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Analysis of Technology Adoption by the SMEs/Artisan in Leather Products Manufacturing Processes in Kenya

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Abstract: *Technology adoptionhas a major impact on the quality and quantity of goods manufactured. For many years the Kenya SMEs have been using technology in leather foot wears and leather goods manufacture.However, the SMEs/Artisans have lagged behind in adopting the current state of art in the manufacturing since they use out dated technologies. This paper explores the level of technology adopted by the SMEs/Artisans in the leather footwear and leather goods manufacturing firms in Kenya to determinethe major determinantsof suchtechnology adoption. Eighty one (81) SMEs/Artisans in the leather manufacturing sector were sampled using a simple random sampling technique.Structured questionnaire was designed to facilitate the acquisition of relevant data. Descriptive statistics which involves simple tables, percentage graphs, charts and illustrations was tactically applied in data presentations and analysis. From the findings none of the firmshad adopted the soft technology while only 6% adopted the hard technology which involved the machines.Financial constrain was cited as the main reason for the low rate of technology adoption. Others include insufficient technical skills, commitment failures by top management and competition. As means of solving the above challengesit was recommended that the government policies such as financial supports and tax incentives should be implemented. Others included provision ofleather technology machines and skills training centres for such machines tothe SMEs/Artisans involved in leather sector in Kenya.*

Key words: *Small and Medium Enterprises, Technology Adoption, LeatherFootwear and Leather Goods*

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I. Introduction

Leather is the one of the most widely traded commodity in the world. By 2010 leather had an estimated value of US$ 100 billion(UNIDO, 2010) and in 2013, leather footwear accounted for half that figure, amounting to US$ 53.5 billion. Despite the growing global market for leather products such as footwear, fine leather, handbags, and auto upholstery, African countries, including Kenya, remain marginal players (World Bank Group, 2015). Currently Kenya is a minor player in the global market fetching only US$140 million of the total market share. It is also significantly less competitive than global leaders including China, Italy, and Vietnam in all competitiveness indicators, except availability of and access to raw materials(World Bank Group, 2015). Leather footwear production in the country currently stands at 10 million pairs per annum of which 85% is produced by SME_S (p.a.)(Mudungwe, 2012). This is in agreement with the economic survey by Kenya National Bureau of Statistics report of 2017 which indicated that 98% of all the businesses in Kenya are owned by SMEs and employ about 50% of the work-force(KNBS, 2017). Small and medium-scale enterprises (SMEs) are the backbone of the industrialization process of many developed countries and play a crucial role in increasing a country's economy(Yusuff , Chek , & Hashmi , 2005). Generally, SMEs account for the largest proportion of established businesses in most of the developing nations(Ramayah, Mohamad, Omar, Marimuthu, & Leen, 2012).

The term technology adoption refers to the decision-making process of an individual firm to utilize and implement a technology. It can also mean a choice to acquire and implement a new innovation.(Mahmood, Din, & GhaniI, 2009). On the other side, according to(Premkumar & Roberts, 1999) and(Rogers, 2003),adoption is consideredasa decisionto usean innovation fullasthebestcourseofaction.This studyusedadoption broadlyencompassinggeneration,development, and implementationof the technologies used in leather goods and footwear production(Damanpour, 1991). According to (Ardjouman, 2014) the most critical elements that determine technology adoptions are cost and lack of awareness. In 2013,(Giovanni & Mario, 2013) explained that cost include cost of purchase, training and maintaining a given technology. (Alila & Ove, 2011), noted that the role of government in technology adoption and use is a very important factor in the integration of the technology by SMEs. For firms to benefit from technology adoption it must be supported by other "softer" improvements such as training workers, workers empowerment, quality leadership and improvement of

infrastructure whichincreases the total amount of investment needed for a particular technology to be adopted (Yusuff , Chek , & Hashmi , 2005).

A study by(Ghimire & Abo, 2013) on SMES in West Africa indicated that adoption and use of technology by SMEs depended on the decision of the owners. The manufacture of the main categories of leather goods continue to follow the traditional sequence of operations: designing , cutting; splitting;, skiving; assembling; sewing; fixing accessories; and finishing. There has been an advance in the technology of leather goods manufacture over the decades. For instance, shoe designing has evolved from sketching using pencil and paper to the use of computer aided design (CAD). CAD/CAM in the footwear industry is the use of computers and graphics software for designing and grading of shoe upper patterns and, for manufacturing of cutting dies, shoe lasts, and sole molds. Today, there are 2D and 3D versions of CAD/CAM systems in the shoe industry(Kumar & Gupta, 2015). With CAD/CAM software, footwear manufacturers can cut their time to market dramatically and so increase market share and profitability. In addition, the power and flexibility of the software can overcome restrictions to the designer's creativity imposed by traditional methods(Kumar & Gupta, 2015). The SMES involved in leather goods manufacturing in Kenya have been lagging behind in the production of quality products and have a weak presence in the global arena because of various challenges. For the Kenyan leather sector to be competitive the challenges need to be tackled amicably.

1.1 Problem Environment

The Kenya's leather subsector has a potential estimate of about Ksh.125 billion of which only Ksh.10.6 billion has been realized. From the 2013 data of UN on leather products also, Kenyan export value stood at 5% (US$6.7 million) on raw hides and skin, 89% (US$131million) on wet blue& crust, 2% (US$3.5) on finished leather and 4% (US$5.6 million) on the leather products which include: US$2.8 million on footwear, US$ 2.25 million of handbags and US$0.6 million on other products(World Bank Group, 2015). Low level of technology adoption among the Kenyan SMEs/Artisans in leather footwear and leather goods manufacturing firmsisone of the factors which have led tosuch low level of exports of finished leather (4%) compared to wet blue and crust (89%). This has in return generally provided low financial return to Kenyans.There is a need therefore to solve this challenge by analysing the determinants of technology adoption among the SMEs/ Artisans. Based on this, a research was carried out to analyse the factors which determinetechnology adoption during leather goods manufacturing processes among the SMEs/Artisanand come up with possible mitigation measures which can be put in place to solve such challenges in Kenya.

II. Research Methodology

2.1 Data Collection

This paper analyses the technology adoption by the SMEs in the leather sector in Kenya. The target SMEs manufacturers were in the following urban areas: Nairobi, Kisumu, Thika, Nakuru and Nyeri. To carry out the study, the researcher used a descriptive research design. The study employed simple random procedure/sampling method to select the leather firms to partake in the study. During the sampling process, the main producers of various leather products were interviewed and data recorded. The researcher collected data from the first ten respondents of the market based on the population.The study used both primary and secondary data. Primary data was collected using a questionnaire structured into several sections **(see attached appendix 1).**

2.2 Validity and Reliability Tests

For the purpose of this study, content validity and face validity were used. Content validity such as development of the questionnaire was achieved through consultations with the research experts. Face validity was used to eliminate ambiguity of the questions and to ensure clarity. Feedback from the validity test was used to improve the research tools. To determine the reliability of the questionnaire, the researcher used the test-retest method. The researcher undertook a pilot study prior to the actual study using six respondents drawn from different leather firms. For the purpose of assessing the quality of the products produced by the Artisans/ SMEs, samples of input materials (leather) and a sample of finished products (shoe) were subjected to physical tests and chemical analyses. The methods of analysis were based on the official methods of analysis.

2.3 Data Analysis Methods

The Statistical Package for Social Sciences (SPSS) was used to analyse the data using both descriptive and inferential methods. Descriptive analysis involved use of percentages while the inferential analysis involved use of a logit model which was used to determine the relationship between the dependent variable and the independent variables. In addition to the descriptive and inferential methods, thematic analysis was used. The findings were presented in form of charts, tables and graphs. The following methods were used for data analysis.

2.3.1 Logit Regression Model

The logistic regression was used in solving this research problem because the values of the dependent variable, either the stated challenge is available or not according to the interviewees responds, while represented by "Yes" and "No". The regression analysis method was used to analyze the final data outcome.The logistic function is given by:

$$P_i = e^Z/(1+e^Z)$$

WherePiistheprobabilityofabinaryoutcome(adoption ornon-adoptionof technologyby the firmi, and Z =βX, where vectorX represents firms' characteristics, and βis a vector of coefficients. Theunknownparameters can be estimatedby Maximum Likelihood Method. The natural log of oddsratios isgiven by:

$Z_i = ln[P_i/(1 - P_i)]$

Sincetheseprobabilitiesarenotdirectlyobservable,weproxy thesebyabinaryvariable Tec_i *which takes a value of 1if thei*th*firm makes an investmentin new technologyand 0 otherwise.*

UsingTeciasa dependent variable we estimate the following model:

$Tech_i = \beta 0 + \beta 1hiCompetition + \beta 2hiCustomer\ Demand + \beta 3hiHuman\ Resource\ Tech\ skills + \beta 4hiSupplier$ *of Technology* $+\beta 5hiTop\ management\ commitment + \beta 6hiEnvironmental\ Sustainability + \beta 7\ hi\ Government$ *Support*$+\beta 8hiAvailability\ of\ Finance$

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Where: $Tech_i$ *=Hard technology*

Tec_{Si} *=Soft technology*

2.3.2 Thematic Analysis

Thematic analysis focuses on examining themes in qualitative research the stipulated data. This method emphasizes organization and rich description of the data set. Thematic analysis goes beyond simply counting phrases or words in a text and moves on to identifying implicit and explicit ideas within the data. Coding is the primary process for developing themes within the raw data by recognizing important moments in the data and encoding it prior to interpretation. The interpretation of these codes can include comparing theme frequencies and identifying theme co-occurrence. The researcher coded the various questionnaires so as to come up with better understanding of how frequency the various challenges facing the SMEs were.

Table 1: Summaryof the Methodology Framework used

SpecificObjective	***Methodology***
Analyze thestateofleatherfootwearand leather goodsmanufacturing technologies in advanced leathertechnologycountries	*Secondary data collection* *Secondary data analysis*
Survey the status of hard and soft leather technology adopted by the Artisans/SMEs in Kenya	*Survey questionnaires* *Quantitative data analysis*
Evaluate the factorsaffectingleathertechnologyadoption bythe Artisans/SMEsin Kenya	*Survey questionnaires* *Logit regression model*
Develop thestrategies to be employedto bridgethe existingtechnologicalgaps	*Survey questionnaires* *Thematic analysis*

III. Results and Discussion

The profile of the respondents and their businesses were analyzed and the outcomes were represented as shown below. The variables covered include: gender,size of the firm based on the number of employees, type of leather product produced, organization's ownership structure, duration in years the businesses have been in operation and the status of technology employed by SMES and artisan.

3.1 Gender

The distribution of gender in the business is shown in the figure 1 below. From findings, the majority of the respondents were males who constituted 90% while females were 10%. This clearly indicates that ownership of leather product firms is dominated by males. The findings are in agreement with the works of (Mudungwe, 2012) on SME where 83% was male and 17% female.

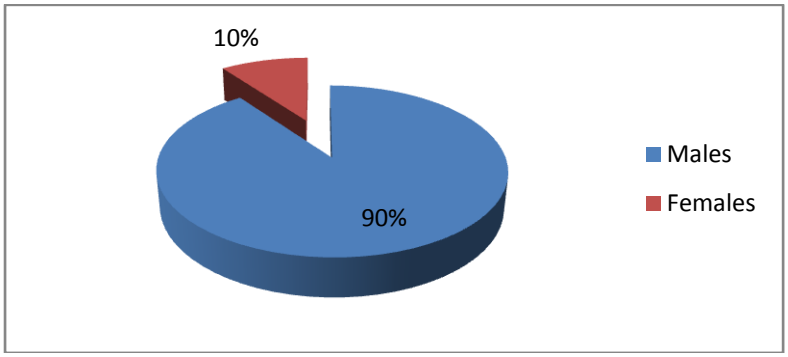

***Figure 1**: Distribution of gender by respondents*

3.2 Organizational Ownership of the Firms

From the findings, the leather footwear and leather goods sector is highly dominated by the sole proprietorship form of business ownership. As shown in table 1below95% of the firms weresole proprietorships while 3% were limited companies. Only 1% of the firms constituted both the cooperatives andother forms of businesses such as the NGOs. The study further established that the majority of the sole proprietors had been trained by their colleagues who then opted to start the work as individuals.The findings disagree with Italy case where the manufacturing firms are fully established and registered companies producing quality products which are marketable worldwide.

Table 1: Ownership of the Business Firms

Ownership	***Frequency***	***Percentage***
Sole proprietorship	*77*	*95*
Limited Company	*2*	*3*
Cooperatives	*1*	*1*
Others	*1*	*1*
Total	***81***	***100***

3.3 Size of the Firms Based on the Number of Employees

The firms were grouped as either micro-enterprises with less than 10 employee, small enterprises with 10-50 employees, and medium enterprises with over 50-200 employees. Based on the findings, themajorities of the firms, (93%) were micro-enterprises while the remaining firms (7%) were small enterprises (see figure 2). The study established that the majority of the firms had no capacity to employ a large number of employees because of the financial constraints and low market demands hence they had to limit their staff to convenient number they could maintain. This is contrary to China, Italy and India since in all this countries, most of the manufacturing sectors have employees of between 10 and 50.

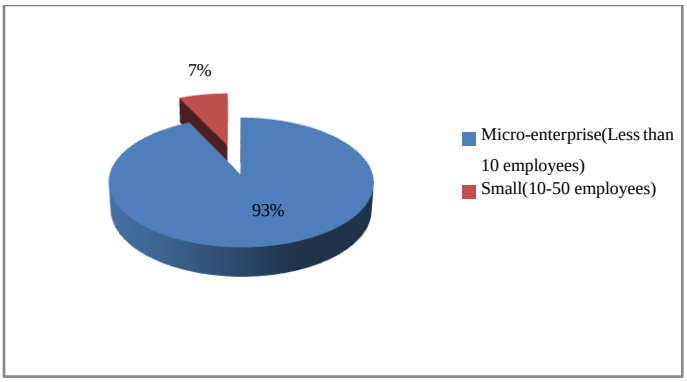

***Figure 2**: Size of the Firms based on the Number of Employees*

3.4 Type of Leather Product Produced

The leather firms were grouped into three categories according to the type of production. The first category had the leather footwear firms which produce the basic school shoes, men closed shoes, ladies sandals, ladies closed shoes etc. The second category had other the leather firms which produce hand bags, jackets, belts, wallets, folders, briefcases, purses etc. while the third category had the leather footwear and other leather goods firms whichw ereconsideredto produce both foot wears and some few other leather goods. Based on the findings

as shown in table 2 below, it is clear that the majority of the firms in the leather sector specialize on leather footwear.

Table 2: *Sectorial Distribution of the Firms*

Sector	*Frequency*	*Percentage*
Leather Footwear only	*34*	*42*
Other Leather Goods only	*19*	*23*
Leather Footwear and other Leather Goods	*28*	*35*
Total	***81***	***100***

3.5 Number of Years in Operation

As illustrated in figure3Figure 2 below, 35% of the leather firms had been in operation for 5-10 years, 21% for 10-15 years, 16% had been in the sector for less than 5 years, while 14% were in for 15-20 years and over 20 years too. The findings are in line with(Kumlachew, 2015) that undertook a study in the Ethiopian leather sector and concluded that the majority of the leather had been in operation for 5-10 years.

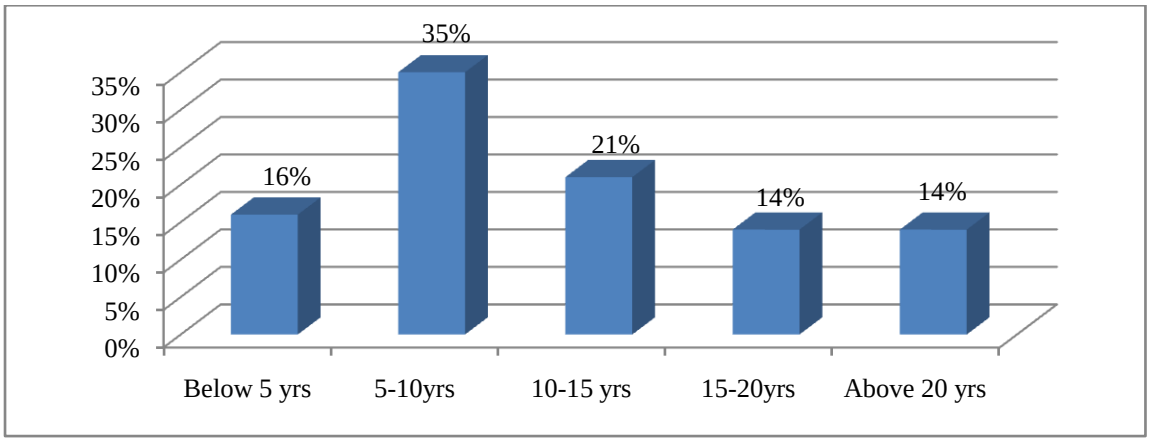

Figure 3: *Distribution of the Firms based on the Number of Operation Years*

3.6 ISO and KEBs Certification

Analysis was done on the certification of the firms by Kenya bureau of standards (KEBS) and ISO. The study established, that none of the firms was ISO certified and only 6% had KEBs certificate. It was established that 94% of the firms did not have such said certification. This is contrary to Italy where most of the manufacturing firms have all required certifications. The findings are presented in the table 3 below.

Table 3: *ISO and KEBs Certification*

Certificate	*Frequency*	*Percentage*
Have ISO certificate only	*0*	*0*
Have KEBs certificate only	*5*	*6*
Have both ISO and KEBs certificates	*0*	*0*
Have no certificate at all	*76*	*94*
Total	***81***	***100***

The findings are in line(Kumlachew, 2015) that identified most leather firms in Ethiopia (75%) are not ISO-certified**.**Lack of certification was cited as one of the huddles Kenyan leather goods face in the entry to international markets(World Bank Group, 2015). In their report they recommend encouraging producers to embrace quality and enforcement of by the regulatory bodies.(Filip & Popa, 2010)Indicated the importance of European SMEs attainting standardization for the goods they produce among them being removal of barriers to trade, stimulating competition, and improving quality of service. The same is applicable to the Kenyan SMEs and they stand to benefit if they attain standards certification. As a matter of fact standards and regulations affect SMES and their competitiveness in the global market (Stroyan & Brown, 2012).

3.7 Educational Background

As seen from table4 below on general education, 50% of the SMEs hadthe primary school certificates, 32% the secondary school certificate and 5% have learnt purely through on job training. Above secondary school certificate constituted about 7%.This is in agreement with the work of (Mudungwe, 2012) who found that the majority of the artisan in footwear manufacturing in Kenya leather sector had secondary school certificate and below while only 5% had diploma and above. From the outcome there is a high are number of

artisans who have sound basic education who can be trained further formally and gain both the technical and soft skills to continue with the production of leather goods and footwear. There is positive correlation between SME growth and development and their education and training. It is therefore important to increase the number of trained and skilled labour in the sector to have positive growth.

Table 4: General Educational Background of the Employees

CharacteristicsOf TheRespondents	***Frequency***	***Percentage***
Any 2nddegree	*2*	*1*
Any Degree	*9*	*3*
Any Diploma	*6*	*2*
Any Craft	*3*	*1*
KCSE and Any Grade 1	*0*	*0*
KCSE and Any Grade 11	*0*	*0*
KCSE and Any Grade 111	*0*	*0*
KCPE/ CPE and Any Grade 1	*0*	*0*
KCPE/ CPE and Any Grade 11	*5*	*2*
KCPE/ CPE and Any Grade 111	*9*	*3*
Any Grade 1 only	*0*	*0*
Any Grade 11 only	*0*	*0*
Any Grade 111 only	*2*	*1*
KCSE and On job training only	*99*	*32*
KCPE/CPE and On job training only	*153*	*50*
On job training only	*16*	*5*
Total	***304***	***100***

The study also looked at the specialization on leather training by the artisans and the findings are represented in table 5. Majority of the employees (50%) had KCPE and on job training followed by 32%. At least 5% had government trade test from grade III to grade I offered by NITA (National Industrial Training Authority), 1% had diploma in leather training institutes.The finding indicates that in general, 87% of the artisan received on job training. This finding again are in agreement with the work of (Mudungwe, 2012), where 83% of the artisan learned from friends and relatives. The findings are also in agreement with UNDP report which indicated that one of the characteristics of owners and works in SMES in Kenya is low level of education and training(UNDP, 2015). This implied that majority lack formal training which could have increased their competences in the production. The finding from the above result are in agreement with the world bank report on the status of the Kenya leather sector which indicated lack of qualified personnel as one of the impediments in the development of the leather sector(World Bank Group, 2015). They are also in agreement with UNIDO report which stated that majority of the players in the footwear manufacture have low skills and employ low technology equipment in their production(UNIDO, 2015).The low number of post-secondary school graduates with formal education correlates well with the number of technical, vocational training institutes and even universities offering courses in leather technology or related courses in the country. Further, the enrollment of students for the courses is very low implying the number of skilled person is equally low.

Table 5: Education in Leather Related Courses

Education in leather related courses	***Frequency***	***Percentage***
2nddegree in leather related course	*0*	*0*
Degree in leather related course	*0*	*0*
Diploma in leather related course	*3*	*1*
Craft in leather related course	*0*	*0*
KCSE and Grade 1 in leather related course	*0*	*0*
KCSE and Any Grade 11 in leather related course	*0*	*0*
KCSE and Any Grade 111 in leather related course	*0*	*0*
KCPE/ CPE and Any Grade 1 in leather related course	*0*	*0*
KCPE/ CPE and Any Grade 11 in leather related course	*5*	*2*
KCPE/ CPE and Any Grade 111 in leather related course	*9*	*3*
Grade 1 in leather related course	*0*	*0*
Grade 11 in leather related course	*0*	*0*
Grade 111 in leather related course	*2*	*1*
KCSE and on job training on leather related course	*99*	*32*
KCPE/CPE and on job training on leather related	*153*	*50*
Other short course in leather related courses/seminars	*17*	*6*
On job training on leather technology only	*16*	*5*
Total	***304***	***100***

3.8 Status of Technology Employed by SMES and Artisans

A study was conducted to understand the type of technology employed currently by the artisan in the production of footwear and leather goods. The footwear and leather goods manufacture follow almost the same initial process and share majority of the machines and equipment.

The footwear manufacturing followsthe process outlined in figure 4 below. It starts from designing, cutting the pieces, preparing the cut pieces, though processes like skiving stitching, gluing etc.This number of operations involves a number of machinery and equipment.

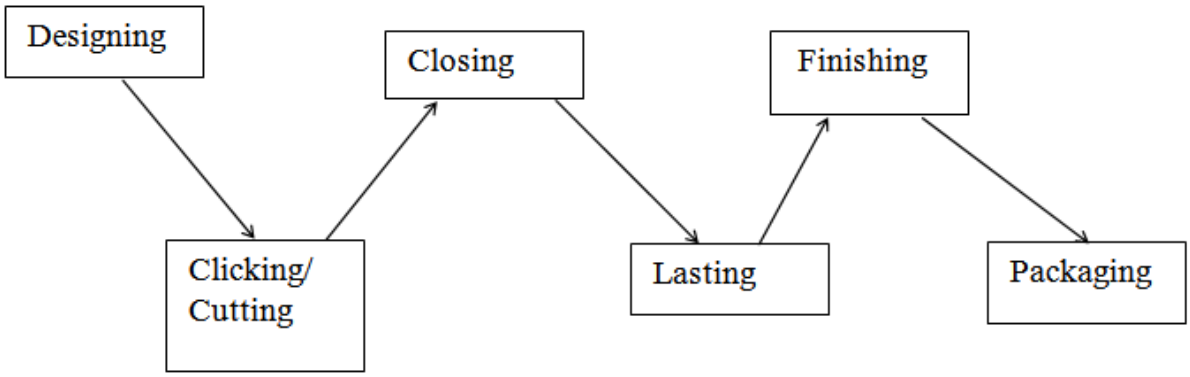

Figure 4: Footwear manufacturing process

The table 6 below highlights number of steps involved and the list of equipment used locally and the industry standard/ current technology available.

Table 6: List of Machines and Equipment involved in Footwear Manufacture

S/No.	Manufacturing Stage	State of the Art Technology	State at Kenyan SMEs
1.	Design	CAD/CAM , 3D/2D scanners, CAD for Shoe, 3D printing, pantograph	Pencil, Skiving Knives, Manila papers geometrical drawing instruments
2.	Clicking/Cutting	Hydraulic clicking press, laser cutters, cutting knives, scissors	Cutting Knives, scissors, clicking press
3.	Splitting	Leather splitter, splinter.	Knives,
4.	Skiving/ trimming	Skiving machines, skiving knives, trimming machine	Skiving machine, skiving knives
5.	Assembling/ Sewing/Stitching	Stitching machines (assorted: flatbed, post-bed, cylinder arm folding machines, roughing machine, riveting machine, eyeleting machine, harness snitcher, Post machine, cylinder piping machine, eyelet enforcing machine, eyelet enforcing puncher, lacing string	Grinders, sandpaper, Flatbed sewing machines, hole punching machines, roughing machines,
6.	Heating	Heat setting machine, humidifier,	Kerosene stoves, modified humidifiers
7.	Lasting/sole attachment	Lasting machines(various)automatic, de-lasting , sole pressing machine, sole attachment machines, de-lasting machines	lasting pincers/priers, hammer, lasting jack, sole pressing machines
8.	Finishing	Spray guns, polishing machines, spraying booth, folding machine, pressing machine, polishing ink, stamping/embossing machine, foil,	Modified grinder, spray guns, brush, numbers punching, pattern marking machines, embossing machine, stamping machines,

A site visit to the premises of artisans revealed that most of them do not use modern equipment. A number of them use old technology equipment for the specific tasks. On the first stage in leather goods and footwear manufacture; the design, it was observed that some of SMEs were using pencil, skiving knives, manila papers and geometrical drawing instruments come with designs. Others were even not designing and relied on designs from elsewhere or copying existing designs. None of the artisan/SME had invested in modern design equipment such as CAD/CAM, 3Dscanners and printers. This clearly indicates that our SMEs are lagging behind in the area of design and it will impede them in competing favorably in the market.

3.9 Status Of Soft and Hard Leather Technology Adopted

3.9.1 Soft leather technology adopted

The state of the art soft technologies adopted in the leather industry include ERP, JIT, TQM or CAD. From the research carried to the Kenyan leather artisans, none of the SMEs was found adopting the soft technology as tabulated in table 7 below.

Table 7: Adoption of Soft Technology

Typesof technology	*Status of adoption*	*Frequency*	*Percentage*
Soft technology	*Adopted*	*0*	*0*
	Notadopted	*81*	*100*
	Total	***81***	***100***

3.9.2 Hard leather technology adopted

Hard technologies used in the developed leather industries include robotics, computer aided programs such as CAM, GT, FMS, machines and equipments. From the field survey it was noted that none of the sampled leather firms was using either robotics or any of computers aided programs but most of these firms were using old technology machines and equipments from which were manually operated. The odd machines and equipments led to low quality and quantity production of leather goods and leather foot wears in such firms. Out of the sampled 81 leather firms sampled in Kenya, only five firms (6%) had adopted some of such machines and equipment technologies as shown in table 8 below. Despite the fact that the leather technology has really developed in countries such as Italy, China and India, most of the firms in Kenya still lags behind. The findings were in agreement with (Kumlachew, 2015) analyses which showed that the level of technology adoption by textile and leather firms in Ethiopia was low since majority of the firms (71%) had not adopted hard technology.

Table 8: Adoption of Hard Technology by SMEs

Status of adoption	*Frequency*	*Percentage*
Adopted	*5*	*6*
Notadopted	*76*	*94*
Total	***81***	***100***

During the interview with the various SMEs, the researcher learnt of several reasons why the SMEs were not using both soft and hard technologies. They include the availability of finances to purchase such machines/equipments, availability of technical skills (human resource) to operate such equipments, lack of government support among others.

3.9.3. Strategy to overcome the challenges

From this study it was noted that a number of challenges dog the SMEs in leather goods and footwear manufacturing. Thesewere challenges such as lack of sufficient funds to purchase state of the art machines/equipments, unavailability of technical skills (human resource) to operate and repair such machines/equipments and lack of government support. As a result, the quantity and quality of the leather products produced is very low. For the Kenyan SMEs to produce quantity and quality products, funds should be set aside for their use to purchase the state of the art leather technologies. Also the importation taxes imposed on such technologies should be waived or lowered. Government can as well purchase such technologies and place them at strategic places where artisans can share as they undertake the various stages of leather products manufacture. The SMEs need to be trained how such machines/equipments are operated. This can be achieved by introducing leather technology courses in almost all our technical training institutes and universities. Short courses should also be encouraged especially to those already undertaking the manufacturing processes. The government should also come up with policies which discourages importation of finished leather products and encourages exportation of such products. This may include heavy taxation to imports and low or no taxations on leather products.

IV. Conclusion

The paper analysed the level of technology adoption by the Kenyan artisans in the leather products manufacturing processes. Various Kenyan SMEs/artisans in the leather products manufacturing in urban areas were visited. It was established that the level of technology adoption by such groups was very low. This was caused by the various challenges such as lack of sufficient funds to purchase state of the art machines/equipments, unavailability of technical skills (human resource) to operate and repair such machines/equipments and lack of government support. As a result, the quantity and quality of the leather products produced is very low. For the Kenyan SMEs to produce quantity and quality products, funds should be set aside for their use to purchase the state of the art leather technologies. Also the importation taxes imposed on

such technologies should be waived or lowered. Government can as well purchase such technologies and place them at strategic places where artisans can shareas they undertake the various stages of leather products manufacture. The SMEs need to be trained how such machines/equipments are operated. This can be achieved by introducing leather technology courses in almost all our technical training institutes and universities. Short courses should also be encouraged especially to those already undertaking the manufacturing processes. The government should also come up with policies which discourages importation of finished leather products and encourages exportation of such products. This may include heavy taxation to imports and low or no taxations on leather products.

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