little strategic pricing. Even through it can be observed that there are slight differences in the application f of the strategic pricing among the registered and unregistered companies, the difference is small. This would lead to the conclusion that registration status does not necessarily affect the adoption of strategic pricing. This is consistent with the submissions of Chowdhury et al. (2020) indicating that use of strategic pricing is dependent on many factors and not registration status.

Service Length and Strategic Pricing

The fourth aspect of consideration in this study was the service Length. The study aimed at finding lit whether the number of years the managers had served could define the use of strategic pricing. In other words rye study was interested in establishing differences in the adoption of strategic pricing based on the service length of the managers. The study conducted a cross-tabulations whose results are provided in the following table:

Table no 4: Extent of Strategic Pricing * Length of service in the Firm Cross-tabulation.

		Length of service in the Firm				Total	
		Below 5 years		Above 5 years			
		N	%	N	%	N	%
Extent of Strategic Pricing	Very little extent	7	4.4%	2	1.3%	9	2.9%
	Little extent	16	10.1%	16	10.3%	32	10.2%
	Neutral	22	13.9%	15	9.7%	37	11.8%
	Large extent	83	52.5%	85	54.8%	168	53.7%
	Very large extent	30	19.0%	37	23.9%	67	21.4%
Total		158	100.0%	155	100.0%	313	100.0%

From the results, of the 313 participants that completed the questionnaires, 50.5% had served as managers in various positions for less than 5 years while the remaining 49.5% of the participants had served for more than 5 years. The interpretation is that majority of the managers in companies in Nairobi are relatively new. Among the managers who have served for below 5 years, 52.5% indicated that they engage strategic pricing to large extent, 19.0% to a very large extent, 13.9% being indifferent, 10.1% to a little extent, and 4.4% to a very little extent. The interpretation is that majority of the managers engage in strategic pricing.

In addition, the study noted that for the managers who had worked for more than 5 years, 54.8% indicated that they engage strategic pricing to large extent, 23.9% to a very large extent, 9.7% being indifferent, 10.3% to a little extent, and only 1.3% to a very little extent. The implication is that there exist a small difference in the use of strategic pricing by the experience of the managers. This corroborates the submissions by Onwuama et al. (2018) indicating that strategic pricing may also be influenced by the experience of management. Nonetheless, it seems that majority in both cases apply strategic pricing to a relatively large extent. Therefore, the study confirms that while there could be differences in the application of strategic pricing by the experience or length of service of management, there tends to be a more or less similar approach.

4.2.5 Nature/Type of Business and Strategic Pricing

The last aspect of interest was the nature/type of business. Nature or business type is an important element in strategic management. The study was interested in finding out whether different natures or types of businesses would apply strategic pricing differently. In other words the study wanted to find out the differences in the adoption of the strategic pricing based on the nature or type of the business in which the managers that took part in the survey worked or operated. The results of the cross-tabulation analysis are summarised in the following table.

Table no 5: Extent of Strategic Pricing * Nature/Type of Business Cross-tabulation.

			Very little extent	Little extent	Neutral	Large extent	Very large extent	
Nature/Type of Business	Wholesale	N	0	3	4	11	4	22
		%	0.00%	13.60%	18.20%	50.00%	18.20%	100%
	Retail	N	3	10	7	23	9	52
		%	5.80%	19.20%	13.50%	44.20%	17.30%	100%
	Combined	N	1	6	11	49	20	87
		%	1.10%	6.90%	12.60%	56.30%	23.00%	100%
	Other	N	5	13	15	85	34	152
		%	3.30%	8.60%	9.90%	55.90%	22.40%	100%
Total		N	9	32	37	168	67	313
		%	2.90%	10.20%	11.80%	53.70%	21.40%	100%

Given the findings, of the 313 respondents, 7.07% (22) were working in wholesale businesses, 16.6% (52) were in retail, 27.8% (87) were in combined businesses, and the remaining 48.6% (152) were in other businesses. Of those who are in wholesale business, 50.0% indicated that they employ strategic pricing to a large extent with 18.2% indicating very large extent. Less than 14% of the participants working in wholesale business indicated that they employ strategic pricing to a little and very little extent. For the participants working in retail, 44.2% noted that they employ strategic pricing to a large extent with 17.3% indicating a very large extent and approximately 25% indicating that they employ strategic pricing to a very little and little extents.

In reference to participants in the combined businesses, 56.3% noted that they employ strategic pricing to a large extent with 23% indicating a very large extent and approximately 8% indicating that they employ strategic pricing to a very little and little extents. Looking at the participants in other businesses, the results

indicated that 55.9% noted that they employ strategic pricing to a large extent with 22.4% indicating a very large extent and approximately 11.9% indicating that they employ strategic pricing to a very little and little extents. The interpretation of the findings is that differences exist in terms of the use of strategic pricing based on the nature or type of business even though majority indicated that the application is to a large and very large extent.

Notably, in as much as differences exist on the extent of strategic pricing among the nature or types of business, the majority of all the natures or types of businesses indicated that they employ strategic pricing to a large extent. The findings can be related to those of Guin et al. (2013), which provided that managers, irrespective of their business types of natures, would want to engage in strategic pricing. Nonetheless, Caswell (2010) indicated that depending on the business type or nature, it is expected that strategic pricing would be applied differently. The information gathered in this section forms a basis of understanding that nature or type of business may influence the extent to which strategic pricing is adopted.

Measurement of Constructs/Variables

Strategic Pricing Construct

The first construct, which formed the dependent variable was strategic pricing construct. Based on a review of literature, both theoretically and empirically, the study identified items that could help in measuring strategic pricing construct. Participants were asked to state their level of agreement in a scale of 1 to 5 (1 = strongly disagree and 5 = strongly agree). The results of the responses obtained from the participants are summarised in the following table:

Table no 6: Descriptive Statistics for Strategic Pricing Construct

	N	Min	Max	Mean	SD
Our business often use market skimming to price our electronic products	313	1	5	3.72	1.087
Our business engages in premium pricing of the electronic products	313	1	5	2.91	1.137
For new markets, we engage penetrative pricing for our electronic products	313	1	5	2.77	1.216
We are always forced to use economy pricing for our electronic products	313	1	5	3.49	1.059
Strategic Pricing	313	5	31	12.94	3.059

From the findings, the composite mean of strategic pricing is 3.24 (12.94/4) with SD = 3.06. This means that on average, the participants were indifferent about the items that were used in measuring the strategic pricing. It is important to note that on average, the participants agreed with the fact that their business often use market skimming to price our electronic products (M = 3.72, SD = 1.087). The study also found out that the participants, on average, were indifferent on the fact that their business engages in premium pricing of the electronic products (M = 2.91, SD = 1.137), for new markets, they engage penetrative pricing for our electronic products (M = 2.77, SD = 1.216), and that they are always forced to use economy pricing for our electronic products (M = 3.49, SD = 1.059). Comparing the means of the individual items and that of the composite mean, it can be noted that two items have higher means while two items have lower means. Moreover, the two items with lower means than the composite mean are relatively close to the latter. The interpretation from the above measure is that the items provided a fairly strong basis for measuring strategic pricing, which formed the dependent variable of the study.

Recycled Counterfeit Construct

The second construct, which was one of the independent variables, was the recycled counterfeit construct. From theoretical and empirical review, the study identified items that could help in measuring strategic pricing construct. Participants were asked to state their level of agreement in a scale of 1 to 5 (1 = strongly disagree and 5 = strongly agree). The results of the responses obtained from the participants are summarised in the following table:

Table no 7: Descriptive Statistics for Recycled Counterfeit Construct

	N	Min	Max	Mean	SD
Recycled Counterfeits exist in the electronics business	313	1	5	2.92	1.257
Recycled counterfeits affect strategic pricing of products on sale	313	1	5	2.84	1.182
Recycled counterfeits lead to market skimming pricing of products	313	1	5	2.70	1.179
Recycled counterfeits lead to premium pricing of products	313	1	5	3.04	1.285
Recycled counterfeits lead to penetration pricing of products	313	1	5	2.62	1.286
Recycled counterfeits lead to economy pricing of products	313	1	5	2.70	1.199
Recycled Counterfeits	313	8	30	16.82	4.484

According to the findings, the composite mean of recycled counterfeit construct is 2.80 (16.82/6) with SD = 4.48. This means that on average, the participants were indifferent about the items that were used in measuring the recycled counterfeit. It is important to note that on average, the participants were indifferent on

the fact that recycled counterfeits exist in the electronics business (M = 2.92, SD = 1.257), recycled counterfeits affect strategic pricing of products on sale (M = 2.84, SD = 1.182), recycled counterfeits lead to market skimming pricing of products (M = 2.70, SD = 1.179), recycled counterfeits lead to premium pricing of products (M = 3.04, SD = 1.285), recycled counterfeits lead to penetration pricing of products (M = 2.62, SD = 1.286), and that recycled counterfeits lead to economy pricing of products (M = 2.70, SD = 1.199). This means that even though there are participants who had agreed or disagreed with the statements or items identified, an average participant was neutral.

In comparing the means of the individual items and that of the composite mean, it can be noted that three items have higher means while three items have lower means. Moreover, the two items with lower means than the composite mean are relatively close to the latter. The interpretation from the above measure is that the items provided a fairly strong basis for measuring recycled counterfeit, which then offered grounds to find out how it affects the strategic pricing.

Inferential Statistical Analysis

Assumptions of Linear Regression

The present study had two main constructs including strategic pricing (dependent variable) and recycled counterfeit (independent variable). In order to determine whether the independent variables had a statistically significant influence on the dependent variable, the study adopted regression analysis based on the following model;

$$Y = \beta_0 + \beta_1 X_1 + \boldsymbol{\varepsilon}$$

Where, Y represents the dependent variable strategic pricing; β_0 is a constant; β_2 is the coefficient of the model; X1 is recycled counterfeits; and $\boldsymbol{\varepsilon}$ is the error term

Regression analysis was preferred to correlational analysis on the basis that the former allowed the study to predict the dependent variable from the changes in the independent variable, which could not be done through correlational analysis. The regression analysis was adopted based on the following assumptions;

i) Identified aspects have a linear relationship with the strategic pricing
ii) Distribution of errors of the model is normal
iii) Regression model has zero expected mean
iv) The error term has constant variance; that is, the homoscedasticity assumption
v) No autocorrelation neither multicollinearity

The study aimed at obtained BLUE (Best Linear Unbiased Estimators). As a result, several tests were performed to establish whether the assumptions were violated or not.

Linearity

Assumption of linearity states that the independent variables have a linear relationship with the dependent variable. In other words, the assumption of linearity posits that the effects of the independent variables on the dependent variable add up and lead to a model with residuals that are not only normally distributed but also independent and random. To establish whether the identified aspects, namely, recycled counterfeit, remarked counterfeit, cloned counterfeit, and forged-documentation counterfeit have a role in strategic pricing of the electronic products in Nairobi Central Business District, Kenya, there was a need to confirm that indeed the was linear relationship. The assumption of linearity in this study was tested using scatter plot. The results of the scatter plot developed are summarised in the following figure:

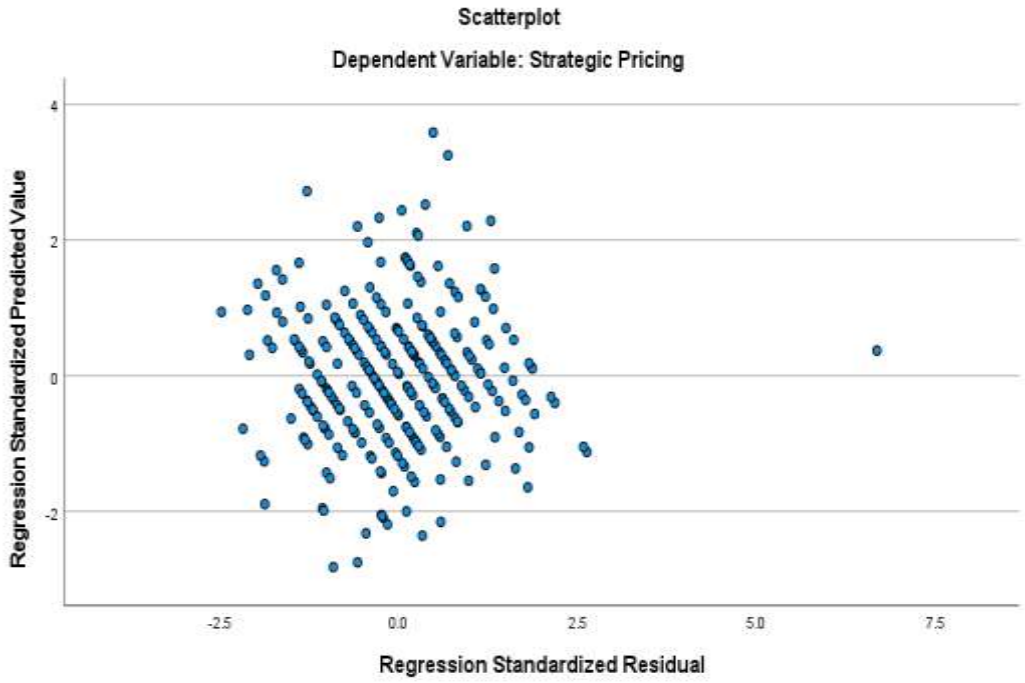

Figure 1: Scatter plot for testing normality

According to the scatter plot, there seems to be a pattern in such that changing the independent variables would amount to changing dependent variables. Therefore, the study confirmed that the assumption of linearity was not violated.

Assumption of Normality

The assumption of normality indicates that the residuals are approximately normally distributed. To establish whether the assumption was violated or not, the study used Shapiro-Wilk and KS Test for the residuals. The results are shown in the following table:

Table no 8: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.307	313	.678	.275	313	.546
Standardized Residual	.307	313	.678	.275	313	.546
a. Lilliefors Significance Correction						

According to the findings, the *p* values of the two tests are greater than .05, which means that at 5% significance level, the study failed to reject the null hypothesis indicating that the error terms are normally distributed. Failing to reject the null hypothesis implied that the assumption of normality was not violated.
Normality assumption was further tested using histogram and the normal p-p plot as follows:

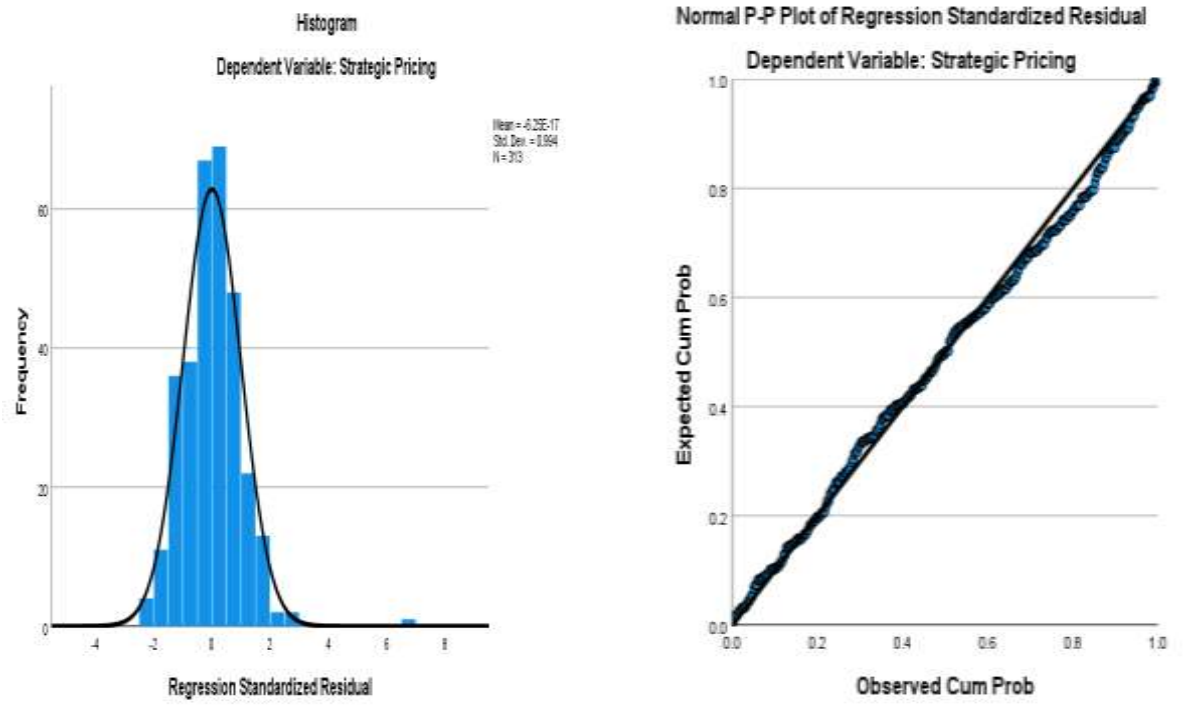

Figure 2: Histogram and normal P-P plot for testing Normality

Based on the figures; it is established that indeed normality assumption was not violated.

Assumption of Zero Expected Mean

In this assumption, the residuals have an expected mean of zero. Descriptive statistics of the residuals were established. The results are summarized below:

Table no 9: Residual Statistics

Residuals Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	8.38	18.73	12.94	1.616	313
Residual	-6.459	17.462	.000	2.598	313
Std. Predicted Value	-2.823	3.586	.000	1.000	313
Std. Residual	-2.471	6.679	.000	.994	313
a. Dependent Variable: Strategic Pricing					

From the findings, the mean of the residuals = 0, which means that the sum = 0. The interpretation is that the assumption was not violated.

Assumption of homoscedasticity

The assumption of homoscedasticity was tested using ANOVA whose findings are as follows:

Table no 10: ANOVA for Normality Test

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	635.056	4	158.764	.452	.771[b]
	Residual	108258.685	308	351.489		
	Total	108893.741	312			
a. Dependent Variable: Residual Squared						
b. Predictors: (Constant), Forged-Documentation Counterfeits, Recycled Counterfeits, Remarked Counterfeits, Cloned Counterfeits						

According to the ANOVA results, the F-statistic = .452 has a *p* value > .05, which means that it is not statistically significant at 5% significance level. The null hypothesis in this case is the presence of homoscedasticity. Since the *p* value > .05, the study failed to reject the null hypothesis. This further means that the assumption of homoscedasticity was not violated.

Assumption of absence of autocorrelation and multicollinearity

The study used VIF in testing for the violation of autocorrelation and multicollinearity assumptions. The results of the VIF are as follows;

Table no 11: Collinearity Statistics

Model		Collinearity Statistics	
		Tolerance	VIF
Durbin-Watson test		1.713	
1	(Constant)		
	Recycled Counterfeits	.901	1.110
	Remarked Counterfeits	.868	1.153
	Cloned Counterfeits	.854	1.171
	Forged-Documentation Counterfeits	.875	1.142

From the results, the Durbin-Watson test = 1.713. Rule of the thumb posits that values between 1.5 and 2.5 are considered normal with no multicollinearity. In addition, all the VIF values < 10. Given these findings, the study confirms that assumptions of multicollinearity and autocorrelation are not violated.

Since all the diagnostic tests performed indicate that all the assumptions of ordinary least squares were not violated, the study proceeded to establish how the independent variables affected the dependent variable as indicated in the sections that follow.

Regression Analysis to answer Research Questions

Once the assumptions were established to be non-violated, the study proceeded with conducting the regression analysis. The results of the regression analysis are summarized in the following tables:

Table no 12: Model Summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.528[a]	.279	.270	2.614	2.361
a. Predictors: (Constant), Recycled Counterfeits					
b. Dependent Variable: Strategic Pricing					

Table no 13: ANOVA for the Proposed Model

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	814.553	4	203.638	29.792	<.001[b]
	Residual	2105.294	308	6.835		
	Total	2919.847	312			
a. Dependent Variable: Strategic Pricing						
b. Predictors: (Constant) Recycled Counterfeits,						

Table no 14: Coefficients of the Model

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.446	1.015		2.409	.017
	Recycled Counterfeits	.171	.035	.250	4.912	.001
a. Dependent Variable: Strategic Pricing						

Looking at the model summary, the adjusted r-square = 0.27 shows that 27% variations in strategic pricing of electronic products in Nairobi Central Business District, Kenya can be explained by changes in the counterfeits. The ANOVA shows that the model had F-statistic of 29.79, with a *p* value < .05, which means that it is statistically significant. The interpretation is that at least one of the coefficients ≠ 0. Both the r-squared and F-statistic show that the model is a good fit for the data.

From the coefficients, the study established that since the *p* values < .05, all the coefficients are statistically significant. Therefore, the resulting model

Strategic Pricing = 2.5 + 0.25*Recycled Counterfeits

In this study, the first research question was *"what is the effect of recycled counterfeits on strategic pricing of electronic products in Nairobi Central Business District, Kenya?"* According to the findings, it has been established that the coefficient to recycled counterfeits is 0.25 and it is statistically significant. This means that increasing the recycled counterfeits by one unit will result into strategic pricing of electronic products in Nairobi Central Business District, Kenya to increase by approximately 0.25. This means that firms in the

Nairobi Central Business District, Kenya are more likely to engage in strategic pricing whenever they are dealing with recycled counterfeit electronic products.

VI. Discussion

The objective of the study was "to determine the effect of recycled counterfeits on strategic pricing of electronic products in Nairobi Central Business District, Kenya" In achieving this objective, the study sought for answers to the question "what is the effect of recycled counterfeits on strategic pricing of electronic products in Nairobi Central Business District, Kenya?" Based on the findings, the study noted positive relationship between recycled counterfeits and strategic positioning of electronic products in Nairobi Central Business District, Kenya. Generally, this would mean that firms dealing in electronic products are more likely to engage in strategic pricing when dealing with recycled counterfeits. Such findings corroborate those of Singoei and Yusuf (2019) indicating that recycling relates to the practice of breaking down used products into its component parts and reprocessing them into new or original forms. The study findings are also consistent with Huang et al., (2013) reporting the danger associated with semiconductor recycling with regards to developing substandard product. Guin, Huang, et al. (2014) also had similar findings by indicating that recycled and remarked electrical components are a significant threat to the electronic market and industry as they lead to the recall of different electronic equipment. Caswell (2010) also indicate the risk of recycled products promoting the development and proliferation of counterfeit products.

VII. Conclusion

In this study, the research objective was to determine the effect of recycled counterfeits on strategic pricing of electronic products in Nairobi Central Business District, Kenya. From the descriptive statistical analysis, the study noted that recycled counterfeits exist in the electronics business, recycled counterfeits affect strategic pricing of products on sale, recycled counterfeits lead to market skimming pricing of products, recycled counterfeits lead to premium pricing of products, recycled counterfeits lead to penetration pricing of products, and that recycled counterfeits lead to economy pricing of products. Given the statistical findings, there is a positive relationship between recycled counterfeits and strategic pricing of electronic products in Nairobi Central Business District, Kenya. This means that firms in the Nairobi Central Business District, Kenya are more likely to engage in strategic pricing whenever they are dealing with recycled counterfeit electronic products. The conclusion from such findings is that recycled counterfeits have a way of influencing strategic pricing of electronic products in Nairobi Central Business District, Kenya.

References

[1]. Ziavrou, K. S., Noguera, S., &Boumba, V. A. (2022). Trends In Counterfeit Drugs And Pharmaceuticals Before And During Covid-19 Pandemic. Forensic Science International, 338, 111382. Https://Doi.Org/10.1016/J.Forsciint.2022.111382

[2]. Bottoni, P., &Caroli, S. (2019). Fake Pharmaceuticals: A Review Of Current Analytical Approaches. Microchemical Journal, 149, 104053.

[3]. Pecht, M. (2013). The Counterfeit Electronics Problem. Open Journal Of Social Sciences, 1(07), 12.

[4]. Biancardi, M., Di Liddo, A., & Villani, G. (2021). How Do Fines And Their Enforcement On Counterfeit Products Affect Social Welfare? Computational Economics. Https://Doi.Org/10.1007/S10614-021-10195-6

[5]. Commuri, S. (2009). The Impact Of Counterfeiting On Genuine-Item Consumers' Brand Relationships. Journal Of Marketing, 73(3), 86–98.

[6]. Gwatidzo, S. D., Murambinda, P. K., &Makoni, Z. (2017). Medicines Counterfeiting In Africa: A View FromZimbabwe. Medicine Access @ Point Of Care, 1, Maapoc.0000017. Https://Doi.Org/10.5301/Maapoc.0000017

[7]. De Boef, W., Hasson, O., Pierson, B., Kim, D., Mennel, J., Engle, C., Prabhala, P., Bryce, J., Nemeth, N., &Jethani, A. (2019). Counterfeiting In African Agriculture Inputs—Challenges & Solutions: Comprehensive Findings. Gates Open Res, 3(250), 250.

[8]. Moshoeshoe, R. J., Enslin, G. M., &Katerere, D. R. (2022). An Exploratory Assessment Of The Legislative Framework For Combating Counterfeit Medicines In South Africa. Journal Of Pharmaceutical Policy And Practice, 15(1), 3. Https://Doi.Org/10.1186/S40545-021-00387-8

[9]. Ongola, B. S. (2014). Efficacy Of Anti-Counterfeit Laws In Kenya. University Of Nairobi.

[10]. Singoei, B. J., & Yusuf, K. (2019). Effect Of Product Recycling Practices On The Performance Of Agro Processing Firms In UasinGishu County, Kenya. The Strategic Journal Of Business & Change Management, 6(2), 1369–1377.

[11]. Huang, K., Carulli, J. M., &Makris, Y. (2013). Counterfeit Electronics: A Rising Threat In The Semiconductor Manufacturing Industry. 2013 Ieee International Test Conference (Itc), 1–4.

[12]. Guin, U., Dimase, D., &Tehranipoor, M. (2014). A Comprehensive Framework For Counterfeit Defect Coverage Analysis And Detection Assessment. Journal Of Electronic Testing, 30(1), 25–40.

[13]. Swaminath, G. (2008). Faking It—I The Menace Of Counterfeit Drugs. Indian Journal Of Psychiatry, 50(4), 238–240. Https://Doi.Org/10.4103/0019-5545.44743

[14]. Caswell, G. (2010). Counterfeit Detection Strategies: When To Do It/How To Do It. International Symposium On Microelectronics, 2010(1), 000227–000233.

[15]. Crowther, D., & Lancaster, G. (2008). Research Methods: A Concise Introduction To Research In Management And Business Consultancy. Oxford: Butterworth-Heinemann.

[16]. Singoei, B. J., & Yusuf, K. (2019). Effect Of Product Recycling Practices On The Performance Of Agro Processing Firms In UasinGishu County, Kenya. The Strategic Journal Of Business & Change Management, 6(2), 1369–1377.

[17]. Hasan, M. N. (2016). Positivism: To What Extent Does It Aid Our Understanding Of The Contemporary Social World? Quality & Quantity, 50(1), 317–325. Https://Doi.Org/10.1007/S11135-014-0150-4

[18]. Crowther, D., & Lancaster, G. (2008). Research Methods: A Concise Introduction To Research In Management And Business Consultancy. Oxford: Butterworth-Heinemann.
[19]. Kothari, C. R. (2004). Research Methodology: Methods And Techniques. New Age International.
[20]. Bryman, A. (2012). Social Research Methods. Oup Oxford.
[21]. Guin, U., Dimase, D., &Tehranipoor, M. (2014). A Comprehensive Framework For Counterfeit Defect Coverage Analysis And Detection Assessment. Journal Of Electronic Testing, 30(1), 25–40.
[22]. Chowdhury, S., Ganji, F., & Forte, D. (2020). Low-Cost Remarked Counterfeit Ic Detection Using Ldo Regulators. 2020 Ieee International Symposium On Circuits And Systems (Iscas), 1–5.
[23]. Onwuama, T. U., Odii, J. N., Nwokoma, F. O., Nigeria, O., &Onukwugha, C. G. (2018). Mobile Phone Cloning-A Conceptual Review. International Journal Of Computer Science And Information Security (Ijcsis), 16(8).
[24]. Guin, U., Dimase, D., &Tehranipoor, M. (2014). A Comprehensive Framework For Counterfeit Defect Coverage Analysis And Detection Assessment. Journal Of Electronic Testing, 30(1), 25–40.