The moderating effect of road safety and compliance training on the relationship between motor cycle accessibility to market and performance wholesale retail sector in Kenya

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INTRODUCTION

Transport is an integral aspect of development and socio-economic growth, as the nerve centre of economic integration, transport infrastructure and service facilities institute a foundation for facilitating trade and ease of flow of goods and persons. Transportation is the movement of goods and persons from place to place and the various means by which such movement is accomplished (Britanica, 2018), which commonly are by rail, air, water, road, and pipelines (Manoj, 2019). Transportation is central to every economy. It aids in the smooth movement of people, goods, and directly affects service delivery. Commuters consider safety, availability, affordability, reliability, comfortability, and efficiency in deciding on means of transport (Litman, 2017). Transportation is a crucial element in development, and this affects the socioeconomic and political interaction that most people take for granted (Button & Hensher, 2001). Transportation has a significant influence on human lives. For instance, various means of transport have
dramatically impacted businesses, business, homes, and schools, thereby making a unique contribution to industrial development, living arrangement as well as the physical and social movement of people. Cars, motorbikes, bicycles, trains, and airplanes are popular means of transportation across the world. Tricycles/motorbikes have become an increasing and acceptable means of transport especially in the developing world.

Motorcycles/tricycles as a means of road transport are vehicles similar to a bicycle, but having three wheels, two at the back and one at the front (Oxford Press, 2017). Tricycles have become more vital to the socio-economic development of individuals and society. In several fragments of the world, including China, India, France, the Philippines, and Nigeria, tricycles are widely used. Some reasons for its adaptability include its affordability and availability. It is also efficient amidst heavy vehicular traffic. This system of transportation is believed to have considerably improved the lives of many people, including the operators, owners, and users. However, the question is whether this alternative mode of transport has solved the existing problems such as limited access and higher fares charged by taxi cabs, trucks, buses, and motorbikes. Also, has there been any improvement or increase in economic activities because of the introduction of motorcycles.

Traditionally transport has been perceived only as a means of accessing nation-wide and international trade, but in this drastically world, transport infrastructure is, and will always be, pivotal to development and continued accelerated growth which is key in alleviating poverty. The development of boda boda as key alternative means of transport has also impacted on several sectors of the economy. Porter (2013) indicated that a common trend in rural areas is provision of feeder services by motorbikes, connecting inaccessible areas to motorized transport at the paved roads which has positively changed the rural areas in many ways. In Kenya, the motorcycle Boda boda provides 3 types of services. Firstly, the short distance service within main urban areas competing with conventional taxis and tuktuks. Secondly as feeders to urban areas with low density demand, or rough terrain where other means are non-adjacent and thirdly as feeders to main roads competing and supplementing taxis and larger capacity Matatus (Mwobobia 2011).

The growth of motorcycles as a mode of transport in most parts of sub-Saharan Africa has mostly been driven by the need to access remote areas with ease in an affordable manner (Mugie, 2018). Kumar (2018) asserts that a decline in organized public transport systems has led to rapid growth in non-conventional means of public transport, initially provided by minibuses and shared tax or and vans, and more recently by commercial motorbikes. In East Africa, the growth and development of motorcycle business also noticed a huge success in the name Boda-boda transport service (Singoro, et al 2016). Thus, motorcycle business still is one of the most popular enterprises, which offers employment opportunities to the youth by which they can generate more income and improve the quality-of-life motorcycles business offering the basic mode of transportation in both rural and urban areas (Luvinga, and Kilasara 2020). Conversely, young people especially the youth who have completed schooling in many parts of the country, remain unemployed influencing them to seek for alternative employment in motorcycle business as a way of self-employment (Mbegu and Mjema 2019). In recent decades, the statistics of youth employment in Motorcycle business is almost doubling every year (Kavuma, 2015).

In Africa, the rapid development of motorcycle taxis is a good example of the capacity for innovation which involves altering the initial use of a transport mode and its adoption by operators and users. According to the study conducted by Neema (2020) it is shown that up 2018 there was a rapid increase of motor cycles over 1,280,000 registered motorcycles and three wheelers which make up 59% (WHO, 2018). Also, the number of motorcycles and three-wheelers was almost 60% in 2019 – 2020 and above and it is about to increase more and in recent years (Neema, 2020). However, there are challenges such as fundamentally, substantially allocate and technical claims. Also, there are technical inefficiencies, and short-term solutions unlike long terms. Also there are pressure from groups, policy makers in shaping and re-defining urban transportation landscapes in an isolated manner. Motorcycle taxi operators observe no regulations, including simple ones such as stopping at traffic lights. Many motorcycle taxi riders don’t have driving licenses, do not wear helmets and have no qualms about driving in the wrong direction on one-way roads (Chiron, 2013). Therefore, the origin and growth of the motorcycle taxis in most African countries can be traced to the collapse of the bus transport services either directly provided by the state or contracted for and the deregulation of the market leading to the growth of informal operators. This means that the transport by boda boda has influenced the performance of both the retail and wholesale businesses in the economy which is the gap that this study sought to fill.

Wholesalers and retailers today are not only engaged in the constant exploration of strategies to the beat competition but also exploring strategies to help them stay relevant. The retail market involves selling goods to the final consumer through business enterprises which include sole traders, organizations, and partnerships. They provide the much-needed service of making goods available to customers in their locations and in convenient quantities. Retailing is buying direct from producers or wholesalers, then breaking the bulk into smaller quantities, displaying the goods for sale online or physically, and may also sometimes include delivery (Adu, Bishop, Barber, Divall, Krasnolucka-Hickman, Kiracho, Muhia, Mwaipoop, Rettie & Porter, 2018).

To enhance service delivery, wholesalers and retailers have had strategic collaborations with the motorcycle industry in service delivery solutions to deal with their deficiencies. The use of the motorcycle has grown over time globally and in Africa. Nigeria, South Africa, and Tanzania have the highest number of motorcycle in Africa, followed by Kenya, Algeria, Uganda, Egypt, Morocco, Angola, and Ethiopia in that order (Research & Markets, 2017). Nigeria has the highest number of motorcycles, with about eight million motorcycles operating across Nigeria (George, 2020). In East Africa, rapid motorcycle growth was mainly driven by a lucrative fiscal stimulus that decreased two-wheelers prices. In 2016, it was noted that Tanzania had the most commercial motorcycles.
in East Africa the region which was about one million motorcycles. On the other hand, Uganda was trailing with the smallest number of about two hundred thousand motorcycles (Muchira, 2016).

The importance of wholesalers and retailers in an economy cannot be gainsaid. However, the sector has been undergoing a difficult time that has seen some of the big retailers closing. A case in point in Kenya set up is Nakumatt which went into receivership in early 2018 after falling behind on its payments to suppliers, while Uchumi faced similar difficulties. The failure of the two big retailers had a big impact on the retail sector (Gamberini, 2020). Telma (2020) noted that, that domestic companies have historically had problems with managing costs, planning growth, managing their supply chains, and dealing effectively with downsizing. Other supply chain facing similar logistics problem is Tusky’s Supermarkets and Ukwala Supermarket. Any strategy that can be employed to ensure product cost management will assist the sector. Global Retail Development Index (GRDI), (2019) noted that there was a drop by more than five places in the global performance of retail markets in Kenya due to the harsh business environment that continues to frustrate retail businesses thus their exit from the market.

Any strategy that can reverse the trend in the wholesale and retail industry sector will be of great help. One challenge is high transport cost, motorcycles can be used as an alternative channel of transporting goods, this is because they are cheaper in terms of fuel consumption, affordable, and can easily maneuver through traffic congestion thus making delivery of products fast, convenient, and cost-effective. Several studies have been conducted in Kenya on public motorcycle transport. These studies have focused more on its growth and expansion (Howe & Davis, 2001; Mbugua, 2018; Muindi & Nyabuta, 2018). Though studies have indicated that there are benefits of motorcycles in the distribution channel, there is no conclusive study that has been conducted to investigate moderating effect of road safety and compliance training on the relationship between motor cycle accessibility market and performance wholesale retail business in Kenya. Thus, despite their increasing popularity, boda boda presents unique shortcomings from the view of the public interest; there growth has been without adherence to safety prescriptions as stipulated in the traffic laws of the various countries. Motorcycle distribution has been carried out with little consideration to proper operator training and licensing, safety precautions have been neglected, urban roads and highways are increasingly becoming unsafe as incautious and unknowledgeable bikers compete on the street for customers, in addition to safety, motorcycle growth has brought some undesired effects like crime, health and environmental problems (Kumar 2011). This is why this study sought to establish the moderating effect of road safety and compliance training on the relationship between motor cycle accessibility market and performance wholesale retail business in Kenya.

Makhanu (2015) in his study on motorcycle public transport services in Kenya: a study of their compliance with road safety regulations in Kitale municipality found out that most public motorcycle operators do not know traffic rules to observe. Their level of awareness of existing rules as stipulated in the Traffic Act Cap 403 laws of Kenya is very low, he also noted that compliance with road safety regulations was low among operators’ and the level of law enforcement of traffic rules and regulations by Traffic police was equally low, he recommended a consortium of stakeholders to come together to ensure that there is mutual agreement and ownership of the traffic rules and undertake trainings on the health hazards of motorcycles, and consequent effects on economic wellbeing. This will translate into better health and safer riding cutting on cost of medical care, loss of life and loss of earning ability, he proposed further research to determine the contribution of boda boda to the national economy. Training and compliance to safety regulations among boda boda riders have been key concerns in the motorcycle transport industry. This is because most riders lack the basic requisite road safety skills acquired through formal training. The result of this has been loss of lives due to accidents associated with motorcycle operation. According to the World Health Organization, (2016), 1.3 million lives are lost through crashes while 50 million injuries are recorded annually. All these, have been attributed to lack of training among the motorcycle riders.

This study aims to establish the moderating effect of road safety and compliance training on the relationship between motor cycle accessibility market and performance wholesale retail business in Kenya. This study was anchored on system theory and continues with a literature review, methodology, finding and discussion. Finally, this paper concludes with recommendations.

**Literature Review**

**Theoretical Review**

This study was anchored on the system theory is based on the relationship between the different parts of an organization or an organism. The major proponent of this theory is Ludwig Von Bertalanffy (1928) who argued that a system is a set of interrelated components that work in a certain environment to accomplish certain objectives. According to Chikwere, Cornell and Nwoka (2015) a system is a set of inter-dependence of components, whereby the way the components interact and are organized determined the operation capacity of the organization. The study by Chikwere et. al., (2015) established that system theory clarifies the complexity of organizations and the environment in which they operate in. Further, Chikwere et. al., (2015), imputes that the system theory clarifies the role of complex organizations in modern societies and how the components interrelate to enhance the efficiency of the processes for optimum output. The cost leadership strategy calls for the selling of standard products at a minimal price (Porter, 1985) combined with aggressive pricing of goods (Porter, 1980). Further, a business should enlarge its scope and strive to serve multiple industry segments at low cost due to economies of scale (Porter, 1985). Porter (1980) describes the core philosophy of this strategy as a vigorous pursuit of cost from experience, aggressive construction of efficient-scale facilities, managing customer accounts, tight cost and overhead control, and cost minimization in areas like sales force, research, and development, advertising, and service.
Business leaders should have great attention to cost control in order to achieve business goals. Achieving low cost while maintaining high quality, good service, and paying attention to other areas should be the focus of the entire strategy. Therefore, the cost leadership strategy involves providing high-quality products and services while underpricing everybody else (Kiechel, 1981).

According to Carrol and Tosi (1977) a system is a set of interrelated components operating within a boundary that is able to absorb inputs from other interacting systems and transforms the inputs into outputs that serve other system. This definition is in line with that taken by Turner (1991) who argued that systems are in a continuous state of interaction and is encompassed with frequent interrelating set of actions and sub-activities. Further, Turner (1991) imputes that the modern-day systems are institutionalized thus predictable, stable and congruent with the environment of operation. Turner further notes that by assessing how each part contributes to the systematic whole can be used to understand a social system and its constituent parts. This emphasizes on the importance of team synergy helps particular actors remain focused on their individual roles to achieve the overall potential, leading to arrangements that enable teams maximize their potential to act and think in a new synergy. The system theory is besought by various weaknesses especially that it does not prescribe or offer tools and equipment for management or how to organize the different components forming a system (Petula, 2005). The transport system is faced by several challenges due to lack of prescriptive tools and equipment on how the various actors should interrelate. Secondly, the theory is too complex making it hard to be applicable in practical problems and it views the organization and the environment as concrete items rather than dynamic and evolving entities.

In a sector like transport, various stakeholders play vital roles in the attainment of the overall sector stability. Systems theory in this study was vital in identifying interrelated components that are underplay within transport system. Key components in this study includes boda boda operators, Traffic police officers, bodaboda users, government agencies related to transport matters, medical personnel that attend to accident victims at hospitals and other road users. Some of the interrelated systems under this study includes; boda boda transport licensing, motorcycle repairs and maintenance, training of riders, insurance, traffic control and regulations. Systems theory was important in this study from different levels. The model helped in identifying effects that are related to boda boda business in the transport system. One of the reasons wholesalers and retailers are embracing motorcycles in their delivery is to minimize the cost of delivery to gain cost leadership. Thus, the theory relates to this study because the wholesalers and retailers have to scan the environment and embrace a viable organizational strategy that aims at modifying these forces in a manner that enhances the performance situation of the firm.

The early development of motorcycle transportation was noticed in England where a motorcycle taxi began in London city in the early 1950s. Motorcycle mainly provides a passenger taxi service, although they can sometimes be hired to move goods from one place to another (Mabula, 2018). In low- and middle-income countries, motorcycles are used as the means of transport which enable people to move from one place to another but this means of transport faces several challenges, including low level of personal protection equipment usage (Abia & Tache, 2017). Motorcycles can with utmost flexibility move through areas with heavy traffic, in addition to having good fuel consumption and relatively cheap and affordable servicing costs. Statistics from the Kenya National Bureau of Statistic (2019) and that of the Motorcycle Assemblers Association of Kenya (MAAK) show that there are approximately 1,400,000 registered motorcycles in operation only in Kenya as of the year 2018, with over 600,000 being used for commercial purposes.

Motorcycles are becoming increasingly popular for both personal and public transportation. As the world becomes more motorized, especially in countries that are ranked as low- and middle-income earners, and as many developing countries' transportation systems become more disorganized and inefficient, motorbikes are becoming an increasingly popular method of transportation (Kumar, 2017). About 33 motorcycles per 1,000 people are the current estimate for the number of motorcycles in use in the world. (Kenya National Bureau of Statistics [KNBS], 2018) is expected that the need for commercial motorbike services will continue to expand as the majority of people throughout the world need a flexible method of transportation. There are several advantages to owning a motorcycle, including low cost, wide availability, versatility, and even the ability to cross poorly maintained highways with ease (Nyachieo, 2020). According to Obura (2021) motorcycle taxis have a slew of advantages, but they also come with several substantial disadvantages. These negatives include poor road safety, environmental deterioration, and, most disturbingly, the concomitant crimes committed on motorcycles. In many African villages, communities, and cities, motorcycle transportation has become a common transportation means. The development of Kenya's motorcycle industry is critical to the country's economic well-being. Economic growth and poverty reduction can only be achieved if both resources and markets are easily accessible. As said, many developing countries may have difficulty accessing the aforementioned resources, which contributes to the transportation industry's lagging economic health (Runyan, et al., 2018). The increase in boda boda transport has led to improvement in business performance in both retailers and wholesalers since they are used to deliver goods to customers at a cheaper cost and are easily accessible.

Empirical studies show that the usage of motorcycles has become popular with retailers and wholesalers due to their ease of accessibility to the markets and low cost to the businesses. Commercial motorcycles utilization is increasing in many nations worldwide (Olvera et al., 2012; Peraphan et al., 2017). This increase in use of motorcycles is attributed to global growth of motorization and disorganized and unreliable other transport networks in numerous developing countries and the cost they charge the transport users (Mhegu & Mjema, 2019; Muchira, 2016). In most developing nations, the business usually attracts small and medium-sized investors. Politicians and the youth also count on commercial motorcycles as alternative employment (Olvera et al., 2012). Starkey (2016) argued that motorcycles are popular in the developing world because of their availability and accessibility to markets. Other inherent benefits, such as door-to-door operation and the capacity to enter narrow footpaths inaccessible by other.
driven modes, are fast speeds and cost-effectiveness compared with others. These qualities are making the usage of motorcycles by retailers for their last-mile delivery. Their ability of door-to-door delivery at minimal cost has seen wholesalers and retailers retain their customers, widen their customer base, and maintain profitability (Muchira, 2016).

Pongprasert and Kubota (2017) and noted that commercial motorcycles have other qualities that make them an attractive and convenient means of transport. For instance, their services are easily accessible. Secondly, they are not restricted to specific which is the case for other public transport vehicles, do not have a fixed schedule, and can provide services in a timely and personalized manner (Hariyatno et al., 2018; Jenkins et al., 2020). These qualities fit well with retailers and wholesalers whose customers are in different areas and have no fixed delivery schedules. Thus, any time customers need supply, the motorcycles fit well (Hariyatno et al., 2018). Operators enjoy significant economic benefits and regulatory autonomy, as this industry is still largely informal. Any person with a motorcycle, regardless of their capacities or skills to maneuver and operate the vehicle, could offer commercial transport services to those in need of it at any given time with the flexibility (Cano, 2018). Given the preceding, there has been a marked increase in the utilization of commercial motorcycles by retailers and wholesalers, especially in sub-Saharan Africa.

Mbugua (2018) examined the effects of the motorcycle transport revolution and the effect of the motorcycle industry and the economic growth of Kenya. He noted that motorcycles have contributed to the growth of the economy. Other studies that have been done relating to the motorcycle industry have mainly been on the transport sector such as an inquiry on the Boda boda as a means of transport accessible to urban low-capacity and rural folks in Uganda (Howe & Davis, 2001). Muindi and Nyabuta (2018) carried out a study on informal motorcycle businesses and livelihoods in urban areas of Kenya. This inquiry noted that motorcycles have massive improvement, development, and enhancement of the Kenyan economy as goods and commodities are transported in time from the farm to the marketplace as well as the human capital. This was again an indication that even the agribusiness was using motorcycles to reach the market. Nyabuta and Muindi (2018) did a study on review of the motorcycle phenomenon on livelihoods in Eldoret and Kakamega Municipalities and established that the informal commercial motorcycle operation is an important source of income to many poor urban households as it provides a steady flow of daily income both the motorcycle owners who happen to rent out their motorcycles and the operators. It also enhances the flow of goods from retailers to customers between different parts of the municipalities. Though studies have indicated that there are benefits of motorcycles in the distribution channel, there is no conclusive inquiry that has been conducted to investigate the strategic positioning and contribution of motorcycle strategic collaboration on the performance of wholesale and retail sector growth in Kenya. This study sought to establish the moderating effect of road safety and compliance training on the relationship between motor cycle accessibility market and performance wholesale retail business in Kenya.

**Road Safety and Compliance Training**

Transport connectivity on service strategic collaborations plays a key role for the growth and economic development for the manufacturers, wholesalers, and retail sector. In this study it refers to motorcyclist undergoing official training and having a valid driving license, outsourcing of qualified motorcyclists, participating in safety and security, ethical riding, motorcyclist have compliance documents such as protective clothes, helmet and reflective clothes and compliance of commercial motorcycles with overloading and over-speeding regulations (Connor & Loo, 2016).

According to the UN’s Global Plan for the Decade of Action for Road Safety (United Nations, 2011): Activity 4, to set and seek compliance with laws and evidence-based standards and rules for motorcycle helmets to reduce head-injuries. According to the WHO (2017) wearing a motorcycle helmet can reduce the risk of death by almost 40% and the risk of severe injury by approximately 70%. Effective enforcement of motorcycle helmet laws can increase helmet-wearing rates and thereby reduce head injuries (WHO, 2017).

The Study was conducted in Pakistan on knowledge, attitude and practice of drivers towards traffic rules and regulations in Multan using a cross sectional research design to generate data. The study revealed that most road accidents occur because of inadequate knowledge, poor attitude and risky practices of drivers to road safety measures in Pakistan. 65% of Commercial Motorcyclists do not use personalized protective equipment when riding motorcycle because of low knowledge which lead them to fail to comply with road traffic rule and regulations, and it was concluded that lack of knowledge about traffic laws and practices of drivers are the contributing factors to road traffic accidents in any country (Riaz & Shahid, 2018). The study was done in Malaysia revealed that about 93.6% of subjects strongly agreed that fastening seat belts and wearing helmets were significantly important to reducing the severity of injuries when accidents occurred. (Al-Naggar & Al-Jashamy, 2010). It was also mentioned that high speed and drivers’ non-compliance to road traffic rules and regulation had a significant role in the occurrence of road accidents on roads (Boniface et al., 2016) It could be that the same reasons contribute to accidents in Kenya but research is required to justify this hypothesis.

In Ghana there are no training schools for motorcycle riders (Ablin Consult, 2010). Studies indicate that most of the motorcycle riders lack formal training. They either learned to ride through family, friends or self-tuition. The majority of these riders do not possess valid licences (Nelson, 2016). Training has been limited to initiatives such as collaboration between the DVLA, the National Road Safety Commission (NRSC) and the Motor Traffic and Transport Directorate (MTTD) to train riders of motorcycles and three-wheelers before issuing licences. Riders of motorcycles are required by law to hold a Class A licence which permits them to operate such vehicles.

The study conducted in Nigeria on knowledge, attitude, and compliance with safety protective measures and devices among commercial motorcyclists, using a cross sectional descriptive study, the study revealed that 52.8% out of 307 respondents perceived
that using safety protective devices is not important and can only be observed in the case of meeting authorities on the road, the overall attitude of the respondents towards safety protective devices was poor (Isah, Yakubu, & Raji, 2018).

In Uganda, there is a national motorcycle helmet law which applies to riders and passengers, but no helmet standard has been mandated. Enforcement of this law is still worryingly low scoring one out of a possible ten (WHO, 2013). The helmet law is commonly broken with riders and passengers citing heat, or the possibility of getting lice or an infection, as reasons for non-compliance. Political interference has also been cited as one of the factors affecting the implementation of road safety laws. In Uganda, training is available for riders but it is principally carried out as part of projects. Amanyire and Kasima (2017) notes that motorcycles used as a means of public transport are ridden by untrained or ‘ill-trained’ riders. Motorcycle rider training schools are practically non-existent and motorcycle riders do not receive any rider training (Zanule, 2015). The Inspectorate of Vehicles is mandated to test learner drivers and riders (Uganda Police Force, 2013). However, the majority of the riders do not go through a driving school to get training and therefore lack the required competence. The study conducted in Uganda on road safety compliance among motorcyclists using a cross sectional design revealed that most of commercial motorcyclists in Kampala know that before starting riding a motorcycle one should have a driving training in order to reduce the likelihood of road crashes to occur. (Ndagire, Kiwanuka, Paichadzde, & Kobusingye, 2019). It is open that road traffic accidents in our road can be reduced by increasing knowledge among Commercial Motorcyclists, good attitude and good practices among drivers and other road users on complying with road safety rules and regulations.

In Tanzania, Transaid (2015) found that the majority of driver training schools do not offer any motorcycle training. Of those that do, the majority only offer classroom-based theory training as opposed to practical training or any training specific to carrying passengers. Transaid found that most driving schools are located in major urban centres. With minimal enforcement ability in rural areas, there is little demand for training and licensing, meaning that riders have to travel for many miles to urban centres to receive training which is often undesirable as it means missing valuable days of work.

The WHO (2017) Manual presents a case study on setting helmet standards in Kenya. The Kenyan Road Traffic Act requires motorcycle riders and their passengers to wear helmets that meet a national standard. Rather than articulating the standard itself, the law makes reference to a standard set out in a separate legal text by the Kenyan Board of Standards (KEBS), established in 1974 as the body in charge of testing, approving, stamping and monitoring a variety of products. While the helmet legislation in the Road Traffic Act may remain constant over the years, the way it is written allows the standard to be modified and updated without the need to change the legislation. In 2012, the Kenya Board of Standards/Vehicles Technical Committee (TC122) finalised a revision to the national helmet standard (KS77). Although the law is in place and the standard approved, in order for the standard to be put into effect it needs to be “published” by regulation and gazetted by the Minister of Transport. A 2014 study commissioned through the Bloomberg Initiative for Global Road Safety in Kenya into the availability and access to helmets meeting the new standard found that such helmets were largely unavailable on the Kenyan market. To date, the new standard is yet to be gazetted by the Ministry of Transport, allowing implementation of the standard and enforcement of the related law to be delayed until standard helmets are more widely available. Despite the enactment of NTSA (Operation of Motorcycles) Regulations, 2015 in Kenya, there was still statistical evidence that placed motorcycle related fatalities at 18% of the total road fatalities in Kenya (NTSA, 2015). This percentage increased by 48% in October 2020 (NTSA, 2020). Thus need for the study to establish if the moderating effect of road safety and compliance training on the relationship between motor cycle accessibility market and performance wholesale retail business in Kenya.

Research Methodology

This study adopted a positivist paradigm and adopted descriptive research design. The population of the study constituted 17,000 wholesale and retail businesses in the 47 Counties in Kenya. However, 10% of the counties were selected for the study according to Mugenda and Mugenda (2003) who argue that a sample of 1-10% of the target population is appropriate for scientific studies. Systematic sampling was used to select 5 counties from which a sample size of 383 was determined by the use of the Krejcie Morgan table and the respondents were identified through simple random sampling from the five counties. The study collected primary data using a structured questionnaire. The study ensured there is validity by undertaking a pilot study and reliability was checked by measuring the internal consistency of the questionnaire using Cronbach’s Alpha. Data were analyzed by use of both descriptive statistics and inferential statistics with the help of SPSS software. The coefficient of determination (R2) was used to establish if the model was statistically significant and the extent to which each of the independent variables explained the changes in the dependent variable. F-statistic was determined at a confidence level of 95% to determine if a significant association existed between motor cycle accessibility market and the performance of retail and wholesale businesses in Kenya.

Results and Discussions

The study sought to establish the moderating effect of road safety and compliance training on the relationship between motor cycle accessibility market and performance wholesale retail business in Kenya. The respondents were asked to indicate their level of agreement with motorcycle accessibility to the markets using a Likert scale of 1 to 5, where 1 was Strongly Disagree and 5 was Strongly Agree. The study adopted both descriptive and inferential analysis to form the conclusions and recommendations. The findings are presented here in Table 1.
### Table 1: Responses on Motorcycle Accessibility to the Markets

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>N</th>
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<th>SDA</th>
<th>Mean</th>
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<tbody>
<tr>
<td>Motorcycles services are easily reachable by our customer base</td>
<td>139(46.6)</td>
<td>133(44.6)</td>
<td>22(7.4)</td>
<td>4(1.4)</td>
<td>0(0)</td>
<td>4.19</td>
<td>0.70</td>
</tr>
<tr>
<td>Motorcycles operate in remote areas unreached by other modes of transport reaching more customers</td>
<td>117(39.3)</td>
<td>140(46.9)</td>
<td>39(13.1)</td>
<td>2(0.7)</td>
<td>0(0)</td>
<td>4.32</td>
<td>0.69</td>
</tr>
<tr>
<td>Motorcycles widen the customer base due to their easy access to them</td>
<td>110(36.9)</td>
<td>147(49.3)</td>
<td>39(13.1)</td>
<td>2(0.7)</td>
<td>0(0)</td>
<td>4.2</td>
<td>0.70</td>
</tr>
<tr>
<td>Motorcycles easily reach the inaccessible parts through narrow and poorly paved roads</td>
<td>100(33.6)</td>
<td>143(48)</td>
<td>51(17.1)</td>
<td>4(1.3)</td>
<td>0(0)</td>
<td>3.09</td>
<td>0.84</td>
</tr>
<tr>
<td>Inadequate and poorly designed roads have resulted in the increasing need for motorcycle transport in rural and urban areas which is imperative for wholesalers and retailers</td>
<td>98(32.9)</td>
<td>157(52.7)</td>
<td>41(13.7)</td>
<td>2(0.7)</td>
<td>0(0)</td>
<td>4.14</td>
<td>0.81</td>
</tr>
<tr>
<td>Increased accessibility of motorcycles to remote customers has increased their satisfaction which has increased their purchase in the wholesalers and retailers which employ motorcycles for delivery services</td>
<td>118(39.6)</td>
<td>159(53.4)</td>
<td>18(6)</td>
<td>3(1)</td>
<td>0(0)</td>
<td>4.16</td>
<td>0.64</td>
</tr>
<tr>
<td>The increased availability of commercial motorcycles makes transportation of goods easy in rural and remote areas.</td>
<td>59(19.8)</td>
<td>193(64.7)</td>
<td>44(14.8)</td>
<td>2(0.7)</td>
<td>0(0)</td>
<td>4.15</td>
<td>0.63</td>
</tr>
<tr>
<td>Many motorcycles can be accessed at any time for a small amount of money which has promoted the performance of wholesalers and retailers</td>
<td>93(31.2)</td>
<td>136(45.6)</td>
<td>67(22.5)</td>
<td>2(0.7)</td>
<td>0(0)</td>
<td>3.99</td>
<td>0.71</td>
</tr>
<tr>
<td>Overall Average Value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.03</td>
<td>0.72</td>
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</tbody>
</table>
From table 1, the parameter that had the highest average score was that “motorcycles operate in remote areas unreached by other modes of transport reaching more customers” which had an average score of 4.32, and a majority (86.2%) agreed with the statement. This was followed by “motorcycles widen the customer base due to their easy access to them” with a score of 4.2 and a majority (86.2%) agreeing with the statement. The third was a statement on “motorcycles services are easily reachable by our customer base” at a score of 4.19. All the other statements had scored more than average and the overall average was 4.03. These findings agree with those of Michael et al. (2012), who found that the use of motorbikes benefits the riders and their community, who get reliable and accessible transport services. The study then carried out regression analysis to test the hypothesis. Through regression analysis, the study tested the null hypothesis that there is no significant relationship between motorcycle accessibility to the markets and the performance of wholesale and retail businesses in Kenya. A simple linear regression analysis was conducted in which performance was regressed against access to motorcycle accessibility to the markets. The findings of this test were interpreted using the R², F- statistic, T-test statistics, and the P-values. The model summary results were as shown in Table 2.

The moderating effect of road safety and compliance training on the relationship between motor cycle accessibility market and performance wholesale retail business in Kenya

The study sought to establish the moderating effect of road safety and compliance training on the relationship between motor cycle accessibility market and performance wholesale retail business in Kenya

Table 2: Moderation Tests Using R Square and Significance Change

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Change</td>
</tr>
<tr>
<td>1</td>
<td>.870a</td>
<td>0.758</td>
<td>0.757</td>
<td>1.24771</td>
<td>0.758</td>
</tr>
<tr>
<td>2</td>
<td>.982b</td>
<td>0.963</td>
<td>0.963</td>
<td>0.48559</td>
<td>0.206</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1653.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: a. Predictors: (Constant), Motor cycle Accessibility Market, b. Predictors: (Constant), Motor Cycle Accessibility market *Road safety and compliance training

This section provides results of analysis on the effect of the independent variable on the dependent variable before and after introducing a moderating variable. The independent variable herein is; motor cycle accessibility market with road safety and compliance training of motorcycle riders as the moderating variable. R square also referred to as coefficient of determination and significance tests were done to determine the effects of the predictor variables on the dependent variable. The R square and the overall significance of the model were analyzed before and after introducing the moderating variable to the independent variable. The introduction of the moderating variable introduces an interaction effect on the prediction strength of the independent variable. The interaction effect leads to either a stronger or weaker prediction power of the independent variable on the dependent variable. In this study, interaction effect was created by use of the product between predictor variable and the moderating variable.

Table 2 shows the results of the R-square before involving the moderating variable (road safety and compliance training of motorcycle riders) and after incorporating the moderating variable to the independent variable (performance wholesale retail business). The results indicate road safety and compliance training of motorcycle riders had a positive moderating effect on motor cycle accessibility market (R squared change of 0.206) which translates to 21.39% change in the R-square. Results show that after introducing the moderating variable (road safety and compliance training of motorcycle riders) the R-square improved from 0.758 to 0.963 and was significant (0.000) since the R-square became stronger. This means road safety and compliance training of motorcycle riders’ moderate motor cycle accessibility market and performance positively and statistically significant. The findings imply that training of motorcycle riders on road safety and compliance is very important in improving the performance of wholesale and retail sector in Kenya. The findings shows that majority of the motorcycle riders have been trained on road safety and they are compliance with the rules and regulations laid down by NTSA.

Table 3: ANOVA Test for Motor Cycle Accessibility Market with Moderating Variable

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>1434.72</td>
<td>1</td>
<td>1434.72</td>
<td>921.588</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>459.253</td>
<td>295</td>
<td>1.557</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1893.97</td>
<td>296</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Regression</td>
<td>1824.64</td>
<td>2</td>
<td>912.322</td>
<td>3869.03</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>69.326</td>
<td>294</td>
<td>0.236</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1893.97</td>
<td>296</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: a. Dependent Variable: Performance_1, b Predictors: (Constant), Motor cycle Accessibility Market, c Predictors: (Constant), Motor Cycle Accessibility market *Road safety and compliance training

Kinyua et al., International Journal of Research in Business & Social Science 12(5) (2023), 474-485
The ANOVA results for motor cycle accessibility market with moderating variable in Table 3 indicates that the model was significant with F=3869.03 and p=0.000<0.05 meaning that motor cycle accessibility market and road safety and compliance training of motorcycle riders had significant effect on performance of wholesale and retail sector. A further test on the beta coefficient of the resulting model in Table 4 shows a significant change in the beta coefficients before and after the introduction of the moderating variable. The model remained statistically significant with p value= 0.000 < 0.05.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-15.603</td>
<td>0.668</td>
</tr>
<tr>
<td>Motor cycle Accessibility Market</td>
<td>4.811</td>
<td>0.158</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-0.044</td>
<td>0.463</td>
</tr>
<tr>
<td>Motor cycle Accessibility Market</td>
<td>-1.218</td>
<td>0.161</td>
</tr>
<tr>
<td>Performance *Motorcycle riders Training</td>
<td>0.588</td>
<td>0.014</td>
</tr>
</tbody>
</table>

Note: a Dependent Variable: Performance

In order to determine the significance of coefficients Table 4 shows the coefficients of the regression equations for both models. Model 1 indicates that the coefficient of for motor cycle accessibility market (4.811) was positive and significant. In model 2 the interaction term for motor cycle accessibility market* road safety and compliance training of riders was found to be significant implying that road safety and compliance training of motorcycle riders was found to have significant moderation effect in the relationship between motor cycle accessibility market and performance of wholesale and retail sector in Kenya.

The equations for moderations were captured in the following equations;

\[
\text{Performance} = -15.603 + 4.811 \times \text{Motor cycle Accessibility Market}\ + \varepsilon
\]

\[
\text{Performance} = -0.044 -1.218 \times \text{Motor cycle Accessibility Market} + 0.588 \times \text{Motorcycle riders training}\ + \varepsilon
\]

The findings in this study agree with studies done by other scholars about motorcycles and business performance. Olvera et al., (2012), noted that, in Kenya, there is evidence of increased usage of motorcycles that leads to enhanced business performance in the country. The usage of the motorcycle was a result of their easy access to different areas (Peraphan et al., 2017). Further, this increase was noted to be attributed to the worldwide growth of motorization, the poor and unreliable transport infrastructure systems, and low-cost motorcycles in terms of purchase and maintenance compared to motor vehicles. Motorcycles are considered reliable and more readily available due to their accessibility to different parts of the country (Starkey, 2016). This makes them a good alternative for wholesalers and retailers in the delivery of goods to their customers.

**Conclusion**

The study concluded that the accessibility of commercial motorcycles to the markets and the performance of wholesale and retail businesses in Kenya were statistically significant. The ease of commercial motorcycles to reach customers faster, accessing remote areas and their ability to access narrow and poorly paved roads at low cost have made the motorcycles useful in solving transportation issues. The study concluded that the increased availability of commercial motorcycles has made transportation of goods easy in rural and remote areas which has promoted wholesale and retail businesses in return. Study further sought to establish the moderating effect of road safety and compliance training on the relationship between motor cycle accessibility market and performance wholesale retail business in Kenya and the findings showed that training of motorcycle riders on road safety and compliance is very important in improving the performance of wholesale and retail sector in Kenya. The findings also shows that majority of the motorcycle riders have been trained on road safety and they are compliance with the rules and regulations laid down by NTSA.

Due to motorcycle accessibility to the markets, the study recommends that there is need to engage motorcycle delivery services to easily access more customers in remote areas, thus reaching more customer base faster. The government should formalize and regulate the activities of commercial motorcycle operators to strengthen the business. It is also recommended that those in charge of road safety and compliance, in this case NTSA, should uphold and enhance official training of the commercial motorcycle delivery solution providers.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Conflicts of Interest: The authors declare no conflict of interest.

References


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