

The Impact of Trading Counterfeited Vehicle Spare Parts across the Local Supply Chain: Case of Moshi Municipality

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Abstract

The influx of counterfeit vehicle spare parts in the local supply chains has reached an alarming rate, with vehicle owners often being victim to dubious traders who sell them contrabands under the guise that the spare parts are indeed genuine. In order to exhaust the magnitude of the problem, the study aimed at identifying the factors driving suppliers/dealers and consumers to trade counterfeited vehicle spare parts across the supply chain and examining the effects of trading counterfeited vehicle spare parts on the supply chain. A survey research design was employed to conduct the study which allowed the collection of adequate data from a sizeable population in a highly economical way. Multiple approaches including questionnaire, interviews and documentary review were used to gather both primary and secondary data which enabled researchers to do triangulation. Findings revealed that suppliers and customers trade counterfeited vehicle parts for a number of reasons including price affordability and inadequate awareness. This has resulted to a various effects to the participant in the local supply chain such as accidents, high replacement costs and damaged reputation.

Keywords: Counterfeited products, Vehicle parts and Supply chain

1.0 INTRODUCTION

1.1 Background to the Problem

Counterfeiting of all types is big business these days. In fact, the Federal Bureau of Investigation in the United States labels counterfeiting as the “Crime of the 21st century.” Since the counterfeiting is coupled with piracy, the global counterfeit vehicle parts trade is now pegged at US\$12 billion per year according to World Customs Organization in Interpol (Menzies, 2010). The counterfeiting business has changed from being largely localized operations into a highly profitable global business with mass production, global sales and complex global distribution networks. Counterfeited physical objects can be seen in almost every country and in virtually all sectors of the global economy (GS1, 2013).

Everyday millions of fake products are being produced and shipped around the world to developed and developing markets alike at an increasing rate, penetrating legitimate and secure supply chains of automobile parts. Worse enough the non suspecting buyers who rush for cheap prices cannot distinguish between genuine and counterfeit goods (Mutalemwa, 2010). This drain on the global supply chains and economy is significant and the long term implications of this illicit trade are enormous while at the same time consumers are at risk from using unsafe products, governments and society are being robbed of billions in tax, income and jobs (GS1, 2013).

As the automobile industry has grown, a big share of the cake has been grabbed by counterfeit spare part dealers. As the number of cars on roads balloons, spare parts business has increasingly become lucrative ranging from authorized dealers to quacks and vehicle parts. Dealers have sprouted like milk and bread shops in various countries. Today, the influx of counterfeit automobile spare parts in the automobile industry has reached an all time high, with motorists often being victim to dubious traders who sell contrabands under the guise that the spare parts are indeed genuine (Chepkwony, 2013).

Therefore, trading of counterfeited products across the supply chain is a serious and expanding problem that harms consumers, industry, and governments. Its scope suggests the need to understand and respond to it at the national and international levels. As pointed out by Heinonen and Wilson (2012) many of its aspects are identified at the local level and state policymakers must also address product counterfeiting more locally by understanding the specific nature of the problem and the risks involved.

1.2 Statement of the Problem

The impact of product counterfeiting is broad and far-reaching as it jeopardises public safety, undermines legitimate business and harms national interests. It results in the public having less diversity in product choice by decreasing incentives for industry innovation (Heinonen and Wilson, 2012). More important, it poses considerable health and safety risks but also harms industry. Some obvious examples are lost revenue, market share and profits. The Motor and Equipment Manufacturers Association (MEMA) cited estimates suggesting that “counterfeiting costs the global motor vehicle parts industry \$12 billion a year and \$3 billion in the United States alone (MEMA, 2009).

Companies also incur intangible costs, such as damages to brand value or reputation resulting from poor-quality counterfeits. The costs of product counterfeiting can also reduce incentives to innovate or develop new products. Furthermore, counterfeiting strains government resources as it loses considerable tax revenue from the sale of counterfeit products while at the same time, must allocate resources to combat product counterfeiting (USGAO, 2010). The G20 member countries have an estimated 3,000 deaths annually due to counterfeit consumer goods. Not only that but also legitimate businesses must compete with counterfeiters while brand owners and Intellectual Property Rights (IPR) holders face significant business and financial risks (GS1, 2013). The motor vehicle parts industry (manufacturers who produce the parts and components used to repair everything from passenger cars to over-the-road trucks) have been hit hard by counterfeiting in its global supply chains.

It is estimated that counterfeiting costs the global motor vehicle parts industry at projected global losses as high as US\$45 billion by 2011. In addition to the other considerations listed above, counterfeit motor vehicle parts pose serious safety risks to unsuspecting consumers. Counterfeit motor vehicle parts may not meet safety standards and the criminals who produce these parts frequently use dangerous, inferior materials in production. As a result, these counterfeit parts which may look identical to quality, brand name parts can endanger the repair professional installing the part, the car or heavy duty truck driver operating the vehicle and all motorists travelling the same roads with these vehicles (MEMA, 2009).

Surprisingly, to a great extent the public view of counterfeit products is one of the ambiguity, it is often seen as victimless crime, which of course is far from the truth. This is lack of appreciation of the threat of counterfeits actually encourages and supports its continued growth. As the business is growing, the major threats from counterfeits ranges from jeopardising safety, reduced market for legitimate business to reduced government revenue (GS1, 2013). For these reasons global solutions are needed to address the ever-growing threats presented by this flourishing criminal activity. In essence, current supply chains are not fit for purpose in terms of their ability to protect and detect counterfeit penetration into legitimate and secure supply chains.

Therefore, the study aimed at analysing the impact of trading counterfeited vehicle spare parts on the performance of supply chain system with a focus in the domestic supply chain in the Moshi Municipality in the Kilimanjaro Region. In order to exhaust the aforementioned objective effectively, the specific research objectives oriented towards identifying the factors driving suppliers/dealers and consumers to trade counterfeited vehicle spare parts across the supply chain and examining the effects of trading counterfeited vehicle spare parts on the supply chain players.

2.0 LITERATURE REVIEW

2.1 Conceptual Definition

Counterfeit Products is an imitation, usually one that is made with the intent of fraudulently passing it off as genuine. Product counterfeiting and trade in counterfeit products, labels and packaging involve imitation of genuine products that are marketed under brand names. Counterfeit auto parts are imitations of the original parts which replicated and marked in order to represent them as original parts thereby causing the weary buyer to purchase the same believing to be originals (Chepkwony, 2013). Hence, *counterfeited automotive parts* mean imitated goods which are to be installed in or upon a motor vehicle so as to replace components of that vehicle, including goods such as lubricants which are necessary for the use with the exception of fuel.

According to Fujitsu (2010) the most common *counterfeited automotive parts* are brake shoes, brake pads, steering linkages, air filters, spark plugs, wipers and car interior accessories. Safety is definitely compromised with the low quality of such fakes. When substandard metals are used, for example, the parts are most likely to succumb to shearing. Accidents have been reportedly caused by a fake wheel and even a fake brake shoe made out of compressed grass.

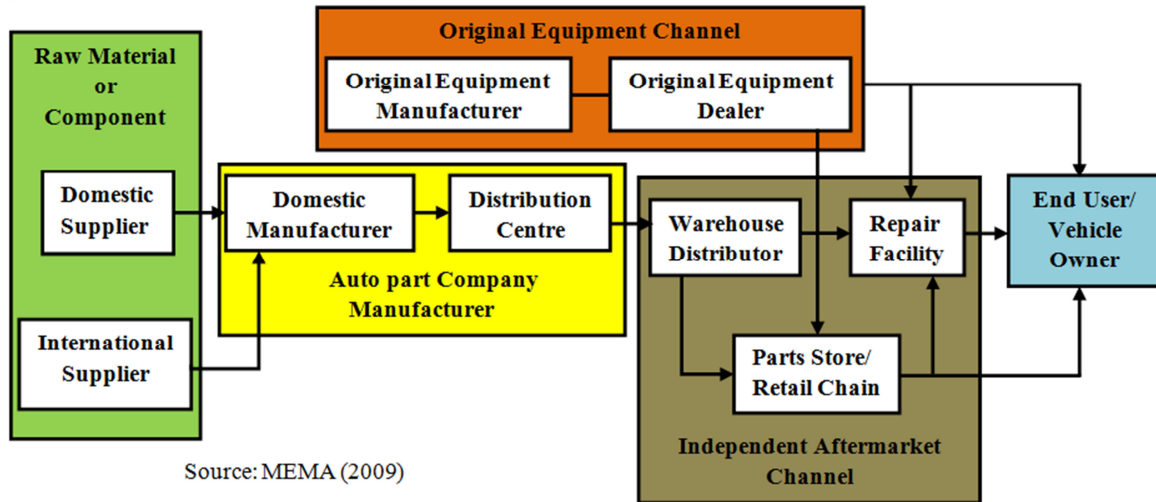
Supply Chain is that network of organisations that are involved through upstream and downstream linkages in the different processes and activities that produce value in the form of product and services in the hands of the ultimate customer or consumer (Lysons, 2006). The linkages in the supply chain represent the coordination of supply chain processes and relationships. The upstream linkage means “against the current” and related to the relationship between an enterprise and its suppliers and suppliers’ suppliers. On the other side, downstream is “with the current” and relates to the relationship between the enterprise and its customers. Hence, the supply chain system of the auto parts constitutes both the upstream and downstream linkages.

2.2 Legitimate and Counterfeit Auto Parts Supply Chains

The legitimate supply chain deals with managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer. In order to understand how counterfeit parts end up on cars, trucks and commercial vehicles, it is important to understand the legitimate supply chain of auto part which includes both original equipment channel, which includes the original equipment vehicle manufacturer

and the subsequent replacement parts sales and/or repair through original equipment dealerships, or the aftermarket, which supplies parts and components which are added to or replaced on vehicles after they are already on the road.

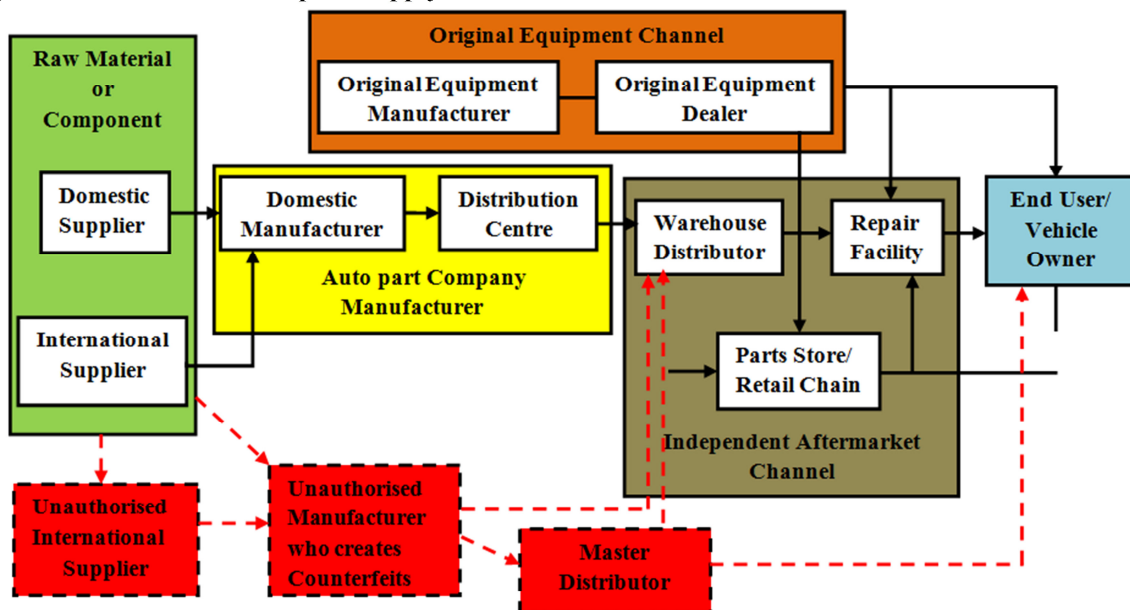
Figure 1: Legitimate auto parts supply chain



Source: MEMA (2009)

As depicted in figure 1 above, the legitimate supply chain, the raw material and component suppliers are responsible for the supply of these to the manufacturer. The manufacturer in turn produces finished parts from raw materials and/or components then finished parts are moved to the distribution centre where they are packaged and shipped to either the original equipment channel or to a warehouse distributor for the aftermarket supply chain. The warehouse distributor may sell parts to retail chains, which in turn sell the part to a repair facility, which may be independent or part of a car dealership or the warehouse distributor may sell directly to repair facilities. Also, parts may be sold directly to the vehicle owner for do-it-yourself repairs. On the case of counterfeit auto parts, different players enter the distribution supply chain and the methods of entering the marketplace are diverse – so diverse and convoluted at times that legitimate partners and the supplier may unwittingly sell unsafe, counterfeit parts to the end user. Counterfeit products are produced by unauthorized suppliers – these parts may appear identical to legitimate products in terms of packaging, branding and trademarks, but they have been produced without the original manufacturer’s authorization and may disregard adherence to safety and quality standards (MEMA, 2009).

Figure 2: Counterfeited auto parts supply chain



Movement of counterfeited vehicle parts in the supply chain

Source: Customised from MEMA (2009)

The identified unauthorised suppliers and manufacturers may have links to international suppliers as subcontractors for production of legitimate parts. The journey of creating and supplying the counterfeited vehicle spare part can begin from the unauthorised international supplier or domestic unauthorised manufacturer who produces the products and supply them to the warehouse distributor or through a master distributor. Also, parts from the master distributor may be sold to a warehouse distributor or directly to the parts store/retail chain, the repair facility or the end user/vehicle owner. Hence, the supply chain has multiple players with legitimate interest and financial resources to ensure that the products reach the domestic markets and consumers. This in return affects the performance of the supply chain through penetrating sub standard products at cheaper prices which affects customers well being, defeats fair trade practices and the government does not get revenue through taxation.

2.3 Effects of trading counterfeited auto parts

The use of latest manufacturing and printing technologies, counterfeiters are able to match paints and print boxes, labels and security codes that mimic those on the genuine products. Many fakes are undetectable to the average technician or shop owner and the products penetrates the auto parts distribution channel without being noticed leading to major problems to the ultimate customer in the supply chain. Notable effects include the following:

Limited innovations and growth: innovation has long been recognised as a main driver of economic growth and innovators protect their ideas through patents, copyrights and trademarks. Hence, counterfeiting undermines the efforts of innovators, the incentive to develop new ideas and products is reduced and thereby weakening the innovation process which is critical for the success of the auto parts business and the supply chain in general (OECD, 2007).

Loss of market share: a survey carried out by Toyota Kenya in June 2011 indicated that 8 out of 10 vehicles in the country have at least one fake spare part. The survey was carried out at the firms dealerships spread across the country, on vehicles brought in for service within the company. Over 80 percent of Toyota parts in Kenya were found to be counterfeit and this has eaten into its market share and putting motorists at risk in the country (Chepkwony, 2013).

Tax revenues: tax collection is presumed to be far more effective from rights holders and their licensees than from counterfeiters. Potential losses include corporate income taxes, sales or value added taxes, excise taxes, import tariffs and social insurance charges (OECD, 2007).

Road accidents: many documented vehicle "accidents" have been caused by counterfeit parts, as well. While bogus spark plugs and other engine parts have merely caused aggravating failures and breakdowns, poorly constructed brake and suspension parts have resulted in many deaths (Fujitsu, 2010). A number of deaths in Saudi Arabia were attributed to the use of counterfeit brake pads made of compressed wood chips. In Nigeria, brake shoe linings made from compressed grass burst into flames when the brakes were applied.

Low consumer utility: the satisfaction that consumers derive from a product is based in large measure on the quality of the products and/or its performance, taking the price paid for the product into account. When the quality and/or performance of a counterfeit product is inferior to a genuine product, consumer utility is decidedly lower for those individuals who pay full price, believing the product that they have purchased is genuine (OECD, 2007).

Damaged brand value and firm reputation: Counterfeit products may damage the brand image and reputation of firms over time. For instance, those consumers who believed they were buying a genuine vehicle spare parts when in fact it was a fake, will be likely to blame the manufacturer of the genuine product if the fake does not work.

3.0 METHODOLOGY

A survey research design was employed to conduct the study which allowed the collection of adequate data from a sizeable population in a highly economical way. The design was also flexible in data collection as multiple methods were used to collect data from Suppliers, Drivers and Garage Owners located in Moshi Municipality. Moshi Municipality is the Kilimanjaro Regional Headquarters located under the Southern slopes of Mt. Kilimanjaro which lies approximately 3°18 south of Equator and 37°20 east of Greenwich. Purposive and simple random sampling techniques were used to pick a sample of 60 respondents who were the stakeholders in the automotive parts and components including dealers of auto parts/ auto shops, the mechanics from different local garage, drivers and transport officers from different institutions. Multiple approaches including questionnaire, interviews and documentary review were used to gather both primary and secondary data which enabled researchers to do triangulation. Data were analysed through applying qualitative techniques that involved the use of interpretive approach while quantitative techniques involved utilisation of descriptive statistics.

4.0 RESULTS AND DISCUSSION

4.1 Factors driving suppliers/dealers and consumers to trade counterfeited auto parts

Counterfeiting of vehicle spare parts has earned a global reputation where both tiers of the supply chain are highly involved knowingly or unknowingly. Through conducting a survey the study aimed at establishing the factors driving suppliers to sell while customers to buy counterfeited auto parts. Results are presented in Table 1 below:

Table 1: Factors for trading counterfeited auto parts

Attributes	Value	Frequency (n=60)	Percentage (%)
Customers cannot afford to purchase genuine auto parts	Strongly Agree	13	21.7
	Agree	40	66.7
	Neutral	1	1.7
	Disagree	5	8.3
	Strongly Disagree	1	1.7
Counterfeited parts have greater demand from customers	Strongly Agree	25	41.7
	Agree	30	50.0
	Neutral	2	3.3
	Disagree	2	3.3
	Strongly Disagree	1	1.7
Genuine parts are not available in the market	Strongly Agree	1	1.7
	Agree	19	31.7
	Neutral	5	8.3
	Disagree	31	51.7
	Strongly Disagree	4	6.7

Customers cannot afford to purchase genuine auto parts

Experience shows that most of the customers purchase counterfeits because of price grounds. During data collection respondents were asked rank their opinion on the ability of the customers to purchase genuine vehicle spare parts and responses indicate that 13 respondents representing 21.7% strongly agree that customers cannot buy original or genuine products because of higher price of the products while 40 respondents representing 66.7% also agreed.

Respondents pointed out that price affordability is the major factor driving them to buy such products to suit their current needs regardless of the future implications. When interviewed some of them even went further to argue that since the products are easily affordable they can buy new counterfeited vehicle spare parts once the previous fails.

The findings coincide with those of Chepkwony (2013) who found out that customers bought counterfeited vehicle spare parts because it's all they can afford as they are very cheap and come in different colours, sizes and styles. On the other side 8.3% disagree and 1.7% strongly disagree that price is the major factor driving customers to purchase counterfeited parts. These respondents pointed out that customers purchase such items because they are easily available in market. However, researchers ruled out this reason because a quick observation into the vehicle spare parts shops showed that genuine products are available too in the display shelves. Hence, results reflect that higher prices of genuine products which customers cannot afford to pay is one of the reasons that make business people to resort on the counterfeit business of automotive parts and components.

Counterfeited auto parts have greater demand from customers

The rule of thumb is without demand for counterfeited vehicle spare parts there would have not been supply of such product across the supply chain. Nonetheless, in order to determine if demand for counterfeits is one among the driving factors, the study obtained respondents opinions and results indicate that 25 respondents (41.7%) strongly agreed and 30 respondents (50%) agree that counterfeit vehicle spare parts have greater demand from customers which highly influence its supply across the local supply chain in Moshi Municipality. The findings supports those of Rottah (2011) who found out that counterfeiters will always continue manufacturing and importing counterfeited parts irrespective of the legal implications as long as there is demand in the market and recommends that this menace and counterfeiting should be eliminated by all means. Presence of demand at the end of the supply chain influences other participant into the chain to import counterfeits from unauthorised foreign suppliers or manufacture the counterfeits domestically in order to suffice the local demand and earn revenue for themselves. Therefore, availability of demand for counterfeited vehicle spare parts in the local markets is a pull factor that influences manufacturers, suppliers, distributors and retailers to push the products

across the local supply chain.

Genuine spare parts are not available in the market

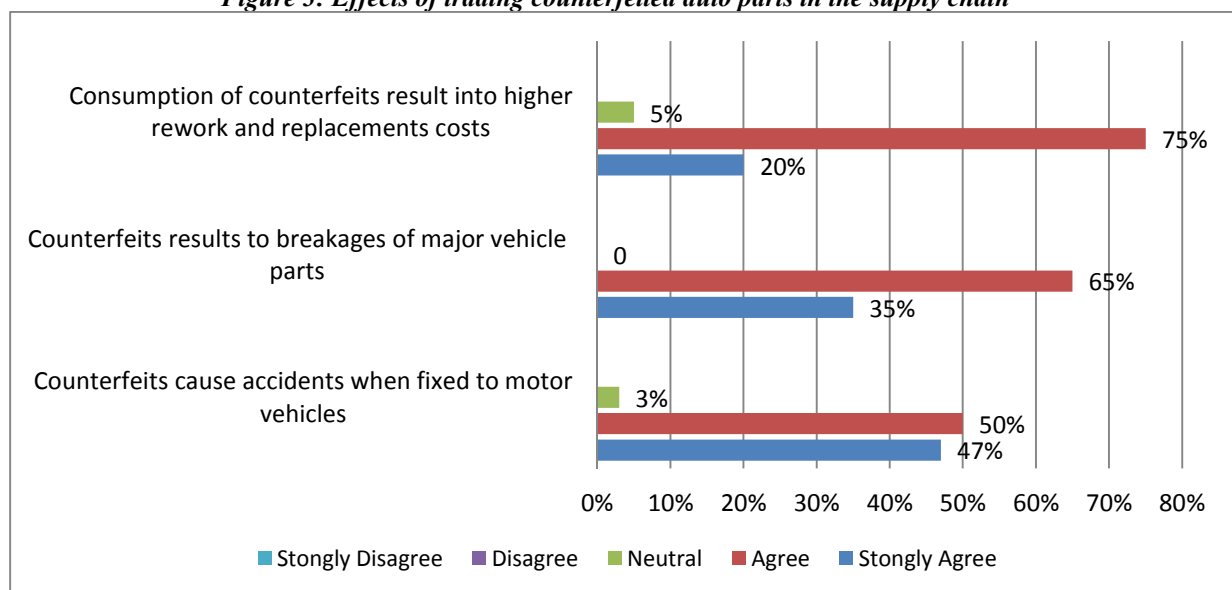
As a result of customers low awareness of intellectual property rights (Cheng *et al*, 2011) most customers ask for counterfeits from the retailers. Hence, retailers use this opportunity to orient customers with cheap and fake products which in return makes the genuine auto parts no to be available in the local distribution channels. Findings from Table 1 indicate that 19 respondents (31.7%) agreed that suppliers trade counterfeited vehicle spare parts or fake spare parts because genuine products are not available in the market while 5 respondents (8.3%) had neutral opinion. Those who agreed argued that absence of genuine vehicle parts in the market influence customers to be oriented with counterfeits.

However, the majority of respondents (35) representing 51.7%disagreed that trading of counterfeited spare parts is due to unavailability of genuine spare parts in the market. These respondents were of the opinion that genuine vehicle spare parts are plenty available in the legitimate local supply chains but customers themselves prefer counterfeits because they are cheap and easily available. Researchers also were shown local retailing shops selling genuine parts and only few customers were there but on the other side the retailers selling counterfeits had a good number of customers. Therefore, regarding this reason it was agreed that suppliers and customers highly trade counterfeits because of other reasons but not unavailability of genuine auto parts in the legitimate supply chain.

4.2 The effects of trading counterfeited auto parts on the supply chain players

While globalization has resulted in the lowering of international barriers, it has also created new opportunities for illegal trade of trading counterfeited vehicle spare parts across the international and domestic supply chains. This has resulted to various effects to the users of such products who were the customers at the end of the local supply chain and the study found the following effects (presented in Figure 3) as highlighted by respondents:

Figure 3: Effects of trading counterfeited auto parts in the supply chain



Findings show that 45 respondents (75%) agreed and 12 respondents (20%) strongly agreed that consumption of counterfeited vehicle parts results into higher rework and replacement costs. It was established that vehicle owners who had used counterfeited spare parts (knowingly or unknowingly) complained a lot about the performance of such products in terms of replacing them more often resulting into higher replacement costs. Also, it was revealed that fixing counterfeited vehicle parts into vehicles resulted into breakdown of the major parts of the vehicles such as engine, gear box and the braking system. All respondents had a positive response whereby 21 respondents (35%) strongly agreed that the use of counterfeited spare parts in vehicles can results to breakage of major critical parts of the vehicles 39 respondents (65%) agreed. Respondents pointed out that those who have used counterfeited spark plugs, brake pads, brake shoes and filters had an experience of problems with critical parts of the vehicles such as engine, gear box and braking systems. Hence, the use of such fake products endangers the well being of the vehicle and the safety of the ones using the vehicle as well as other road users.

Furthermore, result show that 28 respondents (47%) strongly agreed and 30 respondents (50%) agreed that counterfeited vehicle spares can cause accidents when fixed to motor vehicles. The findings are in line with those of Fujitsu (2010) who found out that a number of accidents have occurred as a result of fixing counterfeits.

A number of deaths in Saudi Arabia have attributed to the use of counterfeit brake pads made of compressed wood chips. In Nigeria, brake shoe linings made from compressed grass burst into flames when the brakes were applied. Some of the local experts pointed out that counterfeited products are substandard and not strong enough for use in the long distance travel. For example, spares like brake pads and motor vehicle tires when get heated in the long distance route tend to bust and cause serious damages and injuries. Also, they pointed out that the counterfeits may not be compatible with the genuine major parts (such as engine) into which the spares are going to be fixed, hence results into poor performance or damages to the major parts and possible grounds for accidents.

5.0 CONCLUSION

The increasing presence of counterfeited vehicle spare parts in the markets is costing governments and legitimate traders billions of dollars annually in lost revenues. Counterfeit and gray market of automotive components are a growing concern and an expensive problem. Through organised illegitimate global and local supply chains the counterfeited vehicle parts have been able to penetrate every country causing great challenges to the legitimate vehicle parts supply chain. Findings established that suppliers and customers trade counterfeited vehicle parts for a number of reasons including price affordability and inadequate awareness. This has resulted to a various effects to the participant in the local supply chain such as accidents, high replacement costs and damages reputation. Therefore, it is concluded that trading of counterfeited vehicle spare parts has an impact on the local supply chain as the key players (customers and retailers) are highly affected basing on quality and financial perspectives. Nonetheless, in order to curb the supply of counterfeits in the country, other initiatives should be undertaken along with those already done by International Agencies, Tanzania Bureau of Standards (TBS) and Fair Trade Commission (FTC). The new initiatives should be focused on conducting awareness campaigns about the situation of vehicle spare parts counterfeit business in the country and its effects in the supply chain and to the country's economy in general. Also, suppliers, retailers and consumers should be trained or sensitised about intellectual property right, patents rights and other legal or policy issues regarding counterfeits. Lastly, a light approach of dealing with the problem is to provide discounts or promotions campaigns from marketers of retailers would help reach potential customers and once customers believe that the price is reasonable and affordable they may become used to purchasing original vehicle spare parts and develop brand loyalty.

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