

## **INFLUENCE OF TECHNOLOGY ADAPTATION ON PERFORMANCE OF AUTO-GARAGE ENTERPRISES IN TURKANA COUNTY KENYA**

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**Abstract:** *The aim of study was to determine the influence of technology adaptation on performance of auto garage enterprises in Turkana County, Kenya. The study utilized resource dependency theory. The main target group was business owners in Lodwar town within the Turkana County. A descriptive survey was utilized so as to ascertain the quantity of business owners. 30% was sampled from a population of 520 businesses giving a Primary data of 156 businessmen who were randomly selected using proportional sampling technique. The survey involved collecting data through questionnaires to the sample. Statistical packages by social sciences accustomed analyze data. Data was then presented using tables and graphs, then analysis using a combination of descriptive and inferential statistics were utilized. Results of univariate regression revealed that technology adaptation has a positive and significant influence on performance of auto garage businesses in Turkana central constituency. This study concludes that technology adaptation affects performance of auto garage businesses in Turkana central constituency. In order for the auto garage enterprises in Turkana Central constituency and across Kenya to improve their performance, it is imperative that they pay attention to all forms of disruptive technologies for financial analysis and security, procurement operations and accuracy of stock management practices.*

**Keywords:** *Employee Technology Adaptation, Resource Dependency, Disruptive Technology*

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### **Introduction**

Higher levels of economic activity and the provision of new commodities and services that alter human lives and their potential are made possible in large part by technological innovation. We now have contemporary medical technology, better maternal health, lower mortality rates, computers, cell phones, and automobiles, among many other things, thanks to technical innovation (Zahra & Wright, 2016). We currently live in an industrial and technology age where the internet has changed the global market into something like to a small town with knowledge-based competitiveness. When seen in the context of Kenya, the ICT industry has experienced rapid expansion in recent years. The way things are done now—in the social, economic, and even political spheres—has altered as a result. The GOK has adopted digitization in most of its processes rather than falling behind. Driving and even business license applications, KRA tax returns, government tendering processes, and most recently land ministry processes, among other things, have all been digitalized.

Technology-push or market-pull are the two main driving forces behind the adoption of new technologies. When an innovation is produced without considering market research and then aggressively pushed to market, this is known as "technology-push" (Choi, 2018). The market is therefore compelled to adopt the technology, either because of its superiority or as a result of provider pressure. Only a few businesses, like medicines, whose product offerings are requirements or have little competition, benefit from such a push approach. When

a market pull occurs, new technology emerges in response to a recognized social demand (Hoti, 2015). The creation of a product or products is required to address a market demand that has been identified through market research or by potential customers. Prospective customers who want existing items improved can sometimes be the first to initiate market pull. As an illustration, consider the hybrid car technology, which was created in response to consumers' growing desire for environmentally friendly goods (Menna & Walsh, 2019). Much has been written about the idea of technology, and in reality, evidence shows that technologically creative businesses perform better.

It is overwhelmingly acknowledged that SMEs have gotten progressively significant in lessening the speed of joblessness through independent work, riches creation and advancement. According to the Kenya private area collusion brief of 2016; SMEs contributed up to 98% of GDP, 50% of common laborers and 25% of enterprises. On more extensive African point of view, SMEs is pivotal for African development contributing very 45% work and 33% to GDP. In most African nations, the inclination to stretch out the class of youth to 30 years and past is by all accounts an impression of the rising marvel of delayed time of youth reliance (Benjamin et al, 2013). In 2017, Kenya recorded 39.1 percent as indicated by the ongoing report by United Nations; HDI. The most recent insights actually mirror a shockingly high youth percent which as organization's drawback because of brutal financial climate. Kenya has the most ideal percentage in the continent. Nations like Ethiopia, Tanzania, Uganda and Rwanda have recorded a lower percent contrasted with Kenya. A more profound investigation of the numbers uncovers a larger than average segment of populace loaded up with persistent joblessness, anyway measurements haven't adequately been featured. With citizens underneath the age of 34 now at 9.93 million, more than 1/2 the enrolled 19.61 million. One in everything about lead youth strengthening programs, the National Youth Service, is currently an indicator of corruption rather than job creation (Sahu et al., 2018). Entrepreneurship is therefore the foremost source of employment, process, innovation, quality service and economic flexibility. This study therefore sought to establish the influence of technology adaptation on performance of auto garage enterprises in Turkana County, Kenya.

### **Problem Statement**

The SMEs play a vital role in the Kenyan economy, contributing to more than 50% of newly created jobs (Economic Overview, 2016). The small and medium-sized auto garages assist the county generate cash and offer a strong platform for job growth. Technology adoption and entrepreneurship have always gone hand in hand. Because of this, every industrial revolution was either started by important entrepreneurs or it created business opportunities. Like in previous surveys, the Economic Survey report (KNBS, 2018) indicated that the informal sector accounted for 83.4% of all employment during the study period and that participation in the sector increased by 5.6% in 2017. Additionally, the population increased from 45.4 million in 2016 to 46.6 million in 2017. According to the 2016 Kenya Investment Climate Report, 73% of SMEs believed that, among other things, having restricted access to technology was a barrier to their success. The globe is getting smaller, thus only tech-savvy businesses will survive since adoption saves time. By removing knowledge asymmetry, it also levels the playing field and decreases monopolies in entrepreneurship. The backdrop of auto garages would be appropriate given that, according to KNBS (2016), this industry leads in terms of economic activity in the service sector and has the highest annual turnover rate of 68.5%. This study evaluated how technology adaption affected auto garage performance in Turkana central constituency, Turkana County.

### **Objective of the Study**

To determine the influence of technology adaptation on performance of auto garage enterprises in Turkana central constituency, Turkana County.

## **Significance of the Study**

The county governments have positive impact on the country's GDP. In addition, is providing direct as well as indirect employment opportunities. This study and its findings provide policy with critical information which they can use in ensuring that there are adequate policies to address the issue of technology adaptation among SMEs in the counties. Scholars who may wish to conduct further studies in this area will find this study useful for their empirical literature review. To individual entrepreneurs, the outcomes of research may guide on the influence of technology adaptation in establishing and running a successful auto garage enterprise in Turkana central constituency of Turkana County.

## **Theoretical Foundation of the Research**

### **Resource Dependency Theory**

Pfeffer and Salancik (1978) proposed the idea to bring an understanding to how resource dependency guides the operation of the organization. The idea argues that captivated with external resources can guide the adoption of policies and programs in corporation yet as its success. The speculation argues that organizations are keen about resources which come from the external environment and owned by other organizations and a result, there's a necessity for cooperation (Pfeffer & Salancik, 2003). The theory presents that organizations need resources for survival and also the theories come from the external environment of operations. There's a requirement for a company to cooperate with other organizations to realize its goals. The SMEs policy for example, can only achieve success if the county is in a position to forge collaborations that aim to maximize its resources. The study therefore used the resource dependency theory to elucidate on technology which affects performance of small and medium size auto garage enterprises at Turkana County.

## **Empirical Literature Review**

### **Technology Adaptation and performance of SMEs**

Technological innovation is believed to boost organization's performance stimulates growth and also the survival of the organization. There are five ways of measuring performance of SMEs, like quality, time, finance, customer satisfaction, and human resource. The adoption of open innovation program by the SMEs has given them an opportunity to face the hardships of competition with the large firms (Zhang & Chen, 2014). Further, the commercialization of technology by the SMEs makes them to perform better within the market compared to the alternative firms. Moreover, the subcontracting of SMEs has made them to increase their economic performance, since the activity of assistance has helped within the adoption newer technologies (Kumar & Subrahmanya, 2010). Similarly, the SMEs are achieving the competitive advantage in response to the changes within the market with the help of technology adoption.

The newer technologies make the firm perfect per the changing demand. The technological capabilities of a firm play a pivotal role within the expansion of business. The research studies of Hamid and Tasmin (2013) and other researchers have shown the evidence of increase in firm performance due to innovative capabilities of a firm (Subrahmanya et al., 2010). The KM capabilities allow practice to be simpler and assure a positive impact on innovation performance by adapting them to vary (Alegre et al., 2011). Technological innovations are a pre-necessary condition for a knowledge-oriented business unit that promotes not only the economic competitiveness of the total country, but also the welfare of each entrepreneur and also the society (Ciemleja & Lāce, 2008). Innovative firms with growth of factor inputs would be able to achieve better economic performance within the kind of upper sales growth (Subrahmanya, 2011).

The various associations between the turnover growth of SMEs and their interest in incremental innovation has important implication to the policy makers, where they'll prepare the policies which are helpful for the expansion of SMEs (Hassan et al., 2013). SMEs should network, through networking, which they must recruit skilled personnel. SMEs should be knowledgeable or seek information about the supporting institutions (Mbizi et al., 2013). The SMEs should be capable to adopt newer technologies to increase their business performance. The research work of Hamid and Tasmin (2013) observed that the performance of firm depends upon the technical capabilities of a firm.

### Conceptual Framework

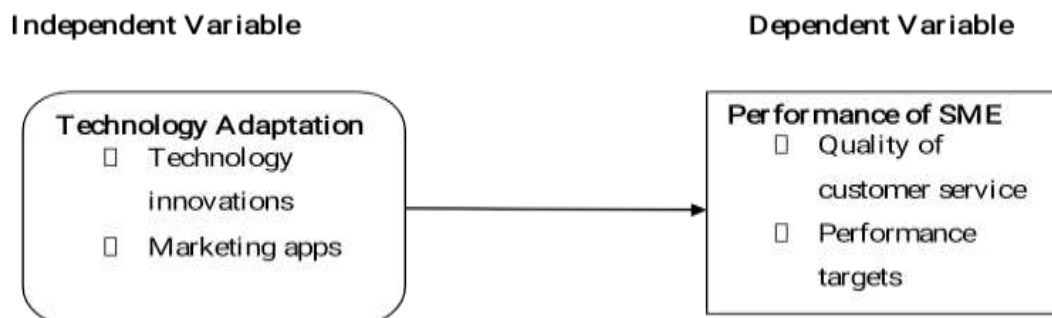


Figure 1: Conceptual Framework

### Research Design

According to Akhtar (2016), a research design is that the plan that a researcher chooses to follow so as to answer the objectives of the study. This study adopted a descriptive survey design. Descriptive surveys help a researcher to be able to gather data from a sample of population so as to create inference about the complete population as at the time of closing the survey. In line with Creswell and Clark (2015), descriptive studies pander to one or more quantifiable variables about the population. The researcher’s decision to adapt a descriptive study was informed by the necessity to assemble information on actual state of social economic dynamics on auto garage performance at Lowdar town Turkana County at the time of the study. By using descriptive survey, the researcher was able to gather data from an outsized sample of business people drawn from different sectors of the industry so as to create conclusions about the complete industry.

### Target Population

The purpose of completing this study was to determine the influence of social economic dynamics on firm performance of auto garage at Turkana County. A target population could be a bundle of things, objects, people, or cases with several shared observable features (Mugenda & Mugenda 2003). It’s a selected population about which a chunk of data is to be gathered. Etikan, Musa and Alkassim (2016) further define the target population as a whole set of things or cases from which a sample may be drawn. As per Gray (2014), a target population should encompass variety of observable features that the investigator seeks to require a broad view of the study outcomes. So as to answer the researcher questions during this study, the researcher targeted auto garage enterprises business owners operating in Lowdar town Turkana County. In Lowdar sub-County there are 520 registered small and medium enterprises (Turkana County government trade department 2019).

### Sampling and Sample Size

In keeping with Cooper and Schindler (2010), a sample size of 30% participants or elements is important for generalization purpose. So as to ascertain the amount of business owners 30% are was sampled from a

population of 520 businesses. Primary data from 156 business owners who were randomly selected using random sampling technique.

### **Data Collection**

Self-administered questionnaires were utilized in collecting primary data from the business owners. The questionnaire for the business owners incorporated different sections which contained questions about various variables under study. Section one encompassed demographic data, section two accommodated questions referring to work life balance and section three encompassed questions on firm performance. The questionnaires were administered to the respondents face to face while adhering to the best level of ethics and confidentiality during the information collection process. The questionnaire was pre-tested before the particular study. The researcher administered the questionnaire with the assistance of six enumerators. The enumerators were trained beforehand on the handling of the research tool and briefed on the subject under study before being allowed to gather data. They were supervised closely by the researcher during data collection. The questionnaire contained both open and closed questions. The closed ended questions adopted Likert scale. The open-ended questions geared toward soliciting demographic information of the business owners and giving them a chance to specify their views on various issues associated with social economic dynamics on auto garage performance. According to Mugenda (2009), a questionnaire reduces bias, enhances credibility and is very important in gathering of primary data from a bigger number of participants within a brief time-frame.

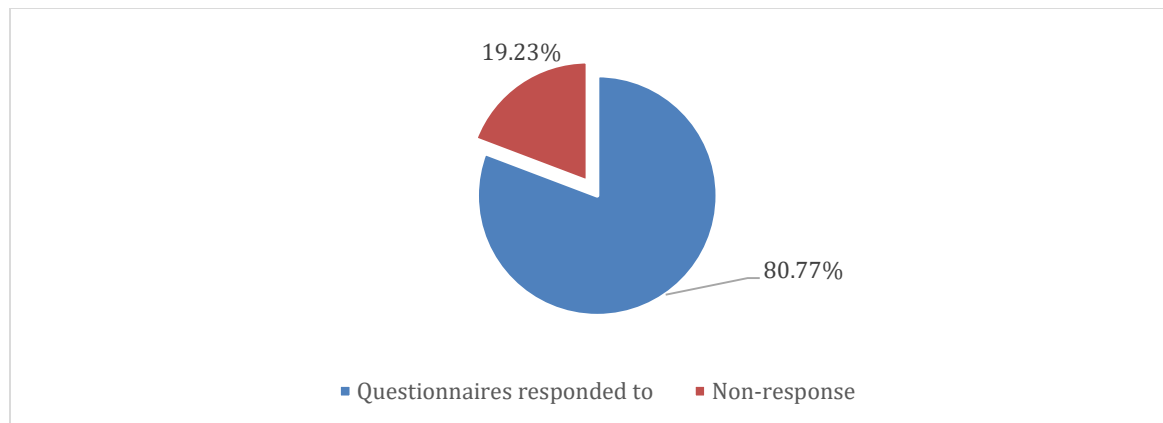
### **Data Analysis**

The purpose of this study is to ascertain the influence of social economic dynamics on firm performance of auto garages at Turkana County. So as to look at this relationship, Pearson Product-Moment correlation was computed. The collected questionnaires were sorted for completeness in preparation for coding. Once coded, data was entered into the Statistical Package for Social Sciences (SPSS) version 24 for analysis. Tables and graphs were used for data presentation.

### **Research Findings and Discussions**

#### **Response Rate**

A total of 126 of the 156 questionnaires that were distributed to the respondents were completed and handed back for data processing. As a result, the study received a high questionnaire response rate, as shown in figure 3 (80.77%). A study is regarded suitable for analysis when it has a questionnaire return rate of more than 50%, as per Linder and Wingerbach (2002). According to the authors, surveys with a high response rate offer confidence that the results can be extrapolated to the population from which the sample was taken. The fact that the researcher personally distributed the questionnaires to the respondents is what led to the study's high response rate.



**Figure 2: Response Rate**

**Source: Research Data (2022)**

**Demographic Information**

Gender, level of academic qualification, number of years operating a business are presented in *Table 1* alongside number of employees as well as profit margin.

*Table 1: Demographic Information*

Demographic/ characteristics	Business	Category	Frequency	Percent (%)
<b>Gender</b>		Male	74	58.7
		Female	52	41.3
<b>Level of Education</b>		KCPE	9	7.1
		KCSE	69	54.8
		Certificate/Diploma	34	27
		Degree	14	11.1
<b>Number of Years Operating Business</b>		Less than 2 years	11	8.7
		2-10 years	75	59.5
		11-20 years	24	19
		>20 years	16	12.7
<b>Number of Employees</b>		1-10	109	86.5
		11-20	17	13.5

As shown in *Table 1* above, of the 126 respondents, 58.7% were male while 41.3% were female. This indicates that females are also engaged in the business of auto garage repairs and that the sector is not completely dominated by male owners. All of the study's respondents had had a formal education, the majority of them up to the secondary level (54.8%), followed by the college level (27%), the university level (11.1%), and primary level (7.1%). They thus contributed trustworthy data to the investigation. Moreover, 59.5% of auto garages have been in operation for between two and ten years; 19% have been in operation for between eleven and twenty years; 12.7% have been in operation for more than twenty years; and 8.7% have been in operation for less than two years. Further, as is common with small businesses in Kenya, majority of auto garage businesses in Turkana Central Constituency employ between 1 and 10 employees (86.5%) while 13.5% of the businesses have between 11 and 20 employees.

**Descriptive Analysis**

**Technology Adaptation**

*Table 2: Descriptive Results on Technology Adaptation and SME Performance*

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Mean</b>	<b>Std Dev.</b>
We employ the use of ICT in specific areas in my business	2.4%	3.2%	17.5%	35.7%	41.3%	4.10	0.96
We effectively and efficiently leverage on ICT in my business	0.8%	3.2%	17.5%	38.9%	39.7%	4.13	0.87
The use of ICT fastens procurement operations.	2.4%	5.6%	15.9%	40.5%	35.7%	4.02	0.98
The use of ICT improves business financial management and security.	4.8%	3.2%	17.5%	35.7%	38.9%	4.01	1.06
The use of ICT improves accuracy of stock management and business profit margin.	5.6%	2.4%	15.1%	38.9%	38.1%	4.02	1.07
The use of ICT in business increases market share and profit margin	6.3%	5.6%	15.9%	35.7%	36.5%	3.90	1.15
<b>Average</b>						<b>4.03</b>	<b>1.01</b>

**Source: Research Data (2022)**

As indicated in *Table 2* above, majority of respondents (mean =4.1) agreed that they employ the use of ICT in specific areas in the business whereby only 5.6% disagreed. A standard deviation of 0.96 demonstrates low variance in the responses provided to the statement above. Similarly, majority agreed that they effectively and efficiently leverage on ICT in their business (mean =4.13) and only 4% of all the respondents disagreed. With regard to whether the use of ICT fastens procurement operations, majority of participants in the study agreed (mean =4.02) with low spread of responses across the sample as shown by a standard deviation of 0.98. on

whether the use of ICT improves business financial management and security, majority of respondents indicated agreement (mean =4.01) and with a standard deviation of 1.06, variation of responses among respondents was relatively low. Another statement aimed to determine whether the use of ICT improves accuracy of stock management and business profit margin whereby majority (mean =4.02) as only 7.8% of the respondents disagreed. The last statement examined whether the use of ICT in business increases market share and profit margin. In this regard, majority of respondents, (mean =3.9) agreed with only 11.9% disagreeing. On average, a mean of 4.03 shows that majority of the respondent agreed that technology adaptation affects performance of auto garage businesses in Turkana Central Constituency.

**Performance of auto garage enterprises**

*Table 3: Descriptive Results on Performance of auto garage enterprises*

Statement	1	2	3	4	5	Mean	Std Dev.
Meeting performance targets	4.0%	4.0%	8.7%	39.7	43.7	4.15	1.01
Coming up with new ideas.	4.8%	6.3%	6.3%	46.8	35.7	4.02	1.05
Increased sales	5.6%	4.0%	3.2%	38.9	48.4	4.21	1.07
Working for the overall good of the company.	7.9%	5.6%	4.8%	41.3	40.5	4.01	1.18
Developing skills needed for future	4.8%	4.0%	6.3%	45.2	39.7	4.11	1.02
<b>Average</b>						<b>4.10</b>	<b>1.07</b>

From the findings as shown in *Table 3*, majority of respondents agreed that the business has been able to meet performance targets as shown by a mean of 4.15. Similarly, a mean of 4.02 shows that majority of respondents agreed that their businesses have been able to come up with new ideas with low variation in responses on this claim as confirmed by a standard deviation of 1.05. On whether the business has been able to record increased sales, majority of the respondents agree, mean is 4.21. Another business performance metric was to determine whether employees were working for the overall good of the company whereby majority of respondents, mean 4.01, agreed and only 13.5 percent of the respondents disagreed. With regard with the claim that the business has been able to develop skills needed for future, majority of the respondents as shown by a mean of 4.11 agreed. Overall, as shown by a mean of 4.1, majority of the respondents agreed that the business has improved in performance.

**Regression Analysis**

The results of the univariate regression model used in this investigation is shown in *Table 4*.

**Table 4: Univariate Regression Results**

R	R Square	Adjusted R Square	Std. Error of the Estimate		
.628	0.394	0.389	0.589471		
	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.013	1	28.013	80.619	.000



Residual	43.087	124	0.347		
Total	71.1	125			
	<b>Unstandardized</b>		<b>Standardized</b>		
	<b>Coefficients</b>		<b>Coefficients</b>		
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
(Constant)	1.064	0.342		3.108	0.002
Technology Adaptation	0.753	0.084	0.628	8.979	0.000

a Dependent Variable: Performance of Auto garage

**Source: Research Data (2022)**

The results revealed that technology adaptation has a positive and significant influence on performance of auto garage businesses in Turkana central constituency with a beta value of 0.753 and p-value of 0.000 which is less than  $\alpha = 0.05$ . This implies that for each unit increase in technology adaptation, there is an improvement in performance of auto garage businesses in Turkana central constituency. This suggests that effective technological adaptation results in an improvement in the performance of auto garage businesses. This supports the claim made by Zhang and Chen (2014) that small and medium-sized enterprises now have the opportunity to compete with larger companies despite the challenges of doing so. Additionally, SMEs outperform rival companies in the market thanks to the commercialization of technology by these companies. The research investigations by Hamid and Tasmin (2013) also provide evidence of an improvement in business performance brought on by a firm's capacity for innovation as a result of technology adoption. By adjusting them to different situations, the KM skills make practice easier and ensure a beneficial impact on innovation performance (Alegreet al., 2011).

**Conclusions of the Study**

Based on the summarized study findings, there is a positive and significant influence of technology adaptation and performance of auto garage enterprises in Turkana Central constituency. This study therefore concludes that technology adaptation positively and significantly impacts performance of auto garage enterprises in Turkana Central constituency. Improvement in technology aspects such as employing use of ICT in specific areas in the business, effectively and efficiently leveraging on ICT, using ICT to fasten procurement operations, using ICT to improve business financial management and security, and using the same to improve accuracy of stock management and business profit margin would increase performance of auto garage enterprises.

**Recommendation**

In order for the auto garage enterprises in Turkana Central constituency and across Kenya to improve their performance, it is imperative that they pay attention to all forms of disruptive technologies for financial analysis and security, procurement operations and accuracy of stock management practices.

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