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Preamble

African Journal of Information Professionals (AJIP) is an academic peer-reviewed biannual publication that seeks to publish original, innovative research and academic scholarship that contributes to the growth of knowledge in information science and related fields. Her key audiences are: Information professionals/scientists, researchers, media specialists, information students, government agencies/policymakers and citizens with a passion for information sciences.

This second edition is aligned with the newest research, interspersed with contemporary concerns and latest global transposition in information. It carries original and full-length articles that reflect the latest research and developments in both theoretical and practical aspects of an information society. It promotes research awareness and compatibility platform through a concise and methodical interface to cater for all categories of scholars in information, while encouraging innovativeness and quality research work.

The topic issues in this journal include green libraries, enhancing access to electronic resources through collaborations and electronic document delivery, emerging trends in information literacy, educating the health librarians, staff retooling practices role on information service delivery, managing tacit knowledge amongst staff, analysis of use of web 2.0 tools for environmental scanning, using social media to market the 21st century academic library, analysing internal organizational communication and security and information access.

The journal is both in print and online versions.

Chief Editor
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Total Impact of Tourism on the Economy of Rwanda: Input-Output Approach
Pius Odunga
Kirinyaga University

Abstract
Tourism has emerged as a driver not only for economic progress but also for social development in Rwanda. The tourism sector has strong linkages in the national economy, producing economic and employment benefits in related sectors, thereby promoting economic diversification and strengthening the country’s economy.

This paper analyses the impacts and effects of changes in tourism demand; policies and regulations that affect tourism activity either directly or indirectly; factors beyond the direct control of the industry; public and private investment proposals; resource allocation; and policy and management of tourism development strategies.

The primary objective of this study was, therefore, to evaluate the economic impact of tourism and assess the strength of tourism inter-industry linkages in Rwanda’s economy for the year 2013/2014. The input-output model was used to estimate the impacts and linkages of tourism in terms of output production, employment generation, labour income earnings and total value creation.

The relationships between expenditure and output, and income and employment (direct and indirect) are described by multipliers. Data for analysis was sourced from multi-region input-output table (MRIO) database: http://www.worldmrio.com/ and the Rwanda Tourism Satellite Accounts (2014).

All impacts have a starting point in the economy, defined as the direct effect. The direct effect sets off iterations of indirect (inter-industry production) spending.

Internal tourism consumption, which triggers direct effects, is an aggregate that describes the size of direct visitor acquisition within a country of reference. This was used as basis for calculating tourism multipliers and their associated effects.

There are several different types of multipliers depending on the secondary effects included and the measure of economic activity used. The common multipliers computed were associated with
output, income, value addition and employment in the economy for the year 2013/2014. Multipliers were decomposed into their various multiplier effects: initial and production effects. This study quantifies the impact and effects of internal tourism expenditure/consumption. With total expenditure level of $286 million, the tourism sector supported about 569 thousand jobs and generated $120 million as labour income, $238 million in value addition and $522 million output.

In this report, internal tourism expenditure (a portion of internal tourism consumption) was used as a basis for calculating relevant multipliers and their associated effects. Therefore, future studies can re-estimate the multipliers by considering internal tourism consumption in its entirety. Attempts should be made to integrate other components of total tourism internal demand (i.e. tourism gross fixed capital formation and tourism collective consumption) into the analysis. More robust methodologies such as Social Accounting Matrix (SAM) and Computable General Equilibrium (CGE) models could be considered for further analysis.

Keywords: Total Impact, Tourism, Economy, Rwanda, Input-Output Approach

Introduction

Rwanda is a member of the East African Community (EAC), a regional economic block whose membership includes Kenya, Uganda, Tanzania, Burundi and Southern Sudan. Agriculture is a key sector of Rwanda’s economy and contributed an average 33% of GDP between 2009 and 2014, employed 71% of the population and generated 45% of the country’s export revenues. The main crops are coffee and tea (NISR, 2016; World Bank, 2011). The country’s manufacturing sector contributed 15% of GDP annually between 2009 and 2014. Rwandese service sector is sub-divided into trade and transport services which on average contributed 15% of GDP annually and other services including tourism which accounted for 32% of GDP. In 2014, Rwanda’s GDP was estimated at RWF\(^1\) 5,395 billion translating to GDP per capita of RWF 491,000.

\(^1\) 1 US Dollar = 689.00 Rwanda Francs (RWF), 2014 average
Rwanda’s Tourism Industry

By 2011, the Rwandese tourism industry was contributing 63% of the country’s service export earnings and supporting balance of payments. The sector ranked highly in Foreign Direct Investment (FDI) attraction accounting for up to 40% of total FDI into the country (UNTAD, 2014).

Table 1 summarizes international tourist arrivals in Rwanda between 2011 and 2014 by region and shows an aggregate 9.3% growth trend over the period with visitors from Africa forming 85-89% of inbound tourists on account of improved intra-regional accessibility. Poor connectivity with major international capitals explains lower arrivals from European, American and Pacific regions over the period (UNWTO, 2016, UNWTO, 2017 and UNWTO, 2018).

**TABLE 1: International Regional Inbound Tourists Arrivals**

<table>
<thead>
<tr>
<th>Year</th>
<th>Africa</th>
<th>Americas</th>
<th>E. Asia &amp; Pacific</th>
<th>Europe</th>
<th>Middle East</th>
<th>Others*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>774</td>
<td>38</td>
<td>13</td>
<td>67</td>
<td>2</td>
<td>14</td>
<td>908</td>
</tr>
<tr>
<td>2012</td>
<td>936</td>
<td>33</td>
<td>12</td>
<td>62</td>
<td>2</td>
<td>16</td>
<td>1,061</td>
</tr>
<tr>
<td>2013</td>
<td>988</td>
<td>38</td>
<td>15</td>
<td>61</td>
<td>3</td>
<td>17</td>
<td>1,122</td>
</tr>
<tr>
<td>2014</td>
<td>1,088</td>
<td>35</td>
<td>12</td>
<td>61</td>
<td>3</td>
<td>21</td>
<td>1,220</td>
</tr>
</tbody>
</table>

*Others include arrivals from South Asia and other non-classified markets

(Source: RTSA, 2014; UNWTO, 2016)

Rwanda is reliant on wildlife based tourism for 90% of its tourism generated revenues (MoTI, 2009). The principle wildlife attractions are Volcanoes National Park which offers opportunity for gorilla tracking, Nyungwe tropical forest, the largest remaining track of mountain forest in East and Central Africa and Akagera National Park which offers a typical Savannah experience.
Rwanda’s Tourism Statistics (2014)

Rwanda’s international inbound tourism arrivals increased steadily from 908,009 in 2011 to 1,219,529 in 2014. During the year 2014 almost 90% of arrivals used land transport. The average length of stay was estimated at 6.5 nights as weighted according to purpose of visit and mode of transport. Almost 1,013,607 tourists generated 6,605,211 nights and total expenditure of RWF 202,800 million in 2014. The total expenditure by same-day and overnight visitors was estimated at RWF 208.1 billion. About 22% of Rwanda’s population participated in domestic tourism. Almost 24% of those who participated in domestic tourism were urban-based. The female participation rate was almost 50.6%. During the same year, domestic tourism generated RWF 53.1 billion in 2014.

The internal tourism consumption for the year 2014 was thus estimated at RWF 261.2 billion at market prices. At basic prices this translated to RWF 209.2 billion. However, only tourism expenditure was covered in the survey. “Other” components of tourism consumption were not captured in the TSA for Rwanda.

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2 A visitor is a traveller taking a trip to a main destination outside his/her usual environment, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited. A tourist is defined as a non-resident visitor staying overnight. An excursionist (same day visitor) is a non-resident visitor arriving and leaving in a country the same day.

3 Traders, employees and other cross-border visitors are excluded since they do not leave their ‘usual environment’

4 The average length of stay (ALOS) refers to the number of days, on average, taken by a specific group of visitors at a destination.

5 Tourism expenditure includes not only what visitors pay for out of their own budget or pocket, but also what producers (businesses, governments and non-profit institutions serving households) or others spend for their benefit (transportation, accommodation, etc.). Tourism expenditure excludes social transfers in kind, except when they correspond to refunds of expenditure made initially by the visitor (as in the case of some health services), as well as expenditure, actual or imputed, associated with all types of vacation home ownership.

6 Domestic tourism expenditure includes not only the expenditure of visitors on domestic trips, but also the expenditure within Rwanda by residents that undertake outbound trips.

7 Basic price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable, and plus any subsidy receivable, on that unit as a consequence of its production or sale; it excludes any transport charges invoiced separately by the producer.

8 These components include:
   (i) Services associated with vacation accommodation on own account
   (ii) Tourism social transfers in kind (except refunds)
The primary objective of this study was to evaluate the economic impact of tourism on Rwanda’s economy for the year 2014. The specific objectives are to estimate these impacts in terms of output, employment generation, and labour income, and total value generation. The significance of the current study is mainly related to policy formulation, implementation, monitoring and evaluation.

**Empirical Review**

The relevance of tourism as a socio-economic growth and development tool has continued to motivate scholarly attention to its economic impacts assessment. Briassoulis (1991) points out that rigorous study of economic impacts is necessitated by the truism that tourism bears economic costs that discount its realized benefits. Real tourism benefits are often at variance with what is envisaged in development policy blue prints, thus economic impact studies are necessary as a policy monitoring and evaluation tool.

A range of alternative approaches for assessing tourism economic impacts have been developed. However in general, these methods are premised on estimation of tourism demand changes and subjecting the change to a model or set of multipliers that trace its reverberations in the economy, Stynes (1999). Methods include expert judgment, surveys, off-the-shelf multipliers and econometric models. Kumar and Hussain (2014) offer that the decision on multiplier methods and models to use based on precision expected, data availability, complexity of technique and assumptions underpinning the analysis.

Multiplier studies posit that a shock introduced by tourism expenditure leads to additional activities in related industries which magnifies the overall change from the initial shock; the analyst’s task is thus to estimate this magnification. Input-Output (I-O) analysis is a technique that has been widely applied in deriving multipliers. The technique is used to analyze direct and indirect impacts, simulate *ex ante* or *ex post* effect

(iii) Other imputed consumption
of tourism demand at national, sub-national, industry or sub-sector levels, (Dwyer, Forsyth & Spur, 2004; Frechtling, 2013). Other methods used to study economic impacts include Social Accounting Matrix (SAM) and Computable General equilibrium model (CGE).

Due to its design elegance, simplicity and reliance on observed economic data, I-O models have been popularized in tourism economic impact analysis since their first use in the 1960s (Frechtling, 2013).

Atan and Arslanturk, (2012) used I-O analysis to examine significance of tourism in the Turkish economy to establish the link between tourism and economic growth. The study computed total output multipliers for 16 sectors of the Turkish economy to assess the relative significance of tourism in increasing output. Results revealed that tourism specific sectors; hotels and restaurants, auxiliary transport activities and travel agency activities had high output multipliers or backward linkages (between 1.85 and 1.90). It was further noted that hotels and restaurants sector (1.90) was second to manufacturing (2.02) in terms of total output multiplier. The researchers were able to assert that tourism had a high capacity to grow other sectors of the economy on account of the high quantity of input from other sectors required to generate a unit tourism output.

Michálková et al., (2018) applied the I-O model to quantify direct and secondary economic benefits of a cultural event in Bratislava, Slovakia. The study borrowed multipliers previously calculated from Slovakian I-O table and applied them on aggregated tourism expenditures obtained from survey data. They were able to estimate total economic contribution generated by final tourism consumption during the coronation event held in Bratislava at €3,347,023.

Ivandić and Šutalo (2018) used data from Croatian TSA and I-O tables to estimate tourism’s contribution to GDP and measured multiplicative effects of tourism demand on the economy. Specifically, the study set out to evaluate impacts of a tourism
boom on structural changes in the economy comparing three periods between 2005 and 2013. It applied a vector column of internally produced domestic tourism consumption on the Leontief inverse matrix to compute output and gross value added (GVA) multipliers for seven tourism related sectors. Results revealed marked volatility in output multipliers in the 3 periods but show “air transport” to have the largest backward influence (output multiplier =2.08) on the economy. The findings indicated that “hotels and restaurant” sector had the lowest share of intermediaries in total output implying that it drew weakly from others slowing down potential overall growth. The study observed volatility in GVA multipliers similar to output multipliers. However, they showed that “hotels and restaurants” had the highest total GVA multipliers in all the periods allowing the conclusion that tourism demand gainfully impacted on other non-tourism sectors of the economy due to overall inter-sector connections.

Surugiu (2009) used IO analysis to estimate the economic impacts of tourism on the hotel and restaurant sector in Romania over the period 2000 and 2005. Output and employment multipliers were found to have increased but those of value added and income had declined. The analysis showed that hotels and restaurants had one of the lowest interdependence levels in the economy. The researcher suggested that transport infrastructure needed to be strengthened and services diversified in order enhance the respective linkages.

Archer and Fletcher (1996) using IO analysis, examined the impact of tourism on income, employment, public sector revenue and balance of payments in Seychelles. They used 18 aggregated IO sectors with separate industries related to tourism. They concluded that tourism impact was distributed over several productive sectors with different magnitudes. The results revealed tourist groups that maximize economic benefits and the sectors tourists should be encouraged to spend in.

Frechtling and Horvath (1999) concluded that tourism multipliers are relatively high for income and employment but low for output compared with other sectors.
Jones and Munday (2004) observed that the level of backward linkages (multipliers) varies among tourism related industries.

**Structure of the I-O Table**

I-O tables track the output generated by an industry as the intermediate input in the production process of another industry or the final purchase by the various consumers (Miller and Blair, 2009).

I-O models focus on the industry under study and its direct relationships with other parts of the economy, ignoring other key aspects of the economy. This, however, leads to over-estimates of specific and general impacts in the economy (Dwyers et al, 2004).

The following mathematical input-output model was adopted for the study:

\[ X = A \times X + F - M \]  
Equation (1)

Where \( X \) is vector of total gross output from industry \( j = 1 \) to industry \( j = n \);

\( A \) is input coefficient matrix from industry \( j = 1 \) to industry \( j = n \);

\( F \) is a vector of final demand from industry \( j = 1 \) to industry \( j = n \);

\( M \) is a vector of import from industry \( j = 1 \) to industry \( j = n \).

In order to extract the invert matrix or the Leontief inverse, which is a multiplier explaining direct and indirect effects, all elements from equation (1) are transposed to \( X \) as the following show (2):

\[ (1 - A)X = F - M \]  
Equation (2)

\[ X = (1 - A)^{-1}(F - M) \]  
Equation (3)

Where \((1 - A)^{-1}\) is the inverse matrix.

**1-O Multipliers**

The computerized software helps to produce the inverse matrices, which is a set of multipliers. Analyses of four different sets of multipliers from the input-output system, namely total industry output, labour income, value added, and employment are
conducted under given mathematical input-output model. Each set of multipliers creates four types of multipliers: Type 1, Type 2, Type 3, and Type 4 multiplier within the IMPLAN system. A Type 1 multiplier shows the direct effect plus the indirect effect. When input-output model is exclusive of households, the model becomes open type (i.e. Type 1 multiplier).

Data
The data was sourced from a global supply chain database that consists of a multi-region input-output table (MRIO) model that provides a time series of high-resolution IO tables with matching environmental and social satellite accounts for 190 countries including Rwanda: [http://www.worldmrio.com/country/](http://www.worldmrio.com/country/)

Rwanda’s Input-Output Table 2013/2014
The study relies on Rwanda I-O tables 2014 (RI-O, 2014), the latest complete account of inter-industry transactions and final demand produced for Rwanda to derive an I-O model. The tables are available on [http://www.worldmrio.com/country/](http://www.worldmrio.com/country/) which contains a database of high resolution multi-region I-O tables (MRIO) for 190 countries including Rwanda.

The first quadrant/intermediate usage sub-matrix or transaction tables of the Rwandese I-O tables, 2014 records flows between twenty six (26) industries. Food & beverages, hotels & restaurants, retail trade and transport are industries that relate to tourism in the sub-matrix. The second quadrant shows output disposition to final demand categories which include household (96%), state and local government (14%), capital formation (41%), institutional sales (-29%) and net exports (-25%). The sum of row totals of this sub-matrix gives total final demand at $5.378 billion in 2014. The third

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9 Tourist multiplier refers to the ratio of the change in one of the key economic variables such as output, value addition, income and employment to the change in tourism expenditure (Cooper et al, 1993). Tourism multipliers capture the secondary economic effects of tourist expenditure (WTO, 2002).
quadrant is made up of primary inputs to production by the 26 industries and includes returns to primary inputs such as compensation to employees, gross operating surplus, gross mixed incomes, imports and net taxes on production. The column total of row sums of this sub-matrix computes total value added at $5.57 billion in 2014. The final quadrant shows all primary inputs into final demand by household, government, investment and exports.

Rwanda Tourism Satellite Account

The second set of data is obtained from Rwanda Tourism Satellite Accounts year 2014 (R-TSA, 2014 Appendix Table 1). In the TSA framework, “tourism industry” is identified from the demand side by commodities that serve tourists’ needs and linked to the supply side with tourism specific industries supplying such commodities. The R-TSA 2014 was used to compile the final consumption (demand) vector based on total internal tourism demand (TITD). R-TSA, 2014 identifies five tourism characteristic commodities i.e. accommodation, food and drinks, local tour packages, day tours/excursions and local transport.

Methodology

Tourism Satellite Accounts (TSAs) provide input data for entry into an economy’s input-output model. TSAs are constructed to aggregate a country’s tourism activities into a single industry. These accounts measure the direct economic contribution of tourism to the economy in a manner that is consistent with IO table (Frechtling, D. 2010 and Pratt, S. 2015). TSAs are not a modelling but an accounting tool that records annual activities of tourism as an industry (Hara, 2012). The ten TSA tables are built according to National Accounting System (NAS). The aggregated tourism industry is inserted as one explicit industry in the I-O table, thus avoiding double counting. Data from Rwanda TSA (2014) was used to estimate the macroeconomic and inter-industry linkages of the tourism industry. Final consumption by tourists is

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10 TSA is underpinned by concepts, classifications and definitions elaborated in the Tourism Satellite Account: Recommended Methodological Framework 2008 (TSA: RMF, 2008) as approved by the UNWTO and the United Nations Statistics Division
extracted from general output in a process referred to as ‘fractionalization’ in terms of matrix algebra and ‘desegregation’ in terms of national accounts. The values of the extracted parts of output together with accompanying inputs are separated into new vectors of ‘tourism activities’. Vector components of tourism activity are then aggregated into an explicit new ‘tourism industry’. This is the desegregation of outputs and inputs into tourism and non-tourism parts (Hara, 2008). Therefore, TSA is used in compiling the intermediate and final consumption (demand) vectors based on internal tourism consumption.

Tourism industry is related with several other industries in the economy (Hara, 2008). Therefore, both the tourism demand and supply forces create primary (direct) and secondary (indirect) economic effects. The primary and secondary effects resulting from internal tourism demand can be captured by multiplier based input-output methods (Frechtling, 2013). Input-output models have advantages over econometric analyses since they simultaneously take into account inter-industry input-output relations and final demand (Blake, 2009). Final demand consists of consumption, investment, exports and imports (i.e. \( Y = C + I + G + X - M \)). Therefore, I-O models are preferred over econometric models in examining the quantitative economic contribution of tourism demand to a country’s general economy (Song, et al, 2012; Frechtling, 2013).

This study used the IMPLAN (Impact analysis for PLANning) software to evaluate the economic impact of tourism sector on Rwanda’s economy (Appendix Table 2). IMPLAN economic analysis framework is comprehensive and adaptive. For a complete description of sources and methodology for construction of the IMPLAN database please refer to the IMPLAN Pro User’s, Analysis and Data Guide.

**Results**

Total tourism internal demand consists of the sum of internal tourism consumption, tourism gross fixed capital formation and tourism collective consumption (TSA: RMF 2008). Internal tourism consumption is the central aggregate that describes the size of direct visitor acquisition within a country of reference.
Input-Output Multipliers

Four general sectors closely associated with tourism consumption were considered in this paper. These are Food and Beverage (F&B), Hotels and Restaurants (H&R), Transport and Retail Trade. Under the direct multipliers, for every one million dollars of production: Food and Beverage sector generated $70,401 in labour income and $143,815 in value addition, and created 22 jobs. The Hotels and Restaurants sector generated $266,355 in labour income and $392,161 in value addition, and created 77 jobs. Transport sector generated $234,046 in labour income and $345,873 in value addition and, created 243 jobs.

Under the indirect multipliers, for every one million dollars of production: Food and Beverage sector generated $218,322 in labour income and $727,579 in value addition, and created 5,260 jobs. The Hotels and Restaurants sector generated $172,155 in labour income and $452,808 in value addition, and created 1,912 jobs. Transport sector generated $122,059 in labour income and $264,563 in value addition, and created 112 jobs. For every one dollar of output: Food and Beverage sector generated $1.1, the Hotels and Restaurants sector $0.9, and Transport sector $1.2.

Tourism Economic Impacts

Five tourism specific sectors; Accommodation, Food and Drinks (F&D), Passenger Transport, Travel Agency and Tour-Operations, and Shopping were considered under expenditure impact analysis.

Internal tourism expenditure in the year 2014 was decomposed into accommodation ($124 million), food and drinks ($54 million), passenger transport ($35 million), travel agency and tour-operations ($4 million) and shopping ($71 million). This study quantifies the impact and effects of internal tourism expenditure/consumption. With total expenditure level of $286 million, the tourism sector supported about 569 thousand jobs and generated $120 million as labour income, $238 million in value addition and $522 million output.

About $124 million spending in the accommodation sub-sector of hotels and restaurants sector created 236,000 jobs and generated $54 million in labour income, $104
million in total value addition and $238 million in output. Around $54 million spending in the food and drinks sub-sector of food and beverage sector created 270,000 jobs and generated $15 million in labour income, $46 million in total value addition and $111 million in output. Almost $33 million spending in the passenger transport sub-sector of transport sector created 12,000 jobs and generated $13 million in labour income, $21 million in total value addition and $54 million in output. Up to $4 million spending in the travel agency and tour-operations sub-sector of transport sector created 1,400 jobs and generated $1.5 million in labour income, $2.5 million in total value addition and $6.5 million in output. Almost $71 million spending in the shopping sub-sector of retail trade sector created 50,000 jobs and generated $38 million in labour income, $63 million in total value addition and $112 million in output.

Conclusion

The contribution of tourism to Rwanda’s economy includes direct and indirect effects classified as increase in domestic production, generation of labour income, creation of employment, foreign exchange earnings from inbound tourist expenditure, and other economic effects. The indirect effects of tourism are much larger than the direct effects. Both effects show that tourism contributes substantially to the economy of Rwanda.

Interventions to grow internal tourism demand such as increasing tourism arrivals or promoting high-end gorilla tourism may create higher value addition in the services sector in addition to higher labour incomes and output. Tourism has the potential to stimulate demand in other economic sectors of the economy and hence encourage growth. In other words, tourism-based industries are interlinked with other sectors of the economy in general. These industries, in turn, generate relatively high value added multiplier effects. However, lower labour income multiplier for tourism sectors suggest low quality jobs diminishing per capita impact of tourism created jobs in the economy.
World Tourism and Travel Council (WTTC) analysis is based on strong assumptions due to lack of data and consequently their figures are higher than the estimates of this study.

**Way Forward**

In this report, internal tourism expenditure (a portion of internal tourism consumption) was used as a basis for calculating relevant multipliers and their associated effects. Therefore, future studies can re-estimate the multipliers by considering internal tourism consumption in its entirety. More robust methodologies such as Computable General Equilibrium (CGE) and Social Accounting Matrix (SAM) models could also be considered.

**BIBLIOGRAPHY**


World Travel and Tourism Council (WTTC). Travel and Tourism Economic Impact (Rwanda- Various Yearly Issues)
Table 1: Rwanda TSA Table 1 Internal Tourism consumption by products 2014 (RWF billion)

<table>
<thead>
<tr>
<th>Products</th>
<th>Inbound Tourism Expenditure</th>
<th>Domestic Tourism Expenditure</th>
<th>Internal Tourism Expenditure</th>
<th>Other Components of Tourism Consumption</th>
<th>Internal Tourism Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Consumption Products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.1 Tourism Characteristic Products</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Accommodation</td>
<td>101.2</td>
<td>2.9</td>
<td>104.1</td>
<td>-</td>
<td>104.1</td>
</tr>
<tr>
<td>Food &amp; Drink</td>
<td>31.4</td>
<td>10.5</td>
<td>41.9</td>
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<td>41.9</td>
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<td>Local Tour Packages</td>
<td>7.5</td>
<td>26.8</td>
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<tr>
<td>Day Tours and Excursions</td>
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<td>Other Local Transport</td>
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<td>A.2 Other Consumption Products</td>
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<td>Shopping</td>
<td>25.1</td>
<td>9.2</td>
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<td>-</td>
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<td>3.5</td>
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<td>TOTAL</td>
<td>208.1</td>
<td>53.1</td>
<td>261.2</td>
<td>-</td>
<td>261.2</td>
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Source: Rwanda TSA (2014)
TABLE 2: RWANDA IMPLAN MODEL

<table>
<thead>
<tr>
<th>Model Information</th>
<th>Value Added</th>
</tr>
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<tbody>
<tr>
<td>Model Year</td>
<td>2013</td>
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<tr>
<td>GRP</td>
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<td>Total Personal Income</td>
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<tr>
<td>Total Employment</td>
<td>5,560,000</td>
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<td>Number of Industries</td>
<td>26</td>
</tr>
<tr>
<td>Land Area (Sq. Miles)</td>
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<td>Area Count</td>
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<tr>
<td>Population</td>
<td>11,460,000</td>
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<tr>
<td>Total Households</td>
<td>2,546,667</td>
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<tr>
<td>Average Household Income</td>
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</tr>
<tr>
<td>Federal Government</td>
<td>$876,256,173</td>
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<tr>
<td>Capital</td>
<td>$2,222,740,128</td>
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<tr>
<td>Trade Flows Method</td>
<td>Supply/Demand Pooling</td>
</tr>
<tr>
<td>Model Status</td>
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<td>Economic Indicators</td>
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<td>Shannon-Weaver Index</td>
<td>.51503</td>
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<td>Total Final Demand:</td>
<td>$5,377,668,756</td>
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</table>

<table>
<thead>
<tr>
<th>Top Ten Industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector</td>
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<tr>
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</tr>
<tr>
<td>1</td>
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</tr>
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<tr>
<td>Areas In the Model</td>
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<tr>
<td>--------------------</td>
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<td>Rwanda National</td>
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</tbody>
</table>

*Source: IMPLAN OUTPUT*

Muchiri, Martin., Wasike., Jotham and Muigai, Gitau
Kirinyaga University, Kenya
Correspondence: martinmuchiri16@gmail.com

Abstract
The interest on Corporate Social Responsibility (CSR) has risen to great heights within the banking sector in the last decade. Commercial banks have increasingly embraced CSR disclosure practice on education and environmental operations. The relationship between the CSR investments and the financial performance is however unknown. The main focus of this study was to examine the effect of CSR dimensions relating to education and environmental conservation on the performance of commercial banks listed in the Nairobi Stock Exchange. The paper employed desktop research by reviewing and analyzing audited published financial reports for the listed commercial banks in Kenya. The research was a survey of the 11 commercial banks listed by December 2017. CSR investments were measured using the monetary expenditure on social activities, while the financial performance was measured using net profit after tax. Data was analyzed using Karl Pearson correlation model to examine the relationship between the variables. The study analyzed data for the period 2012 to 2016 for all listed commercial banks. The study established that investments in CSR activities are positively related to financial performance of commercial banks; banks which embraced a consistent approach to investing in CSR were associated with high financial performance; customers have also become conscious of the firm’s activities, and CSR focused banks gain loyalty from customers. It also emerged that CSR programs build the bank's reputation, hence increase market share which consequently lead to high financial performance. The study recommended that commercial banks and other institutions should consistently invest in activities that consider the interest of all stakeholders and that businesses should invest highly in education programs for the disadvantaged groups and environmental conservation programs as such investments result to high financial performance.

Key Words: Corporate Social Responsibility, Commercial Banks, Education, environment, financial performance.

Introduction and Background
According to Hopkins (2004), CSR entails handling the members of the society as well as other interested parties of the business in a manner that is acceptable and that aims at improving the quality of their lives while at the same time preserving profitability. Mullin (2010), also added that the issue of CSR is beyond the revenue, profit, and the legal responsibilities. The adoption
of Corporate Social Responsibility in the twenty-first century is growing exponentially. Various scholars have given their views regarding the commitment by the firms to make social investments. Friedman (1962) argued that the primary goal of a firm is to generate profits and a firm ought not to put more focus on social investments. Freeman (1984) also argued that businesses need to focus on creating value for their stakeholders for them to succeed.

Carol and Shabana (2011) argued that corporations need to embrace CSR in a bid to earn a good reputation and maintain legitimacy in the society. Stakeholders too also want their firms to invest in corporate social responsibility. The pressure from the social activists and NGOs for firms to adopt CSR has also increased. High level of market dynamism characterizes the modern world of business. Customers now have a platform to showcase what they want from firms. Worldwide Campaigns such as the Bank Transfer Day held on November 5, 2011 urging customers to prefer the community banks have been on the rise. Governments of different states such as Boston, New York, Los Angeles and San Diego have taken initiatives to encourage their financial institutions to promote the communities in their neighbourhood through their services as a way of fighting poverty and making it easy to do business with them.

The stakeholders and investors have also pressured their firms to disclose information regarding their investments in Corporate Social Responsibility (Hooghiemstra, 2000). Ponn and Okoth, (2009) also noted that some businesses out of will have responded to the demands by the investors and shareholders to disclose information regarding their investments on CSR. Some disclose the information either on their websites or in their annual report. Ferreira and Ding (2014), established that one of the significant shortcomings of social investment is the lack of standardized measures and certain disclosure for CSR. A study carried in the Kenyan Banking sector by Kepkemoi (2010) investigating the relationship between CSR and financial performance indicated no relationship. A similar study conducted by Kipruto (2013) indicated a positive relationship between CSR and Financial performance. According to Gichana (2004), all the firms listed in the Nairobi Stock Exchange had incorporated CSR in their mission statements.

Various researchers have attempted to explain the economic benefits firms gain as a result of sustainable financial success. Commercial banks that have a good return on investments are able to diversify risks across various projects. The banks guarantee their employees job security, creates new job opportunities and meets the expectations of their shareholders. There is no good reason to expect shareholders to tolerate low returns or losses over a long period. The banking institutions, as well as other business entities, also have to focus on earning sustainable profits which meet the need of their shareholders. Garnt (1991) suggests that though the banking industry has been performing well in the economy, it is possible for firms to even yield higher performance as a result of investing in social activities. Firms which increases their investments in CSR earns a future competitive advantage. According to Moore and Spence (2006), firms which invest highly in CSR activities easily attract highly skilled staff, attracts customers and offer easy access to the hostile markets. Marcia and Hassan (2013) also add that customers tend to have a good perception of the firms with high investments on CSR. These findings agreed with the findings of other researchers including Okoth (2012), Kitzmuelery and Shimshack (2012), Margolis, Elfenbein and Walsh (2007) among others.

Other researchers have however found a negative relationship between CSR investments and financial performance while others have found no relationship at all. Kepkemoi (2010) in his study indicated no relationship between CSR and financial performance. Nelling and Webb (2009) also concluded that there is no evidence for any relationship between CSR and the financial performance. The above studies, therefore, gives contradicting findings. The findings
are highly inconsistent, and that creates a scholarly gap. This study aimed at adding knowledge on how CSR investments affect the financial performance of commercial banks in Kenya. The findings of the study will, therefore, be beneficial to corporate managers involved in making short term and long term decisions which affect the financial performance of the firm.

**Literature Review**

Kepkemoi (2010) defines CSR as the pursuance of the wealth maximization goal without violation of the law. CSR contributes solutions to the existing social problems in a community. According to Ogore and Kusa (2013), the financial performance of a company is influenced by both internal and external factors. The decision made by the managers of various corporations also determines the financial performance of a firm. External factors are not within the control of a firm. Performance is also influenced by the size and age of a firm. Mirza and Javed (2013) noted that economic conditions, corporate governance, and capital structure are the major determinants of capital. Corporate governance entails a sequence of relationships between investors, company management, the board and other interested parties. According to Bairathi (2009), good corporate governance is characterized by a transparent, efficient and fair administration. According to Wanjiru (2013), good governance increases the accountability of a firm while weak governance creates a loophole for fund mismanagement.

In a study conducted by Fauzi (2009), there is no relationship between corporate social responsibility and financial performance. Another study conducted by Fauzi and Rahman (2007) indicated that the connection between CSR and corporate Financial performance is inconclusive. The study used a regression model and did not find any significant relationship between CSR and performance. Tsoutsoura (2004) also conducted another study establishing the relationship between CSR and Financial Performance. The study involved a timeframe of 5 years and included 422 firms. The study also used a regression model and established a positive relationship between financial performance and Corporate Social responsibility. Gheli (2013) also found similar results. Using a sample of 322 US firms, a regression model indicated a positive relationship between financial performance and CSR.

Another study was conducted by Ahmed (2014). The study established a relationship between CSR and CFP. The study established a positive relationship between CSR and CFP. Anastashia and Maria (2010) also performed a similar study in the banking sector. The study used data for 189 commercial banks. The regression analysis indicated no evidence that firms with high CSR activities have high financial performance.

Okwoma (2012) conducted a similar research in Kenya. The study involved the commercial banks and aimed to establish the relationship between CSR and CFP. A total of 28 banks were used in the study and a regression model was used to analyze the data. The study found a significant positive relationship between CSR and CFP. The study also found out that the investments in Corporate Social Responsibility did not influence the performance of the small banks. Ondieki (2013), also conducted a similar study on the commercial and services sector for the firms listed on NSE. Both descriptive and inferential statistics were used for analysis. The study established a positive association between financial performance and CSR practices. Kipruto (2014) also examined the influence Corporate Social responsibility has on the financial performance of firms. 44 commercial banks were utilized in the study. The findings indicated that the cost incurred in making the social investments for the commercial banks in Kenya has a relationship with the financial performance of the banks. The study also found that not all commercial banks disclose their investments on Corporate Social Responsibility.

Wambui (2012) in her study focused on the partnership between corporate firms and NGO's. Wambui concluded that the CFP and CSR are positively related. The findings were similar to
those of Obusubiri (2006) who also found a positive relationship between CSR and financial performance. The study also noted that investors feel more attracted to firms which are committed to solving social problems. The moral commitment earns them a good reputation. The findings however differed with those of Mutuku (2004) who carried out a study on the firms listed in the Nairobi Stock exchange. The study found no relationship between the financial performance of firms and corporate social responsibility.

A number of researchers have argued that investments in Corporate Social Responsibility by businesses bring long-term benefits to the firm indicating that CSR and financial performance of firms are positively related (Weber, 2008). According to Angelidis, Massetti and Magree- Egan, (2008), the relationship between financial performance and CSR is the least understood aspect of social investments. Jawahar and MC Loughlin (2001) also added that the relationship between CSR and financial performance is not yet established. High stakes in CSR is however associated with a positive corporate reputation. According to Rumelt (1987), corporate reputation is considered a strategic tool and can be earned through responsible behavior. Jensen and Meckling (1976) also argued that businesses can realize a long-term economic activity from solving a social problem. The authors argued that firms with high investments in CSR can easily get entry into new markets, maintain their customers, remain competitive and be in a better capacity to understand the needs and wants of the customers.

According to Marcia, Hassan, and Otgonsetseg, (2013), customers like associating themselves with corporations which are perceived to be socially responsible. Many researchers have found a directly proportional relationship between CSR and Financial Performance. The higher the CSR investments, the higher the financial performance. Lorraine (2009) also realized that the amount of CSR investments is also dependent on the size of the firm. Large firms are associated with high CSR investments. The literature above however indicates contradicting results. Some studies indicating a positive relationship between CSR and CFP, others indicating a negative relationship while others indicating a mixed relationship. There is need for more research on this aspect to determine the association between the CSR and the financial performance.

Methodology

The paper employed desktop research by reviewing and analyzing the audited published financial reports in NSE. The study was a survey of 11 commercial banks listed on NSE as per Dec 2017. CSR investments were measured using the monetary expenditure on the social activities, while the Financial performance was measured using the net profit after tax. A descriptive research design was used in the study. The design was appropriate for the study in carrying out a comprehensive, in-depth and holistic investigation of the financial performance of commercial banks listed in NSE. The causation of CSR investments on the financial performance of the banks was explored through conducting a survey for each bank. The study targeted the CSR investments made by the listed banks in Kenya for the period 2012 to 2016. Secondary data used for the analysis was retrieved from the banks' websites, published annual reports, NSE handbooks as well as published bank reports.

Data Analysis, Interpretation and Presentation
The figure above shows the various averages for CSR investments in education by the various commercial banks. Data relating to education investment by the banks for the five years analyzed. The average investment for Equity bank on education for the period between 2012 and 2016 was Ksh 0.058 billion which was similar to that of the cooperative bank. Barclays bank invested an average of Ksh 0.082 billion on education, CFC invested an average of Ksh 0.021 billion, DTB Ksh 0.056 billion, HF group Ksh 0.068 billion, I & M bank Ksh 0.0554 billion, KCB Ksh 0.182 billion, National Bank of Kenya Ksh 0.084 billion, NIC bank Ksh 0.098 billion and Standard chartered bank invested Ksh 0.0802 billion. The table indicates that the Kenya Commercial Bank invested the highest amount of money on CSR activities relating to education than other banks within the same period. The standard deviation for equity bank, cooperative bank, Barclays, CFC, DTB, HF group, I & M, KCB, National bank, NIC bank and Standard Chartered banks were 0.00837, 0.03114, 0.00389, 0.00938, 0.01483, 0.032323, 0.1078, 0.03975, 0.01924 and 0.12458 respectively.

The figure above shows the mean investments by the listed banks on Environment. The average investment for Equity bank on environment for the period between 2012 and 2016 was Ksh 0.1240 billion, Cooperative bank 0.7, Barclays bank invested an average of Ksh 0.072 billion on environment, CFC invested an average of Ksh 0.0148 billion, DTB Ksh 0.056 billion, HF group Ksh 0.068 Billion, I & M bank Ksh 0.0554 Billion, KCB Ksh 0.094 billion, National Bank of Kenya Ksh 0.062 billion, NIC bank Ksh 0.088 billion and Standard chartered bank invested Ksh 0.08 billion. Equity bank had the highest investment in environmental activities with an average investment of 0.1240. The standard deviation for equity bank, cooperative bank, Barclays, CFC,
DTB, HF group, I & M, KCB, National bank, NIC bank and Standard Chartered bank banks were 0.5595, 0.4301, 0.1304, 0.00554, 0.1517, 0.01304, 0.08732, 0.04393, 0.1643, 0.00837 and 0.02236 respectively. I & M bank had the highest variance. Data for the five years was analyzed for all the banks.

<table>
<thead>
<tr>
<th>BANK</th>
<th>Correlation Between Net Profit And CSR on Education</th>
<th>Correlation Between Net Profit CSR on Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQUITY BANK</td>
<td>0.724</td>
<td>-0.336</td>
</tr>
<tr>
<td>COPERATIVE BANK</td>
<td>0.888</td>
<td>0.330</td>
</tr>
<tr>
<td>BARCLAYS BANK</td>
<td>0.270</td>
<td>0.069</td>
</tr>
<tr>
<td>CFC BANK</td>
<td>0.730</td>
<td>-0.678</td>
</tr>
<tr>
<td>DTB</td>
<td>0.743</td>
<td>0.881</td>
</tr>
<tr>
<td>HOUSING FINANCE</td>
<td>0.273</td>
<td>0.130</td>
</tr>
<tr>
<td>I &amp; M BANK</td>
<td>0.659</td>
<td>0.898</td>
</tr>
<tr>
<td>KCB</td>
<td>0.845</td>
<td>0.044</td>
</tr>
<tr>
<td>NATIONAL BANK</td>
<td>0.687</td>
<td>0.661</td>
</tr>
<tr>
<td>NIC BANK</td>
<td>0.969</td>
<td>0.798</td>
</tr>
<tr>
<td>STANChart BANK</td>
<td>0.952</td>
<td>0.851</td>
</tr>
</tbody>
</table>

The figure above also indicates the average net profits for the listed banks. As shown in the figure above, the mean net profit for the period between 2012 and 2016 was Ksh 18.617451 billion, Cooperative bank 9.84576, Barclays bank had an average net profit of Ksh 8.1102 billion, CFC Ksh 4.6236062 billion, DTB Ksh 7.174042 billion, HF group Ksh 1.34782540 Billion, I & M bank Ksh 19.9773 Billion, KCB Ksh 13.275425 billion, National Bank of Kenya Ksh 0.80710760 billion, NIC bank Ksh 5.34835280 billion and Standard chartered bank invested Ksh 8.57984540 billion. The standard deviation for equity bank, cooperative bank, Barclays, CFC, DTB, HF group, I & M, KCB, National bank and Standard chartered banks were 8.503, 2.2287, 0.5706, 1.0256, 4.0669, 0.3168, 29.0204, 2.9285, 0.3995, 3.6860 and 1.5184 respectively. The banks which have high investments in CSR activities relating to both education and environment tend to indicate high net profits consequently. Equity bank had the highest investments in environmental CSR on average. The bank consequently recorded high net profit of 18.62 billion. KCB also is among the highest performing banks with an average net profit of 13.28 billion.
The figure below shows the various respective Pearson correlation coefficients between individual bank's financial performance and both the CSR investments in Education and Environment respectively as calculated using the SPSS software. The table indicates that there is a positive correlation between the two independent variables and financial performance except for a few cases which shows a negative correlation. The correlation coefficient between the CSR investment by Equity bank on education and environment is -0.336 and 0.724 respectively. This means that expenditures by equity bank on education are negatively related to the financial performance of the bank while the CSR investments on the environment are positively related to the financial performance. A coefficient correlation of 0.724 indicates a very strong relationship between CSR investments on environment and the financial performance. This implies that an increase in investments for Environmental activities leads to a consequent increase in the overall financial performance of the bank. The negative correlation of -0.336 indicates that an increase in CSR investments in education leads to a decrease in financial performance.

Cooperative bank has a positive correlation of 0.880 and 0.330 for CSR investments in education and environment respectively. This indicates that there exists a solid correlation between CSR investments for education and the financial performance. 0.880 is close to 1 meaning that a positive change in the amounts invested in education lead to a significant positive change in the overall financial performance of the bank. The correlation coefficient of 0.33 for environment indicates a weak positive relationship between the CSR investments made on environment and the financial performance. 0.880 is close to 1 meaning that a positive change in the amounts invested in education lead to a significant positive change in the overall financial performance of the bank. The correlation coefficient of 0.33 for environment indicates a weak positive relationship between the CSR investments made on environment and the financial performance.

The figure indicates that there was a positive correlation between the overall financial performance and CSR investments both in education and environment for Barclays bank. The correlation between the net profit and CSR investment on education was 0.27, which means that there was a weak positive relationship between the two variables. This implies that a positive change in the amount invested in education would lead to a less than proportionate change in the overall financial performance of the bank. The figure also shows that the correlation coefficient between the financial performance and the CSR amounts invested by the bank on the environment is 0.069. This means that there is a very weak positive relationship between the two variables.

CFC bank recorded a positive relationship between the overall financial performance and the CSR amounts invested in education, however, there was a negative correlation between CSR amounts invested on the environment and the financial performance. The correlation between the bank's financial performance and the amounts invested on education is 0.73, meaning that there is a strong positive relationship between the two variables. This implies that higher investments in CSR activities in education lead to a consequent higher net profit. On the other hand, the figure shows that the correlation coefficient between the amounts invested on the environment and the overall financial performance of the bank is -0.678. This implies that there is a strong negative relationship between the two variables meaning that an increase in CSR investment for environment leads to a decrease in the financial performance.

The correlation coefficient between CSR investments in education and the overall financial performance for Diamond Trust Bank, Housing Finance group, I & M, KCB, National Bank of Kenya, NIC bank and Standard chartered are 0.743, 0.273, 0.659, 0.845, 0.687, 0.969 and 0.952 respectively. This indicates a strong positive relationship between the variables for the banks in the rank of NIC; Standard chartered, KCB, DTB, National Bank of Kenya, I&M and HF group indicating the weakest positive relationship.
The correlation coefficient between CSR investments in environment and the net profit after tax for Diamond Trust Bank, Housing Finance group, I & M, KCB, National bank of Kenya, NIC bank and standard chattered are 0.881, 0.13, 0.898, 0.044, 0.661, 0.798 and 0.851 respectively. This indicates a positive relationship between the two variables for the aforementioned banks with I & M bank having the strongest positive relationship of 0.898 and KCB having the weakest positive relationship of 0.044.

<table>
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<tr>
<th>Coefficients for regression model</th>
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<tr>
<td>Model</td>
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<tr>
<td>(Constant)</td>
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<tr>
<td>CSR investments on education</td>
</tr>
<tr>
<td>CSR investments on environment</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial performance for Commercial Banks

The figure above shows the coefficients of the regression model which was deduced as follows:

Financial Performance = - 4.155 + 16.331X₁ + 6.093X₂

CSR investments on education were found to be significant as indicated by the sig value of 0.044 while that of CSR on environment was found to be insignificant as indicated by the p value of 0.300. A sig value of below 0.05 indicates that the relationship between the variables is significant. The sig value of 0.044 for education means that the CSR investments for education significantly affects the financial performance of the commercial banks. A sig value of 0.300 means that CSR on environment does not significantly affects the financial performance.

Testing the Goodness of Fit for the Model

<table>
<thead>
<tr>
<th>Model Summary</th>
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<tbody>
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<td>Model</td>
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<td>1</td>
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</table>

a. Predictors: (Constant), CSR investments on environment, CSR investments on education

As shown in the figure above, R is 0.929 indicating a very strong relationship between CSR education, environment and the financial performance. R square is 0.962 meaning that 96.2% of the financial performance can be explained changes in CSR investments on education and Environment. This means that the results of the model can be relied upon.

<table>
<thead>
<tr>
<th>ANOVA*</th>
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<tr>
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*The asterisk denotes significance at the 0.05 level.
Discussion
The main aim of the study was to determine the effect of corporate social responsibility on the financial performance of commercial banks listed in Nairobi Stock Exchange. The researcher adopted the correlational research design and found a positive relationship between the financial performance of the commercial banks and the CSR investments in education and the environment. This study, therefore, concludes that it is a noble practice for commercial banks to make budgetary allocations for corporate social responsibility. The education programs carried out by the banks as well as the initiatives undertaken by the banks to conserve the environment contribute in enabling the commercial banks to realize their dreams. The analysis indicated that banks which have high commitments in solving societal challenges through increasing
investments on the social course also yield high returns on net profits. The desire of firms to behave morally and ethically should, therefore, be a daily endeavour. Customers are continuously placing high value on moral responsibility. It, therefore, means that they will associate themselves with firms which demonstrate efforts to take into account the societal needs.

The best performing banks have been investing sufficiently in CSR and this makes them more attractive to investors, volunteers, and sponsors. The commitment to being a good corporate citizen comes along with high rewards from the customers, government favors, tax exemptions and attraction of capital. This study, therefore, justifies why highly successful commercial banks in the Kenyan banking industry such as Equity Bank, KCB, Cooperative bank, Barclays bank, I & M bank and DTB among others have continuously invested in CSR over a period of years. Some banks have also established independent foundations to spearhead the CSR activities across their areas of operations. The study also justifies why the leading banks are more aggressive in CSR investments than marketing. The finding of this study, therefore, agrees with the findings of Okwoma (2012), Kipruto (2010), Wambui (2012) and Obusubiri (2006) that CSR investments affect the financial performance of firms.

**Recommendations**

1) The study found out a lot of inconsistencies in CSR reporting by various firms. The study, therefore, recommends that the Institute of Certified Public of Accountants of Kenya (ICPAK) should follow up on emphasizing the implementation of standard reporting for CSR investments by business entities.

2) It is also recommended that the opinions of the shareholders regarding the amount of CSR invested by firms should also be taken into account. The shareholders for the banks listed in NSE are distributed across the country. The shareholders, therefore, are more likely to understand the market needs and inform decisions regarding the kind of activities to be undertaken by the firms.

3) It is recommended that corporate managers should do a cost-benefit analysis while determining the amount of money to invest in CSR. Though social investments are good for the society, the banks are also expected to meet the needs of the shareholders. There is a need for managers to maintain a right mean between the extreme of CSR investments and financial returns. Some CSR programs can be more impactful to the society and beneficial to the banks than others. It is therefore very important for managers to select the most appropriate CSR portfolio which maximizes satisfaction in meeting the needs of the society and those of the shareholders.

4) The study indicated a positive relationship between CSR investments in education, environment, and the financial performance. The researcher recommends that similar studies be conducted on smaller banks and microfinance institutions to identify whether the same relationship exists.

5) It is also recommended that similar research is conducted in other sectors such as communication sector, manufacturing sector, mining industry, commercial services sectors among others to ascertain whether the relationship between investments on CSR and financial performance is consistent.

**References**


Emerging Issues in Economics, Finance, and Banking. An Online International


Does Gender Matter in Agro-Food Manufacturing Sector? Perceptions of Micro and Small Scale Food Processors in Kenya

Omillo-Okumu, Francis¹  Jude Omukaga, Jude²
University of Eldoret¹  Kabianga University²

Corresponding Email: omilofrancis@gmail.com

Abstract
This article is motivated by manufacturing and food security as critical components of the Big Four Agenda guiding development by Kenyan government today. However, gender asymmetry in the two sectors seems to frustrate the desired achievements. The research question “Does gender influence processing of advantageous food products among micro and small enterprises in Kenya?” guides the study. To answer this question, the study adopts a mix of constructivism and Longwe framework to survey micro and small food manufacturing enterprises registered in county governments of Busia and Nairobi, Kenya. Data is collected using both primary through interviews and literature review through refereed journals, reports and books. The enterprises are sampled by fisher sampling techniques in Nairobi and snowballing in Busia. The heads of the enterprises are interviewed by drop and pick semi structured questionnaires. The structured part is on a seven-point likert scale. Out of 132 entrepreneurs interviewed, 130 correctly filled the questionnaires that are analyzed using descriptive and inferential techniques. Explanatory study design is applied by both Pearson’s Correlation and Logit regression to determine the effect of gender on manufacturing advantageous foods in Kenya. The findings showed more men-owned food processing enterprises than women-owned. The results also indicated inverse correlation between gender and manufacturing advantageous food products. However, enough evidence lack to demonstrate that gender significantly influence manufacture of advantageous food products (Wald (1) = 1.339, p= 0.247, sig < .05, 2 tailed). However, attitudes indicating gender inequality among micro and small food processing entrepreneurs are still existent. The study recommends diffusion of gender equality norms by international and regional actors in developing countries. National and county governments of Kenya should mainstream gender in food processing policies and programs. Further studies could be done to determine the effect of gender on manufacturing sector other than food processing in Kenya. Other related studies could
be done on the age of women, marital status and number of child bearing’s effect on food processing sector.

**Key Terms:** Gender, Micro and Small Agro-Food Processing, Advantageous Food Products

**Background of the Study**

Everyday 925 million people, globally, sleep hungry despite gender analysis showing that women are able to feed the world (Oxfarm GB, 2012). This bitter irony is a reflection of gender inequality in food value chain. Solving food insecurity in the present and future involves challenging the current agricultural value chain models which allow and are driven by gender inequalities. Gender equality and ending hunger are intricately entwined. Gender in food value chain refers to socially and culturally constructed roles assigned to women and men on the basis of their sex in agricultural sector, from farm to plate. It defines behavioral relationships between the two sexes as well as economic roles they play at household, community and national level in food production, processing and marketing. Connell (2005) observed multidimensionality in gender inequalities experienced; ranging from owning economic assets, cultural authorities to interpersonal and personal emotions. The antithesis of gender inequality is gender equality which is an ideal international norm enjoying supports of many states currently.

Gender equality in food-processing implies inclusion and full involvement of men and in value addition and manufacturing phase of food value chain. Processing of food is a critical phase in food value chain that makes food reach people in right quantity and quality at all times. It creates value for a nation such as Kenya, whose most of its population is starving and unemployed. This phase of food value chain suffers competitive vulnerabilities because of gender asymmetry grounded on culture and traditions. The focus has been on women and girls because they are disadvantaged by main gender inequality patterns.

The struggle to realize gender equality can be traced first from *Universal Declaration of Human Rights* in 1948. Another landmark was between 1975 and 1985 which became the UN Decade of Women that globalized feminism. Gender equality also found prominent focus in the *International Covenant on Economic and Cultural Rights (ICESCR)* in 1976. The covenant yielded a gender sensitive framework lased with indicators to guide party states to realize gender equality in economic, social, cultural and work-related environment. Gender equality also found its support in the *Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)*. CEDAW recognized discrimination against women as an obstacle between women and their participation in political, social, economic and cultural life of their countries, societies, families and their own development. The convention pushed party states to condemn all forms of discrimination and violence against women. In 1995 the world converged in Beijing, China and agreed to promote women participation in all spheres on equal pedestal with men.

Besides international framework, gender equality has found backing regionally. Between 1990 and 2000 the European Union (EU) put more focus on gender equality
among member states. In the move towards equal society, EU diffused gender equality among its members and beyond on three fields: work/family reconciliation, equal opportunities and social policies (Lewis, 2006). Studies on emergent gender regimes discovered a lot of success by EU due to its growing polity and deepened power presence over states throughout the world and various policy domains (Walby, 2004). In Africa, the African Charter on Human and People’s Rights, Protocol to the African Charter on Human and People’s Rights (the Maputo Protocol) and Declaration on Gender Equality in Africa all recognize the adverse effect of gender inequality. The treaties push party states to combat gender inequality through effective legislative, policy and standards that would guarantee women full participation in the development agenda. Kenya has adopted most of these international and regional norms on gender through its Kenya Constitution 2010, Kenya Vision 2030 and various legislative frameworks. However, gender equality is yet to be realized in Kenya (Gicheru, 2013).

Agriculture is the bedrock of the Kenyan economy. Women participation has significantly increased since 1980s, particularly in production phase of agriculture. However household chores and cultural norms have restricted their full participation at value-addition phase and ultimate benefits (World Bank, 2009). Gender differences in various phases of food value chain arise from productive and reproductive roles of male and female persons in a community. Gicheru (2013) described the Kenyan agriculture as having gender disparities in access to economic resources, technologies, services and inputs. The landscape favored men to women. Women were mostly farm laborers yet owned no land. On market end, they had low membership in marketing cooperatives and engaged mostly in sale of fresh and highly perishable farm produce (ibid).

In advent of globalization, climate change, food security and stiff competition from free trade markets; food manufacturing has turned to be a very important phase and constituency of agricultural value chain. Food processing must be inclusive and technologically enhanced to produce high quantity, quality and value added products that can face hi-tech food commodities from overseas. Once this is done a country would be on the right path of food security, creating more jobs and meaningful incomes for small holder farmers.

**Research problem**

Does being male or female affect processing of advantageous food products? Despite women being excluded in critical phases of food value chain, erstwhile studies have dearth gap in explaining whether gender determined competitiveness in food processing in Kenya. It is this gap that the study seeks to address. Focusing on gender issues in food processing does not only address equality between men and women in the industry, but also fixes the structural changes aimed at reducing food insecurity and poverty. The desired state of food security, where all people have access to right quality and quantity of food demand that both men and women participate in all phases of food value chains. However, this is not the reality in most parts of the world. For example, technologies fabricated for food value-addition generally favour masculine tasks (World Bank, 2009). This disparity makes women benefit decimally from...
agricultural labour and ineffective in addressing starvation, unemployment and poverty in Kenya (Gicheru, 2013). By addressing this problem, the study contributes immensely to improvement of manufacturing sector in agriculture. This resonates to the country’s clarion call to create jobs through revival of manufacturing sector and increasing food security in the Big Four Agenda and Kenya Vision 2030.

**Research Objective, Question and Hypothesis**
Objective refers to what the research intends to investigate. This study’s objective is to find out the influence of gender on processing advantageous food products among micro and small enterprises in Kenya. To enhance the rigor and specificity of the study, the objective is transformed into question and hypothesis

- Does gender influence processing of advantageous food products among micro and small enterprises in Kenya?
- H0: Gender has no significant influences on processing of advantageous food products among micro and small enterprises in Kenya.

**Literature Review**
In order to allow theory and data collection to inform each other (Lewis & Nicholls, 2014), the study incorporated review of existing literature on gender and agricultural value chain. Review of literature, therefore, focused on gender empowerment frameworks and evidence that shade light and built into answering the research question. The areas of focus were: gender, processing of advantageous food products, theoretical and conceptual frameworks that anchored the study.

**Theoretical framework**
This study adopted a mix of constructivism and Longwe frameworks to answer the research question. Constructivist framework looked into gender as a socio-cultural construct and norm that could be changed, diffused and adopted by various social systems. Various institutions of power and influence such as United Nations (UN), regional bodies such as EU, East African Community (EAC) and states can force diffusion and adoption of these international norms in local social, interpersonal and individual contexts (Krook & Irue, 2010). One of these constructivist frameworks that successfully empowered women in Africa is Longwe. Longwe framework is a tool developed by Sara Hlupekile Longwe in Lusaka, Zambia. It guided planners in increasing gender equality and women empowerment; taking equal place as their men counterparts in development and control of factors of production (March, Smyth, & Mukhopadhyay, 1999). According to the framework, poverty was a consequence of women oppression and exploitation and not lack of production. The escape root out of poverty was developing people; making them take charge of their own lives and escaping from poverty (Anant, 2016). Longwe framework suggested five trajectories through which the social construction could be effectively delivered. They include welfare, access, conscientisation, participation and control. Welfare referred to women in food proceeding accessing material livelihood resources e.g. food, income and healthcare. Access meant that women reached and used factors of production as men did. It implied access to land, labour, credit, training and marketing facilities.
Concientisation, on the other hand, was about making men and women realize that women’s lack of access to land, labour, capital, entrepreneurship and technology. This study adopts Longwe framework to enhance results to the research question because of being African and widely accepted as an empowerment tool for women in a situation of discriminatory practices and rules that oppressed women (Longwe, 2002). Gender as a cultural construct, could be changed and work be fairly and agreeably be assigned to both sexes. No sex should be rendered a lesser being either economically or politically. The theory advocated for women mobilization into grouping to fight for their emancipation. This would enable them to meaningfully be involved all phases of food value chain, that is; decision making, policy making, planning, implementation and evaluation. Finally, control related to equal authority over the factors of production and distribution of benefits from the food value chain.

a) Empirical review
Globally women are recognized as critical players in food production; producing 50% of the foods. However, they encounter gender specific barriers such as lack of effective technologies, credit for processing and their incomes are culturally meant for family survival with little economic value. A study on Canadian farm women revealed that though women played critical role in agriculture, poverty is still feminized. Canadian farm women disproportionately accessed education, credit and income compared to men (Roppel, Desmarais, & Martz, 2006). In west Asia, Lebanese women encountered gender specific barriers such as land ownership, credit access and women unfocussed extension programs (United Nations, 2001). In Andean region and Latin America cultural, economic and social conditions enlarged developmental inequalities between women and men. More women are part of poor households with most of them having no income and those who were employed earned relatively lower than their men counterparts. In 2011, women in Peru received 75% of the man’s wage. In Bolivia and Ecuador, it was at 80% and 96% respectively (Polar, Babini, & Flores, 2015). Longwe (2002) found discrimination against women in developing countries an enormous problem. In sub-Saharan Africa it is exacerbated by patriarchic ideologies engrained in cultural practices and norms whose custodians were men. This, she explains, gives men priority over control and access to factors of production. Gender issues have been overlooked and persistent gender inequalities obstruct women to progress (Spence, 2010).

b) Processing Advantageous Food Products
Food processing is the changing of raw agriculturally-based inputs into finished human food products. The processing of food is the next frontier and demand-end strategy meant to industrialize agriculture. It reduces post-harvest pilferage and improves food quality and shelf life of food commodities as well as widening the distribution area. The sector has transformed lives economically by creating employment and increasing incomes for farmers (Rottger & Da Silva, 2007). In France, the Netherlands, Poland and UK, this sector developed towns and enhanced spatial distribution of economic transactions and wealth (Leeuwen, 2007). In Taiwan, food processing was employed to address bad effects of international free trade phenomenon and stiff competition from
foreign food commodities (Council of Agriculture, 2002). In India, the food processing sector grew by 8.4%. The sector has transformed India to be one of the largest food exporters globally. Consequently, the government of India has embarked on improving the food processing industry so as to curb food waste through establishing mega food parks, widespread agri-modernisation initiatives and drawing food maps for processing and exportation (The Swedish Trade and Invest Council, 2015). Since 1970s, Micro and Small Enterprises (MSEs) also known as Jua Kali sector have received a lot of focus in Kenya as fast creators of skills, employment and source of livelihoods for both urban and rural populations. The sector contributed 76.5% of jobs, according to the Government of Kenya Economic Survey, 2005. Women-owned MSEs were about 612,848; accounting for 47.4% of the entire Jua Kali sector (International Labour Organisation, 2008). The sector permeated agriculture in form of small scale production and agro-processing. Though agro-processing is gaining fast growth, it is dominated by foreign multinationals with focus on oil, fruits, soft drinks, beer, dairy, meat and cereal processing (Oloo, 2010). This exposed micro, small and indigenous entrepreneurs to competitive vulnerabilities. At manufacturing level, only 6.6% of the employed people were women earning an average of KES 4,344 per month compared to KES 7,627 earned by men (ILO, 2008). Gender-lensed studies in jua kali sector further revealed that women-owned enterprises faced capital and regulatory obstacles (Naituli, Wegulo, & Kaimenyi, 2006). In agro-processing, women-owned enterprises in Kenyan lacked access to appropriate technologies, entrepreneurial trainings and marketing (Muluku-Mutuku, Ali-Olubandwa, & Odero-Wanga, 2006). This glaring gender disparities in manufacturing and the recent call by the government to focus on food security and manufacturing forms the motive for the researcher to conceiving food processing integrated with women empowerment.

c) Conceptual Framework

Conceptual framework is a diagram showing processes, concepts and how they relate. In an orderly manner, it indicates causative and resultant key issues in the problem; hence giving a concrete and clear mental picture of the whole study (Mvumbi & Ngumbi, 2015). In this context, the diagram depicting key concepts of the study and how they relate is as shown in fig.1 below.
Fig. 1 shows key variables that the study seeks to examine their relationships. They are gender of entrepreneurs and advantageous products among micro and small food processing sector. Gender is binomial; that is the entrepreneurs are either male or female. Advantageous foods are characterized by increasing income (profitability), meeting market demand and being differentiated. The study sought to demonstrate whether being a male or female accounted for variance in the manufacturing of profitable, demand-focused and unique products among micro and small food processors.

Research Design and Methodology
Whereas design is a plan, methodology is the procedure of gathering data and evidences to answer the research question. The study adopted explanatory design to investigate the extent to which gender (control variable) caused variance in processing of advantageous food products (predictor variable). The design uses Pearson’s product moment correlation to explain the relationships (Heppner, Wampold, & Kivlighan, 2008). It further uses logit regression to account for change in dependent variable caused by independent variable. The study sampled micro and small scale entrepreneurs involved in processing foods using a sample frame from the lists of permitted firms by County Governments of Busia and Nairobi. Due to poor data record, snowballing was used in Busia. Nairobi had enough data. Therefore, fisher sampling was used. A total of 188 entrepreneurs were sampled, but 132(70.2%) returned the filled questionnaires for analysis.

Data collection was by means of semi-structured questionnaires. The structured part was spread on a 7-point Likert scale. The questionnaire was piloted in Kisumu County. Validity and internal consistency of constructs in the questionnaire was tested using Cronbach’s Alpa test to show how items in a set are closely related (Molla & Bissdoff, 2012). The study processed 31 cases, n=23(74.2%) of which were found valid. A Cronbach’s alpha reliability statistics of 0.97 was gotten indicating excellent reliability of the instrument and the scale used for it.

After collection, data was summarized and analyzed to make sense out of it so as to answer the research question. An amalgam of descriptive and inferential techniques was used to analyze data. Both were employed because of their ability to trade off the weaknesses and strengthen of each other. Descriptive technique made sense out of data collected by summarizing it into central tendencies, dispersion, means, variances and frequencies. Inferential statistics employed Pearson correlation and binomial logistic regression analysis to determine the relationship between gender and processing advantageous food products in micro and small scale enterprises. Whereas Pearson correlation determined the nature and strength of relationship, binomial Logistic Regression (Logit) model showed the contributory variance in processing advantageous foods caused by gender. Logit also indicated the Pseudo R² that aided in establishing the fitness of the model. The equation of Binomial Logistic Regression was expressed as:

\[ \text{Log}[p/(1-p)] = b_0 + b_1X_1 + \varepsilon \]

Where:

- \( p = \) the probability that the advantageous product is high, \( p(Y=1) \)

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\[ p/(1-p) = \text{the "odds ratio"} \]
\[ \begin{align*}
X_1 &= \text{being women-owned or man-owned} \\
\epsilon &= \text{stochastic error}
\end{align*} \]

Hypothesis testing followed to measure the reasonableness of the claim. A procedure of four steps was followed. The steps included: stating the hypothesis in an alternative format; setting the criterion or level of significance of judging the claim (\( \alpha \) to be 0.05 or \( p < 0.05 \) as a criterion of its judgment); deciding the nature on sampling distribution of the test statistics if the hypothesis is true; and deciding on accepting or rejecting the hypothesis based on the set criterion (Myers, Well, & Lorch, 2010). Finally, the study determined the fitness of the model. It adopted Cox and Snell R Square and Nagelkerke R Square because scholars advised that more than one test are important in establishing goodness-of-fit to enhance each others accuracy (Hooper, Coughlan, & Mullan, 2008).

**Findings and Discussions**

**Gender in food processing industry**

The study examined gender effects on performance of Kenyan agro-food processors. Kenya has had a long-standing cultural traditions and subjective social norms that defined gender role and also influenced perceptions of the two sexes on using current technology for producing advantageous products. The survey results showed that most of the MSEs \( n=87, (65.9\%) \) were men-owned. Only \( n=43, (32.6\%) \) were women-owned. The results showed gender disparity in food processing sector. In 2006, Muluku-Mutuku, Ali-Olubandwa and Odero-Wanga observed similar findings during their study. Longwe (2002) attributed this low participation of women in micro and small food processing to socio-cultural obstacles that existed. The observed gender divide in food processing could imply that women were technology averse. They perceived themselves with low esteem; that food processing was a reserve for men. It could also mean that the technology employed for processing foods was masculine in design and meant for men role (World Bank, 2009). The overall implications are that women in Kenya have missed out on economic opportunities that food processing sector unveils. The opportunities include skills development, employment, increased incomes for women and enhanced capabilities to counter stiff competition from overseas products (Leeuwen, 2007; Rottger & Da Silva, 2007).

**Advantageous food processing in Kenya**

Advantageous food is defined by profitability, meeting market demand and uniqueness. These cues gave food products comparative advantage over rival products at the marketplace. The micro and small agro-food manufacturers interviewed agreed that on average \( n=130(98.5\%) \) their products were advantageous. The self-perception imply that the entrepreneurs were conscious of making products that would face globalization challenges of free trade and hi-tech products competition at the same time addressing nutritional needs of the market. The study responses resonates well with the report that predicted survivability of indigenous processing enterprises on making of profitable, market-focused and unique products (Council of Agriculture, 2002).
Gender and food processing relationship

After determining gender and advantageous food processing, the study embarked on evaluating the relationship between the two variables. The study adopted Pearson correlation and logit regression techniques to measure the relationships. Pearson correlation examined the relationship between the criterion variable (processing advantageous product – Y) and the predictor variable (gender – x variable) as indicated in table 1 below.

<table>
<thead>
<tr>
<th>Your gender</th>
<th>Sex</th>
<th>Advantageous product</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantageous product</strong></td>
<td>1</td>
<td>-.110</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td>N</td>
<td>-.110</td>
<td>1</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>130</td>
<td>132</td>
</tr>
<tr>
<td>N</td>
<td>130</td>
<td>132</td>
</tr>
</tbody>
</table>

Source: Author’s survey data, 2016

Table 1 shows that 130 responses were successfully analyzed using the Pearson’s correlation technique. The results showed a weak inverse ($r = -0.110$) relationship between gender and the advantageous food processing. The self-reporting responses indicate a slight gender bias in agro-food processing, favoring men (coded 1) to women (coded 0). This also meant that about 1.2% ($0.11^2$) was the variance shared between the two variables. In other words, gender accounted for only 1.2% of the variance ($0.11^2$) in processing advantageous food products.

Further logistic regression was employed to predict advantageous products using gender. Logistic regression used dichotomous data. Therefore, the responses that were generated as ordinal data on a 7 point Likert scale were transformed into binary or dichotomous data; that is 0 or 1. The values were expressed as indices of each respondent’s highest score divided by the maximum expected score. All values below 0.5 were considered 0 and all values above 0.5 were considered 1. A simple regression was run using SPSS and table 2 below was generated.
The aims of regression analysis were: to describe the way in which processing of advantageous food product varied with gender among *juu kali* manufacturers and test the hypothesis. Regarding accounting for change in advantageous product processing the study put the variables into a model equation for easy interpretation as below shown.

\[
\log \left( \frac{p}{1-p} \right) = 5.888 - 1.434X_1 + 1.239
\]

According to the results in table 2, unit increase in gender roles accounted for a decrease in processing advantageous products by 1.434. The study also showed that if gender variable was rated 0, processing advantageous product would increase by 5.888.

Next was testing of hypothesis. The hypothesis to be tested was: \(H_0: \) gender did not significantly influence the processing of advantageous food products in Kenya. The table 2 results show \((Wald (1) = 1.339, p= 0.247, \text{ sig} > .05, \text{ 2 tailed})\) at confidence level of 95% or \(P\)-value of 0.05 significance levels. The \(P\) value \(0.247\) is greater than the sig. value \(0.05\). The null hypothesis is upheld. Gender did not significantly influence the processing of advantageous food product among the MSEs in Kenya. Enough evidence to warrant significant influence on making advantageous foods by gender was not found among micro and small agro-food processors. In other words, women and men had equal capabilities in processing advantageous foods. Roppel, Desmarais and Martz (2006) found similar findings among farm women in Canada and all gender covenants have upheld this to fact.

Despite the fact that gender did not cause significant influence on processing highly competitive food commodities in Kenya, the entrepreneurs (both men and women) in the *juakali* sector harbored an attitude and perception that favored men. According to many studies these feelings have permeated into individuals, societies and institutions, mostly in developing nations and have cost women progress and sustainable development (Polar, Babini, & Flores, 2015; Gicheru, 2013; Spence, 2010). To correct these perceptions in all phases of food value chain, Roppel, Desmarais and Martz (2006) observed that it is not a matter of chance. Governments, regional institutions and development partners must take a lead in developing and diffusing mission oriented policies that are inclusive and more market-oriented. It means mainstreaming gender in
food processing. In Latin America and Caribbean, mainstreaming gender, recorded 11% drop in maternal deaths, drop in poverty and increased food security and environmental sustainability between the year 2000 and 2010 (Polar, Babini, & Flores, 2015).

After hypothesis testing, the study finds out the reasonableness of the claim. This is done using likelihood estimates and pseudo R square tests as shown in table 3 below.

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 Log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27.098a</td>
<td>0.011</td>
<td>0.056</td>
</tr>
</tbody>
</table>

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than 0.001.

Source: Researcher, 2016

Maximum likelihood estimation (MLE) estimates the model fitness using the coefficients. The likelihood function (L) measures the probability of observing the particular set of highly advantageous product values in the sample. The higher the likelihood function, the higher the probability of observing the highly advantageous products in the sample. MLE involves finding the coefficients \( a, B \) that made -2 times the log of the likelihood function (-2LL) as 27.098 as shown in table 3. The Cox and Snell Pseudo R\(^2\) formula estimates the proportion of variance in advantageous product processing accounted for by gender predictor, the strength of association between gender and the advantageous product variables and if the model fitted the data based on log-likelihood. Because R\(^2\)C&S could not reach a maximum of 1, statistics from the R\(^2\)Nagelkerke was applied to adjust for the realization of the maximum value. Based on the model, variation in the highly advantageous products ranged from 1.1% to 5.6%, depending on whether the Cox & Snell R\(^2\) reference or Nagelkerke R\(^2\) methods, respectively. The model fits the data because it has met the requirements of goodness of fit which is between Likelihood Ratio Index (LRI) of 0(model with no predictive value) and 1(model with a perfect fit).

**Conclusion**

To improve the state of food and manufacturing in Kenya, focus should be on women rights and their empowerment to close the gender gap. This is because the study findings show that both female and male agro-food processors have equal potential to manufacture advantageous foods that market demand and compete globally. However traditionally and culturally driven attitudes and practices still stifle women’s participation at food processing phase. Efforts need to be enhanced to challenge cultural values that affect these two agenda. It is
important, therefore, to bring women on board in food processing to exponentially enhance food security. For this to happen, reconstruction of individual and community mindsets is paramount. Regional institutions, states and development agencies must champion women empowerment. Specifically, the study suggests the following policy and practical interventions.

Policy interventions

1. Regional bodies like European Union (EU) and East African Community (EAC) with stronger infrastructure, polity and influence should cause diffusion and adoption of gender equality among states, especially in food value chain.
2. The two levels of government should create legal framework that mainstream gender in all phases food value chain.

Practical interventions

1. The national and county governments through agriculture and industrialisation department should keep data of all food processing enterprises disaggregated by gender and size.
2. The governments should improve food processing sector through developing mega food parks and draw food maps for processing and marketing for export market.
3. The governments, nongovernmental organisations and private sector should provide credit and trainings targeting women in food processing.
4. The governments, nongovernmental organisations and private sector should mobilise women into welfare groups to conscientise the society on importance of gender balance in food value chain and participation in development.
5. Fabricators should come up with technologies that handle female tasks in the food processing industry.
References


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Amukuzi, Marion¹
Riara University, Kenya¹

Kuria, Githinji Martin²
Karatina University, Kenya²
Abstract
A number of researches have indicated that training institutions have failed to impart skills and knowledge to students that would be transferred to the industry upon graduation and employment, hence the quality of journalists graduating is wanting. The purpose of this study was to investigate the influence of media training on the competency of journalists in Kenya. Curricula were sampled from selected Kenyan universities and adequacy of training material investigated. Non-probability sampling procedure involving purposive and snow-ball sampling methods were used to identify the 9 participants comprising media managers and senior journalists in one media organization. Data was analysed thematically and presented in a narrative form in accordance with the themes. According to the SG media managers and senior journalists, journalists trained in Kenya lack practical skills required in the job market. Consequently, media houses are recruiting graduates in other disciplines such as English, Medicine, and Law while others have resorted to re-training the new recruits.
It is recommended that media training institutions, regulators and other stakeholders should revamp existing curricula with the view to making them competency based.


Introduction and Background of the Study
The performance of media in Kenya is closely related to the level of journalism training where appropriate training provides students with knowledge and skills to write accurate, fair, balanced and impartial stories (Mbeke, 2010). In the 21st Century, there has been a move from traditional journalism to online journalism, bringing on board mixed news media which requires professional journalism across many media platforms.

According to Haak, Parks, and Castels (2012), in a technology-driven environment of accelerated transformation, journalism has gone through a gradual transformation in the way it is produced, distributed and consumed by the audience. Haak et al. (2012) further argued that many journalists are of the view that journalism is facing a crisis because competition has increased, forcing media owners to overwork personnel in the news organizations to do more for less. This increase in workload however, is not comparable to investment in staff training.

The Kenyan media has not been left behind in the adoption of the new technology. According to Mbeke (2010), a majority of media houses in Kenya have established internet services which they use to disseminate information. Moreover, many of them have websites where they engage in internet journalism
including blogging. The new technology has led to the rise of citizen journalism where the public collect and share new information (Mbatia, Busienei, & Ndonye, 2014).

However, despite the blooming technology, a number of researches have indicated that training institutions have failed to impart skills and knowledge to students that would be transferred to the industry upon graduation and employment (Gichobi 2015). The media in Kenya is criticized for its one sided reporting and sleazy tabloid style of pornographic content (Lando, 2013). The critical question to this research is to examine what the training institutions and media houses in Kenya are doing to salvage the industry, gain the trust of the public and continue to mentor young up-coming journalists (Wefwafwa, 2014).

Blom and Davenport (2012) observed that many researchers in and out of the journalism discipline are skeptical about the significance of the journalism degrees conferred and their lack of “great prestige” in comparison to other disciplines like the law schools, medicine and engineering schools.

**Problem Statement.**

A study done by Wefwafwa (2014) on training standards in Kenyan media colleges established that, they lack common journalism training standards; as a result, the quality of journalists graduating is wanting. Part of the reasons for this low journalism practice standards is inadequate training, inexperienced lecturers, ineffective regulation of the training institutions and inadequate funding (Ireri, 2017).

Berger (2009) noted that complaints have been made by the media stakeholders that many training institutions offer low quality courses, consequently, flooding the industry with “half-baked professionals”. Due to this short fall, recruiters from media companies are not always contented with the qualifications of recent graduates and that skills acquired by the journalism trainees often do not meet the expectation of employers (Kaane, 2014). This has been echoed by Linus Kaikai the NTV Managing Editor who emphasizes that media schools should invest in producing fully qualified journalists who do not need further training upon joining the job market (Gichobi, 2015).

According to Lohner, Banjac, and Neverla (2016), MCK is the body mandated in part to register and accredit journalists by certifying their competence. However, the council has not articulated the official standards that are the basis of quality training of journalists in universities in Kenya.

As a stop gap measure, media houses have opted to retrain their new staff before they are fully assimilated into the media house. The question then arises, is it the media house’ mandate to retrain or to work with market ready graduates? A case in point was the arrival of China Global Television (CGTV) in Kenya in 2012, which saw local stations such as NTV, KTN, Mediamax and K24 lose well trained and talented broadcast journalists. An immediate result was the reorganization of the affected stations with some stations pulling some of its programming and KTN’s ratings plummeting. Some media houses have had to
counter-poach so as to fill in the gaps of journalists who leave (Wasserman, 2015).

This research sought to identify the shortfalls of journalism graduates from the perspective of a media house and make an assessment of the approaches which can be adopted by journalism training institutions of higher learning in meeting these demands from media houses.

**Research Questions**

1) Were Kenyan journalists competent in relation to their training?
2) How adequate were the training facilities for media training in universities in Kenya?
3) In what ways did industry regulations influence journalism practice in Kenya?
4) How did institutional curricula influence professionalism of journalists in Kenya?

**Training of Journalists**

Journalism has shifted from the basic publishing or broadcasting into interactive dialogue with the audience members, often this happens in real-time as events continue to transpire and evolve. In fact, Krachvuk (2011) observed that journalism is no longer about publishing anymore; rather it entails communicating and having a conversation with the audience. Due to this rapid evolution, journalists are now faced with a challenge to understand and make use all these new media tools and this can be daunting especially with no proper training. New media journalism now requires journalists not only to make pictures but also to shoot videos and create multimedia content.

Krachvuk (2011) argued that in order to be marketable in the job market, every journalist should have a certain set of skills he or she can use. These include: ability to use software for graphics and video editing and blogging and familiarity with the basics of hypertext mark-up language (HTML), cascading style sheets (CSS) and viral marketing (Kravchuk, 2011). This means that journalism trainers and the media industry need to equip their learners and staff with hands-on skills that will make them relevant in the industry and not declare them redundant as is the case now being witnessed in several media houses in Kenya where a number of staff have been laid off.

According to UNESCO (2013), communication training and education in Africa is an import from North America and West Europe. Inspiration for teachers, curricula and textbooks is from the Western countries. Most of the trainers are Western educated, curricula are a replica of the Western models, and most books are written and published in the West. Courses offered in journalism training curricula in Africa vary from one area to another. Emphasis is laid on the skills training with print and broadcast journalism, advertising and public relations dominating the curricula in East and Southern Africa. In West and Central Africa, as well as in South Africa, the curricula generally combine both
the theoretical and practical courses. Courses offered range from certificate to diploma courses, Bachelors, Masters and PhD programmes (UNESCO, 2013).

**Competence of Journalists**

According to UNESCO (2007), the practice of journalism requires a spectrum of competencies which include: competency of general knowledge and intellectual capability, research, writing, editing, design and production; the ability to use the tools of journalism practice and to adapt to new technologies and be innovative in the formulation and dissemination of information; must have a professional understanding, including a background in ethics; the importance of journalism in society, the history of journalism, the organization of the news media, laws and ethics that apply to the journalism practice.

Clarke (2014) developed a pyramid for competent journalists. The cornerstones he came up were anchored on news judgment and reporting. The foundation also included language and analysis while the central stone was technology, in between was audio-visual knowledge and numeracy. Near the top were civic and cultural literacy and at the peak was ethics. According to Clarke, his pyramid of competence reaches the peak with a grounded understanding of mission and purpose of journalism.

![Pyramid for Competent Journalists](source: Clarke (2014))

**Figure 1: Pyramid for Competent Journalists**

Source: Clarke (2014)

Clarke (2014) argued that journalism is an initiative that creates wealth that can be used to influence better dissemination of information. Even though conflicts between professional and commercial interests exist and are almost unavoidable, all involved in the enterprise must have a clear vision of the mission and purpose as to why they exist. According to Godkin (2008), unlike the established professions such as medicine, engineering, law and others, any standard of journalistic competence must be centered on the practical application rather than theory as displayed by Lave and Wenger’s situated learning theory.

**Adequacy of Facilities in Media Training**

One of the challenges faced by media trainers in Kenya is the deficiency of contemporary equipment and resources, which inadvertently compromises
quality. According to Mbeke (2010), the type of journalism training which occurs in Kenya is outdated. Many journalism schools have not adopted the new journalism approaches that introduce students to new journalism approaches such as e-journalism, citizen journalism and digital photo processing. Mbeke (2010) maintained that the School of Journalism and Mass Communication at the University of Nairobi does not have a single studio for training broadcast journalism. Only a few universities are well equipped with studio facilities for training broadcasters. They comprise Daystar University, United States International University and Kenyatta University.

The cost of the training is also high and therefore discouraging for many young students aspiring to pursue careers in the media. Private training institutions seem to have better facilities than government ones (Mbeke, 2010). Moreover, the need for specialized journalism training is important. Most training institutions offer programmes that are too general. It is also critical to take note of current concerns such as gender and development in journalism training in Kenya in order to enhance the quality of journalism products.

**Curriculum Development and Design**

Davenport and Blom (2012) argued that in order to effectively carry out the respected assignment of preparing students to be successful and competent journalists, educators should make critical decisions on the core journalism curriculum and other courses that all journalism students must undertake to graduate, no matter their intended area of specialization. The media industry has been in constant motion with new developments everyday especially with the eruption of technology in the recent past. This has impelled widespread discussions about the responsibilities in higher education for training journalists, trainers and educators continually experiment on innovative ways to create the ultimate and super curriculum to serve their undergraduate students, at the same time, they also struggle to find the right formula to implement and integrate skills and theory classes.

**Role of Regulation in Media Training**

A number of institutions are responsible for ensuring regulation of the media and journalism practice in Kenya. However, the regulation of training institutions is unclear. Media training is somehow unregulated and the standard of journalism education varies significantly even though the UNESCO Model Curricula for Journalism Education is taken into consideration by several institutions (Lohner, Banjac, & Neverla, 2016).

The Media Council of Kenya is the body that sets media standards, regulates and monitors compliance. According to AMWIK (2014), The Media Council Act 2013 is an Act of Parliament that gives effect to Article 34 (5) of the Constitution which provides for Freedom of the Media. The Media Council Act, 2013 empowers the Council to consider and approve applications for accreditation by training institutions that want to offer journalism programmes. This is to ensure that such institutions include the basic minimum in the training
curricula as prescribed by the MCK in conjunction with other relevant authorities.

An educational institution that is not accredited by the media council or under any written law or that has not been granted a full charter shall not offer or teach courses in journalism. Any institution that go against this commit an offence the directors of such institution shall be liable, if convicted conviction, to a fine not exceeding twenty-five thousand shillings or face imprisonment for a term not exceeding two years, or both. However, MCK has raised a complaint that the level of funding by the government is inadequate to enable it run its operations (Cheploen, 2016).

Theoretical Framework

This research is anchored on Situated Learning Theory. According to Collins, Brown, and Newman (1988), situated learning also known as situated cognition is a learning theory propagated in the late 1980s by Jean Lave and Etienne Wenger and later expanded by John Seely Brown and his fellow researchers. This theory is based on the assumption that knowledge should be offered in an authentic context that should involve its application (Aydede & Robbins, 2009). The authors opine that learning should not be seen primarily as the transmission of abstract and contextualized knowledge between individuals, but it should be a social process within pre-determined conditions which include activity, context and culture.

According to Lave and Wenger (1991), training can make use of the two main ideologies of situated cognition into classroom practice: Firstly, the trainer should present an authentic context and secondly, should encourage mutual interaction and collaboration. The founders of the theory believe that rich contexts can replicate the learners' view and understanding of the real world and expand on the knowledge being transferred to them in different circumstances.

The theory of situated learning necessitates the introduction of new modes of practice in how instruction is designed and conducted both in schools and other instructional settings. The dynamic of instruction must be designed in such a way as to accommodate the negotiation of situational intent between teacher and student, who together must deal with the identifiable resources and conditions of an immediate instructional context (McLellan, 1996).

Methodology

This study adopted a case study design. Yin (2009) described a case study as an empirical inquiry that investigates a phenomenon in detail and this is done within its real-life context especially when the borders between the phenomenon being investigated and its context are not clearly evident. The case of a local media house helped to reveal any issues experienced by media managers and senior journalists. Standard Group offered the typicality of conditions experienced in other media houses in Kenya.

The choice of this case study was guided by Zainal (2007) who described a case study as a method that enables researchers to closely scrutinize data within
a specific context and that in most cases; a case study method selects a small geographical area or a limited number of individuals as the subjects of the study.

This study was situated in an instrumental case study where the case itself was secondary to understanding a particular situation or phenomenon. Besides, in instrumental case study, the focus is more likely to be known prior to the study and designed around established theory. Lastly, a collective case study involves the exploration of multiple instrumental case studies (Stake, 2005).

The target population of this study was media managers and senior journalists at the Standard Media Group. Equally, relevant documents such as curricula from the University of Nairobi, Daystar University and Riara University were analyzed. The University of Nairobi was chosen because it is among the first public universities to offer journalism, Daystar was among the first in private universities while Riara University started offering the journalism programme in early 2017. 12 participants from the SG were interviewed.

**Result and Discussion**

The results for data collected on perceptions on the competence of Kenyan journalists, adequacy of training facilities, influence of industry regulations on journalism, and the influence of institutional curricula on journalism training are presented in this section.

**Competence of Kenyan Journalists**

The participants identified various competence related issues in the media industry which emanate from the training. Through the lenses of news judgement, language and analysis, technology and audio-visual knowledge, all the participants from radio, TV, online and print sections commented on the fact that Kenyan journalists are not competently trained to handle the rigorous work environment.

Overall, the findings from media managers and senior journalists indicated that media training in Kenyan schools was wanting. To this effect, media schools were churning out graduates that could not be able to perform in the industry once employed. Kenyan new recruits were not competently trained; they raised issues as to whether the students were taught by people who had experience in the media. These findings are in line with a research conducted by Ireri (2017) on mass communication training in Kenya, where 91% of the participants sought additional training. This could be due to the lack of qualified teachers which was likely to create a feeling among Kenyan journalists that they needed further training.

With consideration to UNESCO’s model curricula, competencies and the findings of this research, Kenya’s journalism training appeared not to meet the minimum requirements for impactful training. According to UNESCO (2013), one of the bases for journalism training is the internal capacity of a school which covers infrastructure, curriculum, qualifications, experience of teachers and opportunities for media production.
Media houses were forced to re-train the new recruits. In-house training was important especially on issues that could be taught in school such as house policies. But media houses did not re-train the graduates afresh as it was expensive. This has been the outcry by media practitioners that the new recruits were not properly trained as expressed by the General Manager of Nation Media Group, Linus Kaikai, that media that media schools should invest in producing fully qualified journalists who do not need further training upon joining the job market (Gichobi, 2015).

**Adequacy of Facilities in Media Training Schools**

In relation to adequacy of facilities, communication scholars such as Mbeke (2010) and Ireri (2017) have documented on the lack of modern equipment and resources for media training in schools. Their argument is that the kind of journalism training which occurs in Kenya is outdated. This was confirmed by the participants who indicated that they did not have the facilities to aid in media training. The argument by Mbeke (2010) was that private universities are better equipped to offer media training however some of the participants who trained in private universities reported that the facilities were not adequate.

Two participants who schooled abroad reported that they had the required facilities hence the training was more effective and hands-on. One of the participants did not know how to operate a camera even though he had gone through four-year training in communication in Kenya but when he went abroad he was taught how to use a camera within a few weeks of enrolment. The participants mentioned that Kenyan media training institutions were not ready to invest in the facilities.

Due to the inadequacy of facilities, students encountered some equipment for the first time when they got employed. A respondent lamented that most of the students were so ‘green’ that some of them could not handle basic equipment such as computers yet they had graduated with diplomas or degrees in media. This is contrary of some of the competencies outlined by UNESCO (2007) that journalists in all media houses should know how to operate both Macintosh and Windows desktop and laptop computers, use word processing and picture editing programs, and create a simple data base of their work. With the new technology and globalization Kenyan journalism students and graduates cannot compete at par with their counterparts from other countries such as Brazil where journalism schools adjusted to the technological changes by installing laboratories, creating new subjects and purchasing new equipment (Tarcia, 2008).

**Influence of Industry Regulation on Journalism**

The participants were of the view that the regulators both in the training and in the industry have not executed their mandate as required. One of the predicaments of the Media Council of Kenya was that the organization had only managed to register journalists and issue press cards as reported by one of the participants. MCK had also managed to offer some training to media
practitioners but the organization had not managed to regulate the training in the journalism schools as it was stipulated as one of its roles. The Media Council Act, 2013 empowers the Council to consider and approve applications for accreditation by educational institutions that seek to offer courses in journalism. This is to ensure that such institutions include the basic minimum in the training curricula as prescribed by the MCK in conjunction with other relevant authorities (AMWIK 2014).

MCK prepared and launched a standardized curriculum for media training in middle level colleges in Kenya in 2016 but more than a year later, the organization has not given any directions as to how the curriculum should be implemented. A respondent argued that MCK does not have the capacity to play its role effectively, indeed, this was confirmed by Cheploen (2016) that the council had complained that the government had not funded it adequately to enable it carry its operations.

The commission for University Education was also faulted for not having the capacity to carry its mandate. The argument was that CUE seem not consult with the professionals in the media industry so that they can advise them on the requirements for media training. For this reason, universities are designing programmes which get approved but they do not have the basic facilities and experienced to offer the training.

There was a suggestion that other organizations such as Communication Authority of Kenya (CAK), Kenya Bureau of Standards together with the Ministry of Education (KEBS) should play a role in ensuring training standards in media schools should be adhered to. It was suggested that KEBS should give an approval on the media equipment imported into the country. CAK has been advocating for broadcast of local content on Kenyan media but if the students are not being trained on how to come up with the local content, then the media houses suffer.

Influence of Institutional Curricula

According to the findings, there were gaps in the training curricula of journalism. The units offered did not seem to serve the purpose of instilling the right skills and expertise in the students. Studies reveal that countries such as the US redesigned their curricula and developed new courses to prepare students for practicing news in multiple media platforms (Castaneda et.al 2005). Lanerolle and Harber (nd) suggested that the core curriculum should move away from the print bias that has dominated most journalism teaching, to a more ‘media-neutral’ position where there is a balance in the need to prepare students for the job market and also to prepare them for the constant change in the media industry due to new developments.

According to most of the participants, due to the inadequacy of facilities as earlier mentioned journalism students were given more theoretical classes as compared to practical sessions even though the curricula indicates that these
units should be taught practically. Students therefore graduated without gaining the much needed hands-on skills and they had to be retrained once they got employed. According to CUE guidelines, university curriculum is often designed by the individual departments with the more experienced lecturers giving their input regarding the content to be included in the curriculum. The findings corroborate Mwebi (2015) argument that the curriculum development process at the university level in Kenya is facing a myriad of challenges in this century where university expansion and enrolment has reached an all-time high.

According to UNESCO (2007), for journalists, competency in the national language and the language they use in their work is essential. In many countries, and for journalists hoping to work beyond their national borders, competency in English and other languages is recommended. The findings reveal that most of the Kenyan journalism students are not competent in language especially English therefore media employers especially in print prefer to hire graduates of English Literature. The University of Nairobi, Daystar University, and Riara University offered one unit in English; the three universities also offer one unit in Kiswahili.

A respondent who studied Communication and Literature revealed that the units he studied in Literature helped him improve his creative writing skills. The units were Introduction to Prose, Creative Writing, and Stylistics. This had been revealed by Philip Ochieng that Kenyan reporters are not the most educated in the dominant language of Journalism-English (Wanjohi, 2015).

The findings revealed that journalism schools are not up-to-date with the new developments in technology which are shifting the way news is produced and consumed by the audience. The participants advised that media schools should train more on Online Journalism, Social media management and data mining and management. A study by Kwanya (2014) revealed that the World Wide Web and social media have taken the center stage in journalism leading to the rise of the new media concepts such as online journalism, citizen journalism, community journalism and civilian journalism and that journalists need new media skills which can be learnt from webmasters and those newspapers need not hire journalists but senior content producers who can create multimedia content and write articles as well.

Specialization or beat reporting is crucial in news reporting. Media houses prefer to hire graduates of areas such as Medicine, Law, and Business among other key areas to report on them competently. In contrary, Mbeke (2010) revealed that most training institutions offer courses that are general in nature. It is also necessary to mainstream topical issues and concerns such as gender and development in journalism training in Kenya in order to enhance the quality of print, reporting, and broadcasting.

In accordance to UNESCO (2007) on the competence of journalists, a specialized knowledge of at least one subject area is important to journalism. This was reiterated by His Highness the (Aga Khan, 2017) that journalists should specialize in areas such as economics, agriculture, religion and report well on
them. The University of Nairobi has elaborate units in the beats of health, business, education among others. Daystar University appears not to offer any specialized units while Riara University offers a unit called Specialized Reporting, however, it is impractical for students to master any of the beats in one semester.

The period it took to train journalists was challenged. Undergraduate courses should take four academic years as per the CUE requirement. The duration for diploma programmes is not clear as some take one year while others two years. The proposed standardized middle level training curriculum should take a minimum of three years. At the University of Nairobi students are taught for three hours over a duration of fifteen weeks which makes forty-five credit hours per unit. At Riara University, out of the fifty-three units on offer, eight of them which were heavy on practical had been given four credit hours per week therefore giving a total of sixty hours per trimester. The arguments by the participants was that the course content for some of the units need to be re-looked into this was in reference to a unit called writing for media at Daystar University where students were expected to learn how to write for broadcast, print and online within a semester.

A respondent suggested that students should produce broadcast programs every semester; the same students also need to take a number of other units every semester. This leads to one of the challenges of the converged media where students may be overloaded. This was mentioned by Lanerolle and Harber (n.d) who gave an example of Witswatersrand University in South Africa which collaborated with Multichoice and experimented on the idea of having students making short programmes that would be broadcasted on one of the DSTV mobile broadcast channels. The course demonstrated the challenge of having students undertake practical work in more than one medium simultaneously; the stress would sometimes be too much that it compromised the students’ learning. Nevertheless, the students will have enough portfolios to show case to their potential employers and this gives them an upper hand in job searching.

Conclusion

Overall, the study reveals that journalists trained in Kenya are not competent. They lack the practical skills that are supposed to enable them perform their tasks at ease once employed. Due to this reason, media houses are recruiting graduates of other areas such as English, Medicine, and Law among other key areas. Some media houses have resorted to re-train the new recruits so as to enable them perform their duties. Journalists are of the opinion that training schools should do better by investing in the right infrastructure to aid in media training. On the other hand, although universities are introducing journalism programmes to the courses they offer, they have not done the appropriate research to find out what is required in terms of facilities and trainers. The regulators have also failed to play their role by ensuring there is quality in
journalism training. Universities, regulators and media houses need to intervene so as to salvage the journalism industry and redeem its name.

Recommendations

a. The study made the following recommendations:

2) Media trainers need to be in touch with what is currently happening in the industry and impart the right skills to the students.

3) The trainers need to have some media experience so as not to teach the students from books but from the knowledge they have acquired from the industry.

4) The trainers also need to be more rigorous in the training so that the students get used to the pressure of working in the media and beating the strict deadlines.

5) Training institutions should invest in the right facilities to enable students get the practical skills.

6) Training institutions should also ensure that they admit manageable numbers of students per class so that they all have an opportunity to learn how to use the equipment and software. Small numbers also ensure maximum attention is given to the students and interaction becomes easy.

7) Training institutions should collaborate with the media industry maybe through short programmes where students and the media professionals interact and have meaningful discussions, offer internships, and apprenticeship opportunities to the students. The professionals can also mentor the young upcoming journalists so that there is continuity in professional dissemination of information. Collaborations with the industry will also ensure that students have access to the facilities that are being used in the media houses.

8) Trainers should be at the forefront in coming up with new innovations to aid in media training and dissemination of information. This can be through carrying out research in new areas. A suggestion was given for schools to give skills on Virtual Reality which is the next big thing in the world.

9) Universities should form associations and partnerships with players in the industry so as to evaluate the methods of training and address any difficulties encountered in training.

10) Training institutions should involve experts in curriculum development so that they do not just replicate curricula of other universities but they should do intensive research and understand the needs of the industry and what new areas to include in the curricula.

11) Universities should also carry out curricula reviews in conformation to CUE requirements, reviews will ensure that new market trends are captured.

12) There is a need for regulators both in the training and in the industry to play their active role in ensuring journalists are competently trained. They
should also carry research on requirements of the industry and ensure schools meet the requirements before they are allowed to offer journalism programmes. MCK should ensure it rolls out the proposed standardized curriculum for middle level colleges and together with other bodies such as CUE instill the same standards in the training of journalists at the universities.

13) Media houses should have an interest to find out how training is done in schools and offer solutions on the best practice rather than resorting to hiring graduates of other programmes who do not have any media training. Media houses also have an upper hand in redeeming the media industry right from the training; this could be through their willingness to collaborate with training institutions and offering internships to students. At the end, it will be a win-win situation whose effect will roll down to the audience whose media needs will be met.

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Mungai, Robert Gitau¹ Wamweya, E².
¹Kirinyaga University, ²Jomo Kenyatta University of Agriculture and Technology, Kenya.
Correspondence: gitauwamuigai@yahoo.com

Abstract
Commercial banks play a vital role in the modern-day economies. The core business of the banking sector worldwide is creation of credit to deserving and deficit units of the economy, a role that also happens to be the main income generating activity for the banks. This activity comes with huge risks; both to the lender and the borrower. Banks are particularly subjected to a wide array of risks in the course of their operations. These risks generally fall into three categories namely: financial, operational, and environmental. Of these risks experienced, credit risk is of great concern to banking management and regulators as this can easily lead to bank failure. This study is seeking to investigate the effect of credit risk on financial performance of commercial banks in Kenya. The study will operationalize credit risk through capital to risk weighted assets, asset quality, loan loss provision as well as loan to advance ratios while financial performance will be measured by return on equity (ROE). Secondary data will be extracted from audited financial statements of all the 44 commercial banks under the purview of Central Bank of Kenya (CBK) for the 10-year period covering 2008 to 2017. The study will adopt longitudinal research design using an in-depth analysis of entities over a lengthy period of time. Regression analysis will be used to estimate the relationship between the independent and dependent variables. The F and t ratios will be used at 95% confidence level to determine the significance or otherwise of the overall model and the respective coefficients of the independent variables.
respectively. Findings of the study will be useful to academicians and management of commercial banks as well as policy formulators. 

Keywords: Credit Risk, Financial Performance, Commercial Banks.

Introduction and Background of the Study

Kenyan banks are inevitably exposed to credit risk because they grant credit facilities as they accept the deposits. Credit risk is the possibility of losing the outstanding loan partially or totally, due to credit events (default risk) (BCBS, 2001). Credit risk is the exposure faced by banks when a borrower (customer) defaults in honoring debt obligations on due date or at maturity (Coyle, 2000). Kargi (2011) indicated that credit creation is the main income generating activity for the banks. As a result, adequate management on loan processing is critical for the growth and survival of the banks otherwise the credit activity may lead to financial distress.

CBK supervision annual report 2013 indicated that the ratio of non-performing loans to gross loans increased from 4.7 percent in December 2012 to 5.2 percent in December 2013. Later the ratio increased from 5.2 per cent in December 2013 to 5.6 per cent in December 2014 and CBK was monitoring closely institutions that were experiencing deteriorating asset quality. The report also indicated that there was also a decrease in sector’s capital adequacy, which is measured by the ratio of total capital to total risk weighted assets in the same year. The increasing level of non-performing loan rates in banks books, poor loan processing, undue interference in the loan granting process, inadequate or absence of loan collaterals among other things are linked with poor and ineffective credit risk management that negatively impact on banks performance. It is therefore crucial to analyze whether the credit risk indicators are affecting the financial performance of the banks in the study attempting to make a modest contribution to literature on credit risk.

According to Mudge (2000) a consistent framework for evaluating firm wide risk and return across diverse financial activities is a key to evaluating the benefits of potential mergers among banking firms. Brown and Manassee (2004) observed that credit risk arose before financing of business ventures. Banks and other intermediaries can transfer the payment delays and the credit risk among producers, or between producers and outside investors (Demirguc-Kunt&Huzinga, 2000). Afriyieet al. (2012) examined the impact of credit risk on the profitability of rural and community banks in the Brong Ahafo Region of Ghana and indicated a significant positive relationship between non-performing loans and rural banks’ profitability revealing that, there are higher loan losses but banks still earn profit. Kithinji (2010) analyzed the effect of credit risk (measured by the ratio of loans and advances on total assets and the ratio of non-performing loans to total loans and advances) on return on total asset in Kenyan banks. The study showed that the bulk of the profits of commercial banks is not
influenced by the amount of credit and non-performing loans, implying that there are other variables apart from credit and non-performing loans impact on banks’ profit.

**Commercial Banks in Kenya**

According to CBK (2013) supervision report of December 2013, out of the 44 commercial banks 30 of them are domestically owned and 14 are foreign owned. In terms of asset holding, foreign banks account for about 34% of the banking assets as of 2013. The Kenyan financial system is dominated by commercial banks as financial intermediaries that act as conduits between the surplus economic units and the deficit economic units (Beck, Demirguc-Kunt & Levine, 2009). According to Rose (2002), a commercial bank is simply a business corporation organized for the purpose of maximizing the value of the shareholders’ wealth invested in the firm at an acceptable level of risk. Even if the institution is member-owned or has a philanthropic motivation, the principle of earning a profit still applies. Obtaining a positive net income is imperative for permanency and sustainability. What may differ between a for-profit and a not-for-profit institution is the degree of profit accumulation and the use of those profits.

Commercial banks are licensed and regulated pursuant to the provisions of the Banking Act and the Regulations and Prudential Guidelines issued thereunder. They are the dominant players in the Kenyan Banking system and closer attention is paid to them while conducting off-site and on-site surveillance to ensure that they are in compliance with the laws and regulations. The banking industry has been earmarked as a key pillar to the achievement of vision 2030 (a long-term strategy to achieve sustainable growth by year 2030) through increased savings, encouragement of Foreign Direct Investment (FDI), safeguarding the economy from external shocks as well as propelling Kenya to become a leading financial center in Eastern and Southern Africa.

Government of Kenya statistics reported an alarming 45% annual average increase in number of economic crimes (GOK, 2011). Banks in Kenya lost a staggering Kshs 1.7bn in the three months August to October 2010. Commercial banks lost Kshs 761Milion in the first six months of 2010 through fraud, according to the Central Bank of Kenya (PwC, 2011). The Government of Kenya earmarked the banking sector as one of the key pillars to the achievement of vision 2030. Within the Medium Term Plan (2008-2012) under vision 2030, some of the target areas include development of a safe and reliable payments system that will ensure smooth transfer and settlement of funds between customers and banks as well as between banks. Towards this end, the use of mobile phone networks, internet, payment cards, operational resilience and security will be pursued in order to increase trust, integrity and confidence in the ICT based payment systems (Government of Kenya, 2008). In comparison with other East African economies, Kenya's banking sector has for many years been credited for its size and diversification. Private credit to GDP, a standard indicator of
financial development, was 23.7% in 2008, compared to a median of 12.3% for Sub-Saharan Africa. Based on the same indicator Kenya is ahead of Tanzania which has 12.3% and Uganda with 7.2% (Beck, Demirguc-Kunt& Levine, 2009).

**Finance Distress Theory**

Baldwin and Scott (1983) purported that when a firm’s business deteriorates to the point where it cannot meet its financial obligation, the firm is said to have entered the state of financial distress. The first signals of financial distress are violations of debt payments and failure or reduction of dividends payouts. Whitaker (1999) defines entry in financial distress as the first year in which cash flows are less than current maturities’ long-term debt. The firm has enough to pay its creditors as long as the cash flows exceeds the current debt obligations. The key factor in identifying firms in financial distress is their inability to meet contractual debt obligations.

However, substantial financial distress effects are incurred well prior to default. Wruck (1990) stated that firms enter into financial distress as a result of economic distress, declines in their performance and poor management especially on risks. Boritz (1991) depicts a process of a financial distress that begins with an incubation period characterized by a set of bad economic conditions and poor management which commits costly mistakes.

The relevance of the financial distress theory emanates from the liquidity and credit risk facing a firm. In the case of commercial banks, in ability to provide cash to depositors and loans to borrowers as and when the demand may constitute a liquidity crisis. Other creditors also need to be taken into account when firms are putting in place risk management measures. Credit risks in banks also need to be addressed since it may lead to financial distress. Loan portfolio management is an important determinant of the firm’s liquidity. The banks should manage the credit and liquidity risk in order to avoid the financial distress. The foregoing instigated the question as to what is the effect of the credit risks on the financial performance.

**Credit Risk and Financial Performance**

The main purpose of a bank existence is to accept deposits as well as to grant credit facilities, therefore inevitably exposed to credit risk. Credit risk is the most significant risk faced by banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risks (Gieseche, 2004). According to Chen and Pan (2012), credit risk is the degree of value fluctuations in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties. Coyle (2000) defines credit risk as losses from the refusal or inability of credit customers to pay what is owed in full and on time. Credit risk is the exposure faced by banks when a borrower (customer) defaults in honoring debt obligations on due date or at maturity. This risk interchangeably called counterparty risk is capable of putting the bank in distress if not adequately managed.

Empirical evidences and results of various studies show a mixed trend on the
effect of credit risk on bank performance. While some established a negative relationship between credit risk and bank performance, others found a positive relationship. In the extreme is the study that found no relationship between credit risk and bank profitability. Also, some of the studies considered the overall risk as a determinant of bank performance, others focus on credit risk as the major risk affecting bank profitability.

Hosna et al. (2009) studied the relationship between non-performing loan and capital adequacy ratios and profitability for four Swedish banks covering a period of 2000 to 2008. The study showed that rate of non-performing loan and capital adequacy ratios was inversely related to ROE though the degrees vary from one bank to the other. Such inverse relationships between profitability, performance and credit risk measures were also found in other studies (Achou and Tenguh, 2008; Kolapo et al., 2012; Musyoki and Kadubo (2011).

Kithinji (2010) analyzed the effect of credit risk measured by the ratio of loans and advances on total assets and the ratio of non-performing loans to total loans and advances on return on total asset in Kenyan banks from 2004 to 2008. The study found that the bulk of the profits of commercial banks are not influenced by the amount of credit and non-performing loans. The study provides the rationale to consider other variables that could impact on bank’s performance and also a longer period of the study so as to capture the real picture of the banks’ performance. Hence this study included the impact of liquidity and market risk as components of the financial risk.

Afriyie et al. (2011) examined the impact of credit risk on the profitability of rural and community banks in the Brong Ahafo Region of Ghana. The study used the financial statements of ten rural banks from the period of 2006 to 2010 (five years) for analysis. The panel regression model was employed for the estimation. In the model, of Return on Equity (ROE) and Return on Asset (ROA) were used as profitability indicator while Non-Performing Loans Ratio (NLPR) and Capital Adequacy Ratio (CAR) as credit risk management indicators. The findings indicated a significant positive relationship between non-performing loans and rural banks’ profitability revealing that, there are higher loan losses but banks still earn profit. He found that there is a relationship between the credit risk management and profitability of selected rural banks in Ghana.

Kargi (2011) evaluated the impact of credit risk on the profitability of Nigerian banks. Financial ratios as measures of bank performance and credit risk were collected from the annual reports and accounts of sampled banks from 2004-2008 and analyzed using descriptive, correlation and regression techniques. The findings revealed that credit risk management has a significant impact on the profitability of Nigerian banks. It concluded that banks’ profitability is inversely influenced by the levels of loans and advances, non-performing loans and deposits thereby exposing them to great risk of illiquidity and distress. The comprehensive analysis of credit risks including capital to risk weighted asset ratio needed to be considered. Hence the current study considered these
pertinent variables in its analysis. Kolapo et al. (2012) using panel model approach carried out an empirical investigation into the quantitative effect of credit risk on the performance of commercial banks in Nigeria over the period of 11 years (2000-2010) from the selected five commercial banks. The traditional profit theory was employed to formulate profit, measured by Return on Asset (ROA), as a function of the ratio of Non-performing loan to loan and advances (NPL/LA), ratio of Total loan and Advances to Total deposit (LA/TD) and the ratio of loan loss provision to classified loans (LLP/CL) as measures of credit risk. Panel model analysis was used to estimate the determinants of the profit function. The results showed that the effect of credit risk on bank performance measured by the Return on Assets of banks is cross-sectional invariant. Their findings show that profitability is reduced by increase of non-performing loan and loan loss provision and that the effect of credit risk is similar across banks all banks considered in the study. However, an increase in total loan and advances increase the profitability.

Poudel (2012) explored various parameters pertinent to credit risk management as it affects banks’ financial performance in Nepal using parameters such as default rate, cost per loan assets and capital adequacy ratio. Correlation and regression models were used to analyze the data where the study revealed that all these parameters have an inverse impact on banks’ financial performance. Observation of t-test indicated that there is significant negative relationship between return on assets and independent variable which are default rate and capital adequacy ratio.

Afriyie et al. (2012) examined the impact of credit risk indicators on the profitability of rural and community banks in the Brong Ahafo Region of Ghana. The study used the financial statements of ten rural banks from the period of 2006 to 2010 for analysis. The panel regression model was employed for the estimation where the definition of Return on Equity (ROE) and Return on Asset (ROA) were used as profitability indicator while Non-Performing Loans Ratio (NLPR) and Capital Adequacy Ratio (CAR) as credit risk management indicators. The findings indicate a significant positive relationship between non-performing loans and rural banks’ profitability revealing that, there are higher loan losses but banks still earn profit. This indicates that, rural banks do not have sound and effective credit risk management practices. Their study failed to consider other risk factors that affect the bank’s profitability.

Onaolapo (2012) analyzed the relationship between the credit risk management efficiency and financial health in selected Nigerian commercial banking sector. Data collections are mainly secondary spanning a 6 years’ period before and after consolidation programme (2004 to 2009). The study hypothesized negative relationship between Efficiency of Credit Risk Management, bank performance and operational effectiveness. The study used regression analysis and unit root test was used verify order of integration for each time series data employed. Findings indicate minimal causation between Deposit Exposure (DE) and
performance but greater dependency on operational efficiency parameters. In the study, test of stationary properties was conducted using Augmented Dickey Fuller (ADF) which indicated that all variables were non-stationary while the pair wise Granger causality suggested that Deposit Exposure performance influence does not hold for the Nigerian Commercial banking sector. The study captured most of variables or measures of credit risk management except the asset quality. Other advanced methods such as generalized method of moments least needed to have been used to analyze the data.

Ogboi and Unuafe (2013) examined the impact of credit risk and capital adequacy on banks financial performance in Nigeria. Their study used a time series and cross sectional data from 2004-2009 obtained from selected banks annual reports and accounts in Nigeria. Secondary data for the study were obtained from the published financial statement of six out of twenty one banks operating as at December 2009 which were selected by purposive sampling technique. Panel data model was used to estimate the relationship that exists among loan loss provisions (LLP), loans and advances (LA), non-performing loans (NPL) and capital adequacy (CA) which were the independent variables and return on asset (ROA) as the dependent variable to measure the profitability of the banks. The findings showed that sound credit risk management and capital adequacy impacted positively on bank’s financial performance with the exception of loans and advances which was found to have a negative impact on banks’ profitability during that period.

Marshal and Onyekachi (2014) carried out an empirical investigation on the effect of credit risk and performance of banks in Nigeria over the period of 15 year (1997-2011) on five banking firms that. Data were sourced from the annual reports and accounts statements/sheets of the banks in the sample which was time- series and cross sectional data and estimated using panel data regression techniques. The result shows that there is a positive relationship between Ratio of non- performing loans to loan and advances (Log NPL) and banks performance (Log ROA). Their study indicated that banks in the study carry a very minimal level of non- performing loans in their loan portfolio and as such this does not conform to our apriori expectations. Their findings also showed that there exist a positive relationship between ratio of loan and advances to total deposit (Log LA) and banks performance (Log ROA). The conclusion was that increase in loan and advances increases banks performance through interest income generated from loan and advance.

**Results and Discussion**

**Model Specification**

Return on equity was considered as a measure for financial performance and therefore, was used as the dependent variable whereas capital to risk weighted assets, asset quality, loss loan provision and loan and advances were considered as independent variables. The study assumed that the independent variables and the dependent variable had a general multiplicative Cobb Douglas functional
relationship shown in model 1.
ROE = f (CRWAR, LLPR, AQR, LAR)
(1)
Upon linearization and parameterization, the long run model was specified as:
ROE \text{it} = \beta_0 + \beta_1 \text{CRWAR}_\text{it} + \beta_2 \text{LLPR}_\text{it} + \beta_3 \text{AQR}_\text{it} + \beta_4 \text{LAR}_\text{it} + \alpha_i + \epsilon_i
(2)
And the short run model as:
ROE_{it} = \beta_0 + \lambda \text{ROE}_{it-1} + \beta_1 \text{CRWAR}_it + \beta_2 \text{LLPR}_it + \beta_3 \text{AQR}_it + \beta_4 \text{LAR}_it + \alpha_i + \epsilon_{it}
(3)
Where:
i = 1, ..., 43, t = 1, 2, ..., 10, In which ROE_i, t represents the performance of Bank i at time t, \beta_0 represents the model constant or intercept, \beta_i represents the coefficients of the independent variables. ROE_{i,t-1} is lagged bank performance, CRWAR_{i,t} is the capital to risk weighted assets ratio of bank i at time t, LLPR_{i,t} is the Loss Loan Provision ratio of bank I at time t, AQR_{i,t} is the Asset Quality ratio of bank i at time t, and LAR_{i,t} is the Loan and Advances ratio of bank i at time t, \alpha_i is the bank specific effect that is assumed to be normally distributed with a constant variance and \epsilon_{it} is the idiosyncratic error term which is assumed to have a normal distribution.

### Summary Statistics of Data

**Table 3.1: Summary Statistics**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Count</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>416</td>
<td>0.178</td>
<td>0.170</td>
<td>-0.909</td>
<td>0.500</td>
</tr>
<tr>
<td>CRWAR</td>
<td>415</td>
<td>0.242</td>
<td>0.143</td>
<td>0.057</td>
<td>1.102</td>
</tr>
<tr>
<td>AQR</td>
<td>396</td>
<td>0.166</td>
<td>0.305</td>
<td>0.002</td>
<td>4.110</td>
</tr>
<tr>
<td>LLPR</td>
<td>406</td>
<td>0.061</td>
<td>0.154</td>
<td>0.001</td>
<td>2.669</td>
</tr>
<tr>
<td>LAR</td>
<td>411</td>
<td>0.747</td>
<td>0.278</td>
<td>0.205</td>
<td>3.102</td>
</tr>
</tbody>
</table>

Table 3.1 shows that the number of observations per each variable varied. This may be explained by the unbalanced nature of the panel data used in the analysis. Table 3.1 additionally shows that on average the overall mean return on equity, core capital to risk weighted asset ratio, asset quality and loan loss provision were 17.8, 24.2, 16.6 and 6.08 per cent respectively. Therefore, over the period the banks were positively profitable, adequately capitalized and experienced some relatively high levels of deterioration in asset quality.

**Table 3.2: Pair-wise correlation between credit risk components and Return on Equity**

<table>
<thead>
<tr>
<th>Variables</th>
<th>ROE</th>
<th>CRWAR</th>
<th>AQR</th>
<th>LLPR</th>
<th>LAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRWAR</td>
<td>-0.251 (0.000)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

73
Table 3.2 shows that return on equity is significantly negatively correlated with all the components of credit risk except for loans and advances. This is at variance with the findings of Kolapo et al. (2012) who found positive relationship between profitability and loan and advances. Therefore, in the regression analysis it was expected that the coefficients of core capital to risk weighted assets, asset quality and loan loss provision would be negative. However, from correlation analysis the study could not tell whether or not the coefficient of loans and advances will be significant and the nature of signage of its coefficient. Additionally, Table 3.2 shows that the correlation between asset quality and loan loss provision ratio is positive and near perfect. To avoid endogeneity problems loan loss provision was dropped from the regression analysis.

**Empirical findings**

The study presents the findings as follows: Each long run model is presented separately and its post-estimation diagnostics discussed to establish the reliability of the findings. The study discriminates between the long run models using Hausman test. The study presents the naïve OLS and fixed effects estimates of the short run specification to establish the range where the coefficient of lagged return on equity should lie in the Generalized Method of Moments (GMM) specification. The study estimates and presents the GMM specification while presenting the instruments used and discussing the post-estimation diagnostics of the GMM model. Finally, the study presents a comparative summary of all the models and tests the hypotheses both in the short and in the long run.

The first long run specification of model 1 was the fixed effects model whose findings are shown in Table 3.3.

### Table 3.3: Fixed Effects Estimates for Model 1

<table>
<thead>
<tr>
<th>Dependent Variable: ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanatory Variable</strong></td>
</tr>
<tr>
<td>CRWAR</td>
</tr>
<tr>
<td>AQR</td>
</tr>
<tr>
<td>LAR</td>
</tr>
<tr>
<td>Constant</td>
</tr>
</tbody>
</table>

**Post Estimation Diagnostics**

<table>
<thead>
<tr>
<th>R-Squared</th>
<th>Within</th>
<th>Between</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.087</td>
<td>0.4181</td>
</tr>
</tbody>
</table>
Table 3.3 shows that the F statistic is 10.18 and is greater than the critical value at one per cent level of significance. Therefore, the variables which are the credit risk components are jointly significant in explaining the variations in return on equity. The interclass correlation (rho) is 58.9 per cent implying that 58.9 per cent of the variations in return in equity are due to differences across the banks. The within and between R-square is 8.7 per cent and 41.8 per cent respectively. Thus, 8.7 per cent of variations in the return on equity are due to differences within individual banks and 41.8 per cent of the variations are due to differences between the banks. The overall R2 is 28.9 percent, indicating that the variables considered in the model account for about 29 percent change in the dependent variables, while about 71 percent change may be as a result of other variables not addressed by this model.

The chow test statistic is 9.47 and is greater than the critical value at one per cent level of significance. Therefore, the null hypothesis that the fixed effects are equal to zero is rejected at one per cent level of significance. Thus the option of specifying the model as a pooled OLS model over the fixed effects specification is rejected at one per cent level of significance. The second alternative specification of model 1 is the random effects model whose findings are shown in table 3.4.

### Table 3.4: Model 1 Random Effects Estimates

<table>
<thead>
<tr>
<th>Dependent Variable: ROE</th>
<th>Coefficient (significance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRWAR</td>
<td>-0.381***</td>
</tr>
<tr>
<td>AQR</td>
<td>-0.242***</td>
</tr>
<tr>
<td>LAR</td>
<td>0.043</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.051***</td>
</tr>
</tbody>
</table>

**Post Estimation Diagnostics**

<table>
<thead>
<tr>
<th></th>
<th>Within</th>
<th>Between</th>
<th>Overall</th>
<th>Rho</th>
<th>Wald test (3, 365)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-Squared</td>
<td>0.086</td>
<td>0.434</td>
<td>0.301</td>
<td>0.515</td>
<td>55.69***</td>
</tr>
<tr>
<td>Rho</td>
<td>0.515</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

KEY p-value <0.01*** P-value <0.05** P –value<0.1*
Table 3.5 shows that the Wald statistic is 55.69 and is greater than the critical value at one per cent level of significance. Therefore, the variables (credit risk components) are jointly significant in explaining the variations in return on equity in the random effects specification. The interclass correlation (rho) is 55.7 per cent implying that 55.7 per cent of the variations in return in equity are due to differences across the banks as per the random effects model. The coefficient of determinations, R-square shows the within and between values of 8.6 per cent and 43.4 per cent respectively. Thus, 8.6 per cent of variations in the return on equity are due to differences within individual banks and 43.4 per cent of the variations are due to differences between the banks. The LM test statistic is 252.02 and is greater than the critical value at one per cent level of significance. Therefore, the null hypothesis that the cross sections are not heterogeneous is rejected at one per cent level of significance. Thus the random effects specification is preferred over pooled OLS.

A comparison of the post estimation diagnostics between the Fixed and random effects specification reveals that the conclusions are comparable. For instance, when POLS specification is compared with the estimated models it’s rejected in both instances. In addition, the overall explanatory powers of the specifications are not significantly different; the fixed effect specification explains an overall explanation 29 per cent while the random effects model has an overall explanation of 30 per cent. However, the consistency in post estimation diagnostics does not eliminate the need to discriminate between the models. The Hausman test statistics to discriminate between the specifications are shown in table 3.5.

Table 3.5: Model 1 Hausman Test

<table>
<thead>
<tr>
<th>Test statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.99</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Table 3.5 shows that the test statistics have a chi statistic of 12.99 with three degrees of freedom and a corresponding p value of 0.005. Therefore, the null hypothesis that the regressors and individual heterogeneity are strictly exogenous is rejected at one per cent significance level. Thus the FE specification is preferred over RE specification. Therefore, for the long run specification the fixed effects model should be interpreted.

To establish the bound where the coefficient of lagged profits would lie, the naïve OLS was estimated. The OLS estimates overstate the coefficient of lagged profits by attributing to it some explanatory power of the error term. Thus the OLS estimate provides the upper bound of the coefficient. The OLS estimates are shown in table 3.6.
Table 3.6: OLS Estimates for credit risk components

<table>
<thead>
<tr>
<th>Dependent Variable: ROE</th>
<th>Coefficient (significance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanatory Variable</td>
<td></td>
</tr>
<tr>
<td>ROE_{i-1}</td>
<td>0.604***</td>
</tr>
<tr>
<td>CRWAR</td>
<td>-0.199***</td>
</tr>
<tr>
<td>AQR</td>
<td>-0.137***</td>
</tr>
<tr>
<td>LAR</td>
<td>-0.091**</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.344***</td>
</tr>
</tbody>
</table>

**Post Estimation Diagnostics**

| R-Squared | 0.628 |
| F statistic (4, 314) | 132.31*** |

**KEY p-value <0.01*** P-value <0.05** P-value <0.1*

Table 3.6 shows that the coefficient of lagged return on equity is 0.604. Therefore, the upper bound for the coefficient of lagged return on equity in the GMM specification of the short run model should be 0.604. To get the lower bound the fixed effect estimates of the short run specification are used. Fixed effect estimation understates the coefficient by denying the lagged dependent variable some of its explanatory power, thus providing the lower bound. The fixed effect estimates of the short run specification are shown in table 3.7.

Table 3.7: Fixed Effects Estimates for credit risk components

<table>
<thead>
<tr>
<th>Dependent Variable: ROE</th>
<th>Coefficient (significance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanatory Variable</td>
<td></td>
</tr>
<tr>
<td>ROE_{i-1}</td>
<td>0.247***</td>
</tr>
<tr>
<td>CRWAR</td>
<td>-0.257**</td>
</tr>
<tr>
<td>AQR</td>
<td>-0.148***</td>
</tr>
<tr>
<td>LAR</td>
<td>-0.039</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.075***</td>
</tr>
</tbody>
</table>

**Post Estimation Diagnostics**

| R-Squared | 0.164 |
| F statistic (4, 314) | 13.34*** |

**KEY p-value <0.01*** P-value <0.05** P-value <0.1*

Table 3.7 shows the fixed effects estimates of the short run specification of model...
The coefficient of lagged return on equity is 0.247. Thus the lower bound of lagged return on equity in the GMM specification should be 0.247. Specifically, if the estimate is $\lambda$, it should lie in the interval $0.247 \leq \lambda \leq 0.604$.

Roodman (2006) states that when the data feature a large numbers of countries (N) relative to the time period (T), the GMM-difference estimator proposed by Arellano and Bond (1991) and the GMM-system estimator by Arellano and Bover (1995) and Blundell and Bond (1998) work well. These two estimators are typically used to analyze micro panel datasets (Eberhardt, 2012). To obtain consistent estimates of the short run specification, one step system GMM is used. The estimates are shown in table 3.8.

### Table 3.9: One Step System GMM Estimates

<table>
<thead>
<tr>
<th>Dependent Variable: ROE</th>
<th>Explanatory Variable</th>
<th>Coefficient (significance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE_{it-1}</td>
<td></td>
<td>0.579***</td>
</tr>
<tr>
<td>CRWAR</td>
<td></td>
<td>-0.146</td>
</tr>
<tr>
<td>AQR</td>
<td></td>
<td>-0.086*</td>
</tr>
<tr>
<td>LAR</td>
<td></td>
<td>-0.168***</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>-1.187***</td>
</tr>
</tbody>
</table>

**Post Estimation Diagnostics**

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hansen J test</td>
<td>40.5</td>
</tr>
<tr>
<td>AR (1)</td>
<td>-3.62 ***</td>
</tr>
<tr>
<td>AR (2)</td>
<td>-0.92</td>
</tr>
</tbody>
</table>

**KEY** p-value <0.01***, p-value <0.05**, p -value <0.1*

Table 3.8 shows the one step system GMM estimates for the short run specification of model 1. The Table shows that the coefficient of the lagged return on equity is 0.579. The coefficient, therefore, lies in the acceptable range of $ROE - 0.247 \leq \lambda \leq 0.604$ established by the naive OLS estimates and fixed effects estimates of the short run model 1. This points to consistency of estimates.

Table 3.8 further shows that the Hansen J statistic is 40.5 with a corresponding p-value greater than 0.1. Therefore, the null hypothesis of the validity of the over identifying restrictions for the instruments is not rejected at one per cent level of significance. Therefore, the instruments employed by the model are appropriate and lead to precise consistent estimates.

In addition, Table 3.8 shows that the test of autocorrelation in the error terms. The AR(1), first order autocorrelation, test statistic is -3.62 and is greater than the critical value at one per cent level of significance. Therefore, the null hypothesis that disturbance term (error term) has no first order serial correlation is rejected at one per cent level of significance. This is expected because of the dynamic
specification of model 1 and therefore, points to correct specification. The test statistic for second order serial correlation in the error term is -0.92 with a corresponding p-value that is greater than 0.1. Therefore, at one per cent level of significance the null hypothesis that there is no second order serial correlation in the disturbance term is not rejected at one per cent level of significance. This permits the use of instruments from the second lag and differences further supporting the argument of correct short run specification of model 1 using the one step GMM estimates.

To summarize the findings necessary to test the first hypothesis in the short run and in the long run. The findings in Table 3.3 through 3.8 are summarized in Table 3.9.

**Table 3.9: Effects of Credit Risk on Financial Performance of Commercial Banks in Kenya**

<table>
<thead>
<tr>
<th>Dependent variable: ROE</th>
<th><strong>Long Run Model</strong></th>
<th><strong>Short Run Model</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fixed Effects</td>
<td>Random Effects</td>
</tr>
<tr>
<td>ROE(_{t-1})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRWAR</td>
<td>-0.353***</td>
<td>-0.381***</td>
</tr>
<tr>
<td>AQR</td>
<td>-0.194***</td>
<td>-0.242***</td>
</tr>
<tr>
<td>LAR</td>
<td>-0.0281</td>
<td>-0.0489</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.826***</td>
<td>3.051***</td>
</tr>
<tr>
<td>Observations</td>
<td>365</td>
<td>365</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.2897</td>
<td>0.2897</td>
</tr>
<tr>
<td>Hausman Chi</td>
<td>12.99***</td>
<td></td>
</tr>
<tr>
<td>Wald</td>
<td>55.69***</td>
<td></td>
</tr>
<tr>
<td>F-test</td>
<td>10.18***</td>
<td></td>
</tr>
</tbody>
</table>

**KEY p-value <0.01*** P-value <0.05** P-value<0.1*

Table 3.9 shows that the signage of the coefficients is comparable be it in the short run or in the long run. The magnitude of the coefficients is comparable for the long run model but significantly differs in the short run specification as expected. Based on the post estimation diagnostics and theory, only the fixed effects model and the GMM specification results should be interpreted in the long run and short run respectively.

Table 3.9 shows that in the long run the coefficient of capital to risk weighted assets is -0.353 with a p-value less than 0.01. Thus, the coefficient is significantly different from zero at one per cent level of significance. Therefore, the null hypothesis that core capital to risk weighted assets has a significant negative effect on financial performance of commercial banks in Kenya is not rejected at
one per cent level of significance. The magnitude of the coefficient is 0.353; which imply that a one per cent increase in the risk weighted assets ratio reduces return on equity by 35.3 percentage points in the long run holding other factors constant.

Since capital to risk weighted assets ratio explains strength of the bank, it improves the solvency of the bank and capacity to absorb the loan loss when CRWAR is high. The ratio is expected to increase when the banks increase the capital and reduce when the banks increase the risk weighted assets. According to the study the former will reduce the return on equity as a result of holding excess capital. The latter will reduce the ratio as risk weighted assets comprise of the high loans that may result to increase in profitability of the commercial banks.

In the short run the coefficient of core capital to risk weighted assets is -0.146 with a p-value greater than 0.1. Therefore, the coefficient is not significant at either 10, five or one per cent. Thus in the short run the null hypothesis that core capital to risk weighted assets has a significant negative effect on financial performance of commercial banks in Kenya is rejected at one per cent level of significance. Thus in the short run growth in core capital to risk weighted assets does not influence financial performance of commercial banks.

Table 3.9 further shows that in the long run the coefficient of asset quality is -0.194 with a p value less than 0.01. Thus, the coefficient is significantly different from zero at one per cent level of significance. Therefore, the null hypothesis that asset quality has a significant negative effect on financial performance of commercial banks in Kenya is not rejected at one per cent level of significance. The magnitude of the coefficient is 0.194. This implies that one per cent deterioration in asset quality reduces return on equity by 19.4 percentage points in the long run holding other factors constant.

In the short run the coefficient of asset quality is -0.0859 with a p-value less than 0.1. Therefore, the coefficient is significant at 10 per cent. Thus in the short run the null hypothesis that asset quality has a significant negative effect on financial performance of commercial banks in Kenya is not rejected at 10 per cent level of significance. The magnitude of the coefficient is 0.0859. Thus in the short run deterioration in asset quality by one per cent causes a decline in return in equity of 8.6 percentage points holding other factors constant.

The results indicate a significant negative relationship between non-performing loans to total loans and commercial banks’ profitability revealing that, there are higher loan losses which causes declines in banks’ profit. These results are expected as banks take deposits and use the same to advance loans and the costs associated with these loans such as insurance costs reduce the profitability margins of the bank. Increase in the portfolio at risk may be caused by increase in loan books and hence an upward increase in insurance costs. Return on equity (ROE) is the reward to the shareholders for the funds they have invested with the banks after other financiers and costs, including liabilities such as taxes have
been paid. Therefore, increased portfolio at risk will reduce the revenue aspect and increase the cost associated as indicated by the analysis of non-performing loans. The correlation between non-performing loans and return on equity cannot be ignored.

An increase in the doubtful assets, which does not accumulate income, obliges financial entities to assign a significant portion of its gross margin to provisions in order to cover expected credit losses, consequently profitability is expected to be affected. The results also concur with findings of Kargi (2011) that banks’ profitability is inversely influenced by the levels of non-performing loans and deposits thereby exposing them to great risk of illiquidity and distress. The results are also consistent with Kolapo et al. (2012), Ruziga (2013), Claudine and Felix (2008) findings that return on equity (ROE) measuring profitability was inversely related to the ratio of non-performing loan to total loan of financial institutions thereby leading to a decline in profitability. This indicates that, Kenyan commercial banks are required to improve on sound and effective management practices on default.

With respect to loan and advances table 3.9 shows that in the long run the coefficient of loans and advances is -0.0281 with a p-value greater than 0.1. Therefore, the coefficient is neither significant at 10, five nor one per cent. Thus in the long run, the null hypothesis that loans and advances have a significant negative effect on financial performance of commercial banks in Kenya is rejected at one per cent level of significance. Therefore, other things being equal in the long run changes in loans and advances do not influence financial performance of commercial banks in Kenya.

In the short run the coefficient of loans and advances is -0.168 with a p-value less than 0.01. Therefore, the coefficient is significant at either one per cent. Thus in the short run the null hypothesis that loans and advances have a significant negative effect on financial performance of commercial banks in Kenya is not rejected at one per cent level of significance. The magnitude of the coefficient is 0.168. Thus in the short run a one per cent increase in loans and advances causes a decline in return on equity of 16.8 percentage points holding other factors constant.

The above results are expected because loans and advances are risky assets and their large share in bank’s assets means a growth of the bank’s exposure to risks. Thus, a high value of this indicator could also mean a possible weakening of the bank’s assets quality with a negative effect upon profitability which is proxied by ROE. The effect of loan loss reserve to gross loan on profitability is negative as earlier literature by Kolapo et al. (2012) and Sufian (2009) which indicated that profitability will be reduced as banks use more profit as buffer against their loan loss. In order to reduce loan loss so as to reduce reserve ratio and increase the profitability, prudential credit management is required.

To jointly test whether the components of credit risk negatively influence the financial performance of commercial banks in Kenya F test was used. The test
has a null hypothesis that all the coefficients of the components of credit risk are jointly equal to zero. Table 3.9 shows that in the long run the F statistic is 10.18 and is greater than the critical value at one per cent level of significance. Therefore, in the long run null hypothesis one that credit risk has a significant negative effect on the financial performance of commercial banks in Kenya is not rejected at one per cent level of significance.

In the short run the F statistic is 44.01 and is greater than the critical value at one per cent level of significance. Thus in the short run null hypothesis one that credit risk has a significant negative effect on the financial performance of commercial banks in Kenya is not rejected at one per cent level of significance. Thus credit risk influences financial performance of commercial banks in Kenya both in the short run and in the long run.

The results of this study are in line with the study’s prior expectation, credit risk is negatively and significantly related to bank performance. This implies that bank increased exposure to credit risk reduces profits. This may result by the fact that health of a bank’s loan portfolio may be reflected by changes in credit risk and affect the performance of the institution as indicated by Cooper et al. (2003). The findings of this study concur with studies by (Afriyie et al. 2011; Hosna et al., 2009; Ogboi and Unuafe, 2013; Marshal and Onyekachi, 2014) explained that there exist a significant negative association between credit risk components and financial performance. The study by Kithinji (2010) gives evidence that profits of commercial banks are not influenced by the amount of credits or loans. The results may be explained since an asset or loan become irrecoverable, in case of outright default or the risk of delay in servicing of loans and advances. Thus, when this occurs or becomes persistent, the performance, profitability, or net interest income of banks is affected. Duca and McLaughlin (1990) conclude that variations in bank profitability are largely attributable to variations in credit risk, since increased exposure to credit risk is normally associated with decreased firm profitability. These triggers a discussion concerning commercial banks that are exposed to high-risk loans tend to have higher the accumulation of unpaid loans and the lower the profitability. From the study a conclusion can be made that not the volume of loans but the quality of loans made.

**Summary, Conclusion and Recommendations**

The objective sought to determine the effect of credit risk on financial performance of commercial banks. All other factors held constant only 28.97% of the variation in profitability can be explained by change in credit risk. The findings revealed that bank credit risk has a significant negative effect on the financial performance of commercial banks in Kenya both in the short run and in the long run. This implies that bank increased exposure to credit risk reduces profits. This may result by the fact that health of a bank’s loan portfolio may be reflected by changes in credit risk and affect the financial performance of the commercial banks. This indicates that poor asset quality or high non-performing loans to total asset related to poor bank performance. Thus, it is possible to
conclude that banks with high asset quality and low non-performing loan are more profitable than the others. The capital may also be reduced by increase of loan loss provision which affects the profitability.

From above findings, it is recommended that management of Kenyan commercial banks should enhance their capacity in credit analysis, appraisals and loan administration. Clear credit policies and lending guidelines should be established. Management also is required to make sure that the terms and conditions are adhered to in loans approval. The study noted that credit risk though significantly affect the financial performance may not be the major factor that affect determinants of Kenyan banks profitability. Further research needs to be carried on other bank risks and factors.

References


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**Enhancing Small and Medium Enterprises Credit Access and performance through Technological Integration.**

**Douglas John and Wasike Jotham**

**Kirinyaga University**

**Correspondence:** johndouglas.jd92@gmail.com

**Abstract**

Small and Medium Enterprises in Kenya face innumerable challenges that affect their financial performance. Lack of financiers, market information gaps, and poor financial management practices are some of the factors that affect performance of Small and Medium Enterprises, unabated. These challenges can be solved through technological integration of the key market participants, especially financiers and suppliers. The purpose of this study was to establish a technological mechanism that brings together SMEs, financiers, and suppliers in a single technological platform with a view of improving business access to finance and profitability. The objective of this study was to establish a technological platform that integrates key market participants. A desk research was applied whereby online research on technological integration of market participants and SMEs financing and performance were analyzed. The study found out that technological integration of SMEs and key market players (creditors and suppliers) would enable the SMEs to access credit easily, provide perfect information on prices of commodities, promote fair competition, increase profits and minimize opportunity cost.
Besides, it will help creditors access credit worthiness of SMEs by reviewing their transactions and reduce credit default risk. In addition, it will help creditors and suppliers to access a larger market. The paper recommends development of an application and an online system tailored to SMEs needs, creditors and suppliers in order to harness full benefits of technological integration.

**Keywords:** Small and Medium Enterprises, Technological Integration, Financial Performance, Creditors, Suppliers.

### Introduction and Background

Access to finance is one of the most significant challenges that SMEs face during their establishment, growth, and survival especially in emerging economies. According to a research study conducted by ADB bank on OECD countries access to finances is one of the longest hurdles that SMEs experiences (OECD, 2017). SMEs in Sweden—one of the most vibrant global economy with efficient public administration SMEs have a good access to finance even though finding customers is the major challenge-70% of SMEs accessed finance in 2014 while in Europe only 15% of SMEs failed to access Finances (Schwab, 2014). Low interest rates and good credit terms are responsible for this large number of SMEs accessing credit. In United States, SMEs make up 99% of the total firms and employ 50 percent of private sector employees (Lugaresi, 2015). Their access to Credit has remained high due to improved credit terms, sprung of online lending platforms, crowd funding and Angel investment. In South Africa, SMEs access to bank credit requires sufficient collateral and acceptable credit histories (Otchere, Senbet & Simbanegavi, 2017). This Indicates that access to credit is a global concern. Kenya being an emerging economy exhibits a financial system that strives to minimize risk while maximizing the returns (Tissot & Gadanecz, 2018). This is similar to Chile, Colombia and Serbia. SMEs operate in a system characterized by high business risk due to lack of perfect information about future consumer trends (OECD, 2012). The financial providers and SMEs operate in a “counter current” like chain whereby, the former aims at maximizing benefits and at the same time minimizing default risk while the latter (SMEs) sources credit from the cheapest provider at any given level of risk. The ability to secure credit is affected by the failure of SMEs to adopt international financial reporting standards and keeping of financial records mainly due to lack of financial literacy (OECD, 2012). The financial providers evaluate the financial records and business transactions when determining credit worthiness of SMEs.

### Statement of the Problem

Despite the immense contribution of SMEs to the economy, the sector continues to experience multiple constraints that limit its ability to grow. The government and non-governmental institutions have braced up for the challenge and through various strategies are helping the SMEs to access finances. Despite this attempt, Access to finances remains a major problem that is being faced by SMEs and majority of these enterprises have not accessed credit (Kauffmann, 2005). This is due to inability of SMEs to raise collaterals that are required by the financial institutions (Njue & Mbogo, 2017). In order to address this gap, this paper evaluates how technological integration can increase performance of SMEs and enable them to access credit. There is scanty
information on how technology can be used to enable the SMEs access credit. For instance, development of a technological platform that links together financiers, suppliers and SMEs in retail sector. The platform stores all the historical data between suppliers and SMEs and helps the financial providers to monitor the operations of the SMEs.

**Research Objectives**

The study was guided by the following two objectives:

1. To evaluate how technological integration increases performance of SMEs
2. To examine how technological integration can increase ability of SMEs to access credit.

**Theoretical Review**

Trade-off theory and resource based theory have been used to explain the study. Trade-off theory is a financial theory based on capital structure which states that business balances cost and benefits before determining how much equity or debt will be acquired to finance business operations (Harris & Raviv, 1991). It is based on establishing a balance between tax savings of debt and dead weight costs of bankruptcy. This theory posits that by financing firms using debts is advantageous because of the tax benefit associated with debt finance. Nonetheless, debt financing exposes the business to various forms of financial and non-financial. Financial distress consists of bankruptcy while non-financial distress consists of costs that are related to bankruptcy such as stockholder infighting and staff leaving. According to Myers & Majluf (1984) firms following trade-off theory set a debt-to-value ratio target and moves gradually towards the target. This target is determined by balancing shields against costs of bankruptcy. Debt financing among SMEs vary depending on their profitability. Profitable SMEs with tangible asset accesses credit as they have collaterals for debt. Pecking order theory is an alternative to the tradeoff theory. This theory postulates that there exists asymmetry information between management and the outside investors. This asymmetry emanates from the ability of management to access information that is not in disposal of the investors. Myers & Majluf (1984) observed that firms that are successful in terms of consistent and high profit rarely use debt financing. Lastly is the resource based theory that emphasizes on the efficient and innovative utilization of resources. This theory explains how a firm sustains its competitive advantage internally. The logical explanation of this theory clarifies the causal relationship that exists among production capability, firm resources and performance. She claimed that firms can improve the bundle of resources that it controls. Besides, firms exhibit heterogeneous properties if they are in the same industry. The competitive advantage of the company is derived from the firm’s ability to exploit and assemble an appropriate combination of resources. These resources can be intangible or tangible and represent firms input in process of production such as equipment, capital, patents and skills of individual employees. The setoff available resources tend to become larger as company’s competitive effectiveness and capabilities increase.

**Technology and Performance of SMEs in Kenya**

The Kenyan government is exploring myriad ways to enhance performance of SMEs by leveraging on ICT through e-commerce. Realization of the economic growth cannot be done without integration of SMEs and technology (Gure & Karugu, 2018). Access to technology and finance remains a major issue of concern. According to a study conducted by Gathogo & Ragui (2013) on the effects of capital and Technology on the
performance of SMEs in the manufacturing sector in Kenya in selected firms in Thika Municipality only 12% and 15% of the respondents integrated technology in their operations. 46.5% obtained from family and friends while 47.5% from personal savings. This shows that only a few SMEs have an access to credit from depository institutions which is the main source of credit. Over the years, Kenya has witnessed gradual increase in the rate of growth in information technology. This has earned the country a global recognition (Niebel, 2018). Growth in technology is owed to innumerable factors which are overlapping. The main source of inspiration is Kenya’s policy framework which is the main driver of the shift (Ayo & Mbarika, 2017). These policies are diverse and focus on development of applications by leveraging of mobile platforms, development of ICT infrastructure, and creation of local content. Over time, the number of Kenyans accessing internet has grown amounting to 77.8% internet penetration after a total population of 37.7 million accessed internet out of the total population of 48.5 million people. This means that 77.8% of the total population has an access to internet (Odero & Mutula, 2017). In Africa, Kenya ranks second after Nigeria in internet penetration and 90% penetration of smartphone. This has brought about rise in e-commerce and made it possible for consumers and business to transact online. The e-commerce appears as a blooming business but in real sense it is at its embryonic stage especially for owners of business who try to sell their products electronically via different platforms. According to a study conducted by Migiro (2006) while evaluating the diffusion of ICTs and E-commerce adoption in manufacturing SMEs in Kenya, 6.6% of SMEs possess and use computers and only 2% of these that use computer with internet access. He also established that SMEs perception on the importance of E-commerce and Internet was mixed. 27% of the respondent said that internet is very important, 61% said that it is important while 6% said it is somewhat important. 70.2% of the respondents believed that internet will be very important in future, 11% said it is important, and 14% said it is somewhat important in future. 1.6% of the respondents were indifferent while 3.6% said it was not important at all. He further noted that convenience and efficiency, necessity to access business information, keeping up with current industrial trend, and attainment of customer satisfaction are major key drivers of doing business via internet.

There was a great expectation since 2014 that mobile transactions and ecommerce would rise by 50% (Waithaka & Mnkandla, 2017). Globally, the consumer base has grown to 580 million users making ecommerce an important tool for businesses (Laudon & Traver, 2017). Kenya has witnessed development of online platforms such as Shop soko, Jumia and OLX. These sites have mobile apps that makes it easier for consumers to access products and place their purchase online. It also makes it easy for sellers to meet their consumers (Laudon & Traver, 2017). Optimization of mobile ecommerce, purchasing and registration has been a key challenge in e-commerce and therefore development of mobile applications is a major stride made by businesses. A study conducted by Adeya (2005) among artisans in remote areas of North Africa and Middle East established that use of ecommerce allowed knowledge to producers and enabled them access high income markets and market their products. In addition, adoption of technology among SMEs would enable them to compete at a global scale. Despite the advantages that are associated with technological integration, there has been a debate on whether adoption of technology can improve performance of SMEs. According to a study done by Ongori (2009) on the role of information communication technologies
adoption in SMEs. 72% of SMEs adopt technology because of competition, 69% because of information intensity, 68% because of access into international market, 65% because of structural sophistication of the business and 60% quick service delivery to suppliers/customers. The study also observed that 70% of the respondents perceived cost as a major barrier to adoption of ICT by SMEs, lack of external skills and internal skills accounted for 64% and lastly 63% of SMEs felt that the cost of ICT was too high. Complimentary investments in skills, innovation and organization are a major requirement in the use of and investment in ICT. Martin & Namusonge (2014) while evaluating the influence of innovation on Small and Medium enterprises growth in Nakuru County established that 63% of the respondents agreed that firm’s realizes higher profit from adoption and investment in technology. 36% of the respondents did not believe that business can achieve higher profit by investing in technology. 43% of the SMEs that had adopted and integrated technology in their operations recorded higher profits compared to the SMEs that had not adopted technology. He also established a perceived link between technological integration and growth of business. SMEs that integrated technology had realized increase in customer base, sales and overall profit. Little scholarly work has been done on this area. Even if major studies point out that the SMEs are able to access a larger market, implementation and operation of online business by SMEs may be difficult due to high cost for organization charges and training. Besides, greater cost is incurred in investing in software and hardware solutions (Niebel, 2018). A study conducted in OECD countries revealed a contrary observation. According to this study, benefits derived from ICT are more significant compared to cost. ICT integration improved performance of the firm by expanding range of production, improved firm performance, increased SMEs market share, better response to customer demands, customized products among others (OECD, 2016).

**Technology and Credit Access among SMEs**

Conventional financial constraints that face SMEs are being addressed through the use of conventional SME finance policies (Mutula & Brakel, 2006). The incorporation of technology has transformed the SMEs businesses by mitigating risks, accessing market opportunities, investment in new technologies and meeting supply orders (Usman, Thorsten, Christine & Simon, 2015). Mitigating these conventional challenges sometimes presents new risks and challenges to the business. Use of conventional policies may result to wastage of resources and failure to address emerging issues. According to a study conducted by Gathogo & Ragui (2013) on the effects of capital and Technology on the performance of SMEs in the manufacturing sector in Kenya in selected firms in Thika Municipality established that technology influenced effectiveness of SMEs, their performance and overall cost of operations. 55.7% of the SMEs performance was affected by technology to a very great extent, 27% to a great extent and 17.1% of the respondents indicated that technology had no effect on their performance. The cost and risk of financial services tailored to SMEs sometimes is high due to information asymmetry (Berger & Udell, 2006). This reduces access to finance and increases the cost of financial services. Information asymmetry can be addressed technologically which can reduce the cost of financial transactions (Morro & Fink, 2013). The credit worthiness of enterprises can be accessed through the analysis of alternative data sets such as transactional data and cell phone histories (Usman, Thorsten, Christine & Simon, 2015). Cignifi Company operating in Ghana, Brazil, Mexico and
US uses airtime usage to determine credit score of the users (Gabor & Brooks, 2017). This kind of applications can open more doors to SMEs and help them access finances without collaterals. Borrower credit worthiness can be accessed through the use of internet by expanding the digital footprints. In addition it can be used to prevent identity fraud and spot such cases (Usman, Thorsten, Christine & Simon, 2015). Electrification of transactions such as contracts, invoices, and payments avails important data that enable the SMEs to access financial services as firms are able to determine their credit worthiness. Chile Compra is another example of a platform that has opened up ability of SMEs to access public sector procurement (Gabor & Brooks, 2017). Factoring transactions and supply chain with SMEs can be facilitated through signature laws and electronic security.

**Methodology**

This study is descriptive and in order to achieve the objectives of the research a desk research that employed secondary data was used. The study reviewed government publications, relevant books, studies, journals, dissertations and websites to obtain information on technological integration and contribution of technology to financial access and performance of SMEs. The information obtained was reviewed to draw meaningful conclusions and recommendations.

**Findings and Conclusions**

**Technology Integration and Performance of SMEs in Kenya**

Review of various literatures indicates myriad of benefits that the business or SMEs gain as they progress from simple to enabling technologies. The use of technology increases visibility of business enterprises, avail information to the SMEs, enable them overcome the traditional barriers of trade and facilitate financial transactions. The flexibility of business is one of the key area that is influenced by technology. The performance of SMEs that have adopted technology in the market is better as they are able to differentiate their services and products (Gathogo & Ragui, 2013). The effect of technology on performance is positive both directly and indirectly (Ollo-Lopez and Aramendia-Muneta, 2012). This is determined by the sectors and extent at which it can support business sustainability. The use of technological platforms such as e-commerce can greatly cut the cost of physical transportation that businesses incur while advertising, banking and buying goods and services. It is worth noting that these benefits are experienced after the business adopts an appropriate technology. The impact of technology on broad terms can be classified into four. That is impact in performance, growth, expansion and development of new product. Performance is one of the major dimensions that is affected by technology. The aspects of performance that are directly attributed to technology include competitiveness, effectiveness and efficiency, innovative business and other intangible benefits. Nevertheless, this performance as pointed out by Santos and Brito (2012) can be defined in two ways; financial performance and strategic performance. These dimensions can be represented by specific performance scopes such as growth, profitability, market value, employee satisfaction, customer satisfaction, social performance and environmental performance. Customer satisfaction, environmental performance, employee’s satisfaction and social performance is related to strategic performance while market value, growth and profitability is related to financial performance. There are various indicators of this performance- strategic and financial performance. In terms of profitability, the SMEs will register an increase in net income, return on investment, return on assets, return on
equity and general addition in economic value. In terms of market value, the SMEs will register increment in growth of assets, market share, number of employees and net income (Santos & Brito, 2012). Employees satisfaction will be indicated by investment in training and development of employees, good organization climate, launch of new products and services and lastly reduced employee turnover. It is worth noting that some of these benefits may not be experienced instantly but will be experienced in long run. In terms of customer satisfaction, the SMEs will be characterized by provision of a large number of services and products, reduction in the number of customer complaints, retention of new customer, increased in the retention rate, general satisfaction of customers and introduction of new services and products. Environmentally, the SMEs will be able to use materials that are recyclable, reduction in re-usages and recycling, and launching projects that recover the environment. This is predominantly improvement in corporate social responsibility performance. Socially, the SMEs will be able to increase the number of social and cultural projects, employ minorities, reduce the number of lawsuits, and engage regulatory and customer agencies. These elements are dependent on one another. Adoption of technology and integration of SMEs activities will have an impact to other parties such as suppliers, financiers and the general economy. Krifa-Schneider & Matei (2010) noted that adoption of technology can contribute to increase in gross domestic product. The overall effect is however subject to the type of technology adopted and the degree in which the small businesses have adopted them. Improvement in operational performance and communication is positively related to better performance (Bayo-Moriones, Billion & Lera-Lopez, 2013).

Technology Integration and Credit Access among SMEs

Analysis of various literatures indicates that despite the contribution of SMEs to the growth in economy, access to finance is one of the greatest challenges and hindrance that they encounter. In case they access finances, they are often charged high rate of interests, face stringent collateral requirements and shorter maturity. This is because SMEs have been beheld as expensive to work with and high risk businesses. There are innumerable ins and outs provided by research as the chief origin of justification why SMEs have struggled in obtaining capital. These include poor record keeping, over reliance on internal financing, high risk and turnover, poor or weak management, lack of track records, lack of assets to use as collateral, lack of connections in financial system, high cost of obtaining loans that fit their needs and poor knowledge of financing options. The lenders are mainly concerned with histories and profiles of the borrowers (Tissot & Gadanecz, 2018). Lack of access to SMEs histories and credit profile is one of the main hindrance that they face as it makes banks reluctant to offer loans due to high risk associated with it. One of the major ways of addressing this constraint is online lending. Technology has enabled seamless transfer of information between different users within a short period of time. Advanced analytics in collaboration with global communication networks have leveraged to address the main common barriers to lending that encounter SMEs. Technological developments in capturing data, analysis of data and reporting can unleash the hidden potential of online lending that can aid in addressing the current existing SMEs financing gap (Usman, Thorsten, Christine & Simon, 2015). The assessment of credit worthiness of SMEs can be done by analyzing first and third party information followed by simplification of online forms and making them accessible online. The credit worthiness of SMEs can be gauged within a short
period of time and the disbursement of funds can be done instantly. The SMEs borrowing position can be used as a major determining factor of repayment schemes which is subject to modification over time. The loans obtainable online can be tailored to meet the needs of SMEs as they typically do not involve large capital reserves. Cash flow problems that SMEs experience over time can consequently be addressed using small working capital loans. A review of traditional loans requirements shows in order to obtain financing; borrowers are required to provide securities. This creates a stumbling block to SMEs as they are unable to provide collaterals. Online loans do not need collateral and this is likely to increase the rate of credit access. Integration of SMEs within a technological platform that captures their transaction data can increase their access to credit. According to world economic forum, increasing the rate of credit access to private sector by 50% is likely to increase the rate of gross domestic product by 2%. This shows the reason why both government and non-governmental institutions should endeavor in developing mechanisms that will enable the SMEs to access credit. There are myriad of benefits associated with increasing SMEs access to credit. They will register increased growth as evidenced by various researches which indicates that increasing funds by 10% to SMEs will result to 14.62% growth in firms experiencing financial constraints and 3.82% to stable firms (Rahaman, 2015). It also increases market competition for corporate lending thus providing economic value to SMEs. Besides, it will also reduce information asymmetry among SMEs which has been a major cause of failure of SMEs to access credit. Lastly, it reduces systematic risk by spreading it across a broader financial ecosystem. Technological integration in Kenya is still at infancy and more should be done to enable SMEs tap benefits that are attributed to SMEs.

**Conclusion**

Based on the above analysis, this paper concludes that technological integration is important as it helps SMEs to improve their profitability and access credit. Besides, it helps in improving their performance, growth, expansion and development of new product. On the basis of profitability, the SMEs will register an increase in net income, return on investment, return on assets, return on equity and general addition in economic value. On the basis of market value, the SMEs will register increment in growth of assets, market share, number of employees and net income. These benefits cut across the business and will be experienced by all the facets of SMEs. Technology integration will also increase the ability of SMEs to access credit. This is important especially in technological developments such as capturing data, analysis of data and reporting which can unleash the hidden potential of online lending. The analyzes of the first and third party information followed by simplification of online forms and making them accessible online will enable the SMEs to access credit tailored to their needs.

**Recommendations**

1. The government should reduce taxes imposed on technological gadgets in order to reduce their market prices hence making them available to SMEs
2. The SMEs should be trained and provided with technological skills which is one of the major hindrance to adoption of technology among them.
3. The depository and lending institutions should tailor their policies to meet the SMEs requirements due to the complexity associated with their operations.
4. Financial literacy should be provided to SMEs on record keeping, financial management and benefits of technology.
5. Technological platform should be developed to link SMEs (buyers) with Suppliers (sellers). Below is a model of “Uwezo App” detailing various pertinent features.

![Diagram of Uwezo App]

The Uwezo App is a technological platform that will bring together the SMEs and Suppliers. It will feature an interactive platform that will allow the SMEs to access Supplier’s information such as goods available, prices, delivery time and terms of payment. The SMEs will place an order via the app and Suppliers will confirm upon receipt of the order and delivery of the products. The transactions will be recorded in a permanent ledger that can be used by banking institution to view the operations and transaction history of the buyers or sellers. Each seller or buyer cannot have a multiple account. The App will be customized to only the retailers (Shop Owners and the Suppliers).

References


Youth Empowerment through Recycling of Textile Products in Kenya.

Kimemia, Millicent¹, Tumuti, Dinah² and Oigo, E Bosibori³

Kirinyaga University, Kenya¹. ²³Kenyatta University, Kenya

Correspondence: mkimemia@kyu.ac.ke

Abstract

Global statistics show that growth of apparel market from 2012 to 2017 is on upward trend. It is thus estimated that apparel market increased by approximately 5.46 percent in 2017 compared to 2016. Fast fashion has thus taken Centre stage
with improved global economic levels. Consequently, millions of metric tons of used clothes and textiles are available annually especially from the developed nations. While the majority of these clothes end up in landfills, a considerable size is exported to markets in developing countries. When the apparels and clothing are worn out, they cause environmental pollution on disposal. Textiles particularly present problems in landfill as synthetic products do not decompose, whilst woolen garments decompose and produce methane, which contributes to global warming. However, recycling of these apparels and textiles can be used not only to solve the problems of environmental pollution, but also to provide an economic opportunity for millions of jobless youths in the developing world as well as clearing and forwarding from our houses. In Kenya, recycling industry is developing fast. This study sought to establish ways through which the youth in Kenya could take advantage of this large resource to create employment, the source of used clothes used as raw materials in the recycling industry, items made from recycled clothes and finally the movement of these products in the market. Results showed that the recycling industry in Kenya is dominated by handcrafts, skills men and women and that they are mainly done on small scale. Most of the enterprises sampled in this study were family owned and employed less than 20 people. Items produced included Ciondos (local Kenyan baskets), dusters, moppers, pupils’ school bags and floor mats. These products are sold in local supermarkets and open-air markets by vendors around the cities and major towns in the Kenya. Prices depended on quality, size of items and target market. Most enterprises reported making between Ksh. 20,000 and Ksh. 40,000 monthly depending on production. It is recommended that the government through the ministry of youth should empower entrepreneurs through training on new technology, financing and provision of tools and equipment to support recycling industry.

**Keywords:** Textile Products, Textile Recycling, Youth Employment, Empowerment     Postconsumer Waste.

**Introduction and Study Background**

Banerjee, Tripathi and Sahay (2016) estimated that in 2017, the apparel market increased by approximately 5.46 percent compared to 2016. In 2009, Cororaton & Orden (2008) observed that the total textile fibre demand increased by 0.4% to 65.1 million tons while in 2010, total textile fibre demand increased by 4.6 million tons to 69.7 million tons. This new record consumption level surpassed the previous record in 2007 by 2.0 million tons. In line with this demand, Doeringer & Crean (2006) asserts that fast fashion has taken centre stage with improved global economic levels. Consequently, millions of metric tons of used clothes and textiles are available annually especially from the developed nations (Haggblade, 1990; Hawley, 2006; Claudio, 2007). According to Hawley (2006), the apposition of a throw-away society with the realization that natural resources are threatened is a vivid illustration of the confounding problem of contemporary lifestyle.
There is thus need to focus on the problems associated with fast fashion and contemporary lifestyle where a lot of clothes are disposed after a short while. While the majority of these clothes end up in landfills, a considerable size is exported to markets in developing countries (Brooks & Simon, 2012). When the apparels and clothing are worn out, Claudio (2007) notes that they cause environmental pollution from whichever methods are used to dispose them. However, recycling of the apparels and textiles can be used not only to solve the problems of environmental pollution, but also to provide an economic opportunity for millions of jobless youths in the developing world. Data from the International Trade Commission indicate that between 1989 and 2003, American exports of used clothing more than tripled, to nearly 7 billion pounds per year. According to a new report from the Council for Textile Recycling (CTR), (Goudeau, 2014) the average American throws away 70 pounds of clothing every year collectively approximated to 3.8 billion pounds of waste.

Sustainable consumption as an aspect of consumer behaviour, involves pre-purchase, purchase and post-purchase components. The disposal component is a relatively new area of research. Essentially this final component of consumer behaviour is about whether clothing is re-used, recycled or simply discarded or destroyed. Textile recycling originated in the West Riding of Yorkshire about 200 years ago when the “rag and bone” men went door-to-door to collect rags, metal and any other household articles. Today, many consumers dispose of their clothing to charity shops, where donations are sorted and are then either sold, sent to developing countries where they are re-used or sent to a recycling plant and made into fillings or cleaning rags. Linen, cotton and viscose can be made into paper pulp and wool can be recovered and felted or re-spun. Textile reclamation businesses recycle both natural and man-made fibres and 50 per cent of all the textiles we throw away are recyclable. The advantage of re-using and recycling has both environmental and economic benefits. Textiles present particular problems in landfill as synthetic products do not decompose, whilst woollen garments decompose and produce methane, which contributes to global warming. In the UK, Nathan's Wastesavers collects goods from charity shops and more than 1,000 textile banks; they sort and process more than 350,000 kg of material every week of which 98 per cent is reused or recycled.

Birtwistle and Moore (2007) investigated how consumers dispose of fashion products and how possible it was to increase sustainable consumption of textiles. The research identified the influences in increased purchase behaviour and the tendency to keep clothing for a shorter time. Using focus groups and key informant interviews, the study identified consumers' lack of understanding of how this behaviour affected the environment.

The process of apparel recycling impacts many entities and contributes significantly, in a broader sense, to the social responsibility of contemporary culture (Hawley, 2009). By recycling, Hawley, (2006) observes that companies can realize larger profits because they avoid charges associated with dumping in
landfills while at the same time contributing to goodwill associated with environmentalism. However, in developing world where most of the used apparel are destined, the idea of apparel cycling is relatively new and hence technology associated with this process is still little known and used despite the fact that textiles are nearly 100% recyclable, and hence nothing in the textile and apparel industry ought to be wasted. This study sought to establish dynamics of apparel recycling in Nairobi Kenya as a means of addressing youth unemployment in the country. This paper provides a systems perspective that depicts the textiles recycling processes and products in Nairobi. The study puts in perspective the different levels within the human system that are concerned with apparel recycling. This study provides a synthesis of how systems theory provides a useful tool to project future trends for the textile and apparel recycling process particularly in developing world.

Theory
This study was guided by the Systems theory spearheaded by Gregory Bateson, Murray Bowen, Anatol Rapoport, W. Ross Ashby, and Margaret Mead. One of the main perspectives of systems theory is viewing an individual or group as its own ecosystem with many moving parts that affect each other. Systems theory provides a useful theoretical framework for understanding the textile recycling process. The systemic view helps in explaining the connectedness, interdependencies, feedback processes, and integration of the textile recycling system. Social systems theory offers a unified framework for the analysis of social reality at a higher level. The theory allows for the understanding of individual behavior in the context of the environment and situational factors. Rather than simply acknowledging the importance of environmental factors, social systems theory makes it clear that many things, such as economics, legal/political constraints, technological advancement, cultural perspectives, competitive environment, and infrastructure, must be considered. In the case of individual behavior of textile recycling, environmental factors such as local solid waste policies, convenience of local charity groups and local attitudes toward recycling can all effect individual recycling behavior. In this study, social systems mean systems constituted mainly by human beings, ranging from the micro unit such as individuals, families, and friends, to macro groups such as family owned companies. The interrelationship between human behaviors and decisions, environmental concerns, policies, technology, infrastructure, and competition were considered.

Research Methods
This study was carried out in Nairobi County - Kenya. The study targeted individuals, families, groups and companies involved in textile recycling. Descriptive survey research design was used since it helped in collecting wide-ranging, in-depth data and thorough examination of the dynamics of textile recycling as a means of addressing youth unemployment in Kenya (Bogdan &
Using five (5) companies, ten (10) groups and fifty (50) individuals involved in textile recycling, this study employed an interview guide in collecting data from the respondents. Two people in the top management – the company executive officer and Human resource manager were each purposively sampled from the five companies and groups making 30 respondents. The total sample was 80 respondents. The companies, groups and the individuals were randomly selected across the county. Qualitatively Data collected was analyzed according to the themes in the objectives of the study. Quantitative data was analyzed descriptively using frequencies, percentages. Data was presented in charts and tables.

Results
This section presents the data analysis, presentation and interpretation. This study sought to establish the source of used clothes that are used as raw materials, items made from recycled clothes and finally the market dynamics of the products.

Demographic details of the respondents.
The demographic details of the respondents were determined and presented in Table 1.0.

Table 1.0: Demographic Details of the respondents

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 25 years</td>
<td>17</td>
<td>21.3</td>
</tr>
<tr>
<td>25 - 35 years</td>
<td>24</td>
<td>30.0</td>
</tr>
<tr>
<td>35 - 45 years</td>
<td>32</td>
<td>40.0</td>
</tr>
<tr>
<td>above 45 years</td>
<td>7</td>
<td>8.8</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>43</td>
<td>53.8</td>
</tr>
<tr>
<td>Female</td>
<td>37</td>
<td>46.3</td>
</tr>
<tr>
<td>Highest Education level attained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>8</td>
<td>10.0</td>
</tr>
<tr>
<td>Secondary</td>
<td>34</td>
<td>42.5</td>
</tr>
<tr>
<td>College</td>
<td>38</td>
<td>47.5</td>
</tr>
<tr>
<td>Type of enterprise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>50</td>
<td>62.5</td>
</tr>
<tr>
<td>Groups</td>
<td>20</td>
<td>25.0</td>
</tr>
<tr>
<td>Companies</td>
<td>10</td>
<td>12.5</td>
</tr>
</tbody>
</table>

Data in Table 1.0 shows that the majority (40%) of the respondents were between 35 - 45 years old, 30% were between 25 - 35 years old while only 8.8% of the respondents were above 45 years. The study also revealed that 21.3% of the respondents were below 25 years of age. The study also showed that there were more male (53.8%) than females were who involved in the textile recycling industry. Finally, the study showed that 38% of the respondents had attained college education while only 10% of them had a primary school certificate. It was determined that (62.5%) of the respondents were involved in individual enterprises, 20 (25.0%) were from groups while 10 (12.5%) were from companies involved in fabric recycling.

Source of Raw Materials
This study sought to establish the source of the used clothes that were used as raw materials by the respondents. Table 1.0 shows the results.

Table 1.0: Sources of waste clothes used as raw materials in the recycling industries.

<table>
<thead>
<tr>
<th>Source</th>
<th>Respondent type</th>
<th>Individual Frequency</th>
<th>Percent</th>
<th>Total Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importation</td>
<td>Companies</td>
<td>9</td>
<td>50.0</td>
<td>18</td>
<td>22.5</td>
</tr>
<tr>
<td></td>
<td>Groups</td>
<td>8</td>
<td>44.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individuals</td>
<td>1</td>
<td>5.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second hand clothes vendors</td>
<td>Companies</td>
<td>10</td>
<td>13.9</td>
<td>72</td>
<td>90.0</td>
</tr>
<tr>
<td></td>
<td>Groups</td>
<td>20</td>
<td>27.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individuals</td>
<td>42</td>
<td>58.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Door-to-door collection of waste textiles</td>
<td>Companies</td>
<td>2</td>
<td>4.8</td>
<td>42</td>
<td>52.5</td>
</tr>
<tr>
<td></td>
<td>Groups</td>
<td>6</td>
<td>14.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individuals</td>
<td>34</td>
<td>81.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From dump sites</td>
<td>Companies</td>
<td>0</td>
<td>0.0</td>
<td>11</td>
<td>13.8</td>
</tr>
<tr>
<td></td>
<td>Groups</td>
<td>2</td>
<td>18.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individuals</td>
<td>9</td>
<td>81.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charity shops</td>
<td>Companies</td>
<td>2</td>
<td>33.3</td>
<td>6</td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td>Groups</td>
<td>4</td>
<td>66.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individuals</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Multiple responses allowed (n = 80)

The results in Table 1.0 shows that 90% of the textile recyclers obtained their used clothes from second hand clothes dealers, 52.5% carried out a door-to-door collection of used clothes that were no longer needed while only 22.5% of them imported second hand clothes to be used as raw materials in their recycling industries. The study also showed that 13.8% of the recyclers collected the waste clothes from dump sites across the cities and major town where they were located while 7.5% obtained from charity shops.

Affordability of the raw materials

The sought to establish if the sources of the waste textiles obtained were affordable. The responses are presented in Table 2.0.

Table 2.0: Affordability of second hand clothes used as raw materials in industries as perceived by the respondents

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>Inexpensive freq</th>
<th>Inexpensive Percent</th>
<th>Expensive freq</th>
<th>Expensive Percent</th>
<th>Very expensive freq</th>
<th>Very expensive Percent</th>
<th>Total freq</th>
<th>Total Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>freq</td>
<td>t</td>
<td>freq</td>
<td>t</td>
<td>freq</td>
<td>t</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Companies</td>
<td>8</td>
<td>80.0</td>
<td>2</td>
<td>20.0</td>
<td>0</td>
<td>0.0</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Groups</td>
<td>10</td>
<td>50.0</td>
<td>6</td>
<td>30.0</td>
<td>4</td>
<td>20.0</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Individuals</td>
<td>10</td>
<td>20.0</td>
<td>32</td>
<td>64.0</td>
<td>8</td>
<td>16.0</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

The study showed that most (80%) companies perceived second hand clothes used as raw materials as inexpensive while 64% of the individual recyclers felt
that the clothes were expensive. The study also indicate that half of the groups perceived the materials as inexpensive.

**Items Made Form the Recycled Textiles**

The study established the items made from the recycled clothes. The results are shown in Table 3.0

**Table 3.0: Items from recycled textiles**

<table>
<thead>
<tr>
<th>Items</th>
<th>Type of industry</th>
<th>Freq</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ciondos</td>
<td>Individual, groups</td>
<td>41</td>
<td>51.3</td>
</tr>
<tr>
<td>Floor mat</td>
<td>Groups, companies</td>
<td>32</td>
<td>40.0</td>
</tr>
<tr>
<td>Dusters</td>
<td>Companies</td>
<td>46</td>
<td>57.5</td>
</tr>
<tr>
<td>Jewelry box lining</td>
<td>Companies</td>
<td>29</td>
<td>36.3</td>
</tr>
<tr>
<td>Car seat stuffing</td>
<td>Groups, companies</td>
<td>9</td>
<td>11.3</td>
</tr>
<tr>
<td>Automobile insulation</td>
<td>Groups, companies</td>
<td>9</td>
<td>11.3</td>
</tr>
<tr>
<td>Wiping clothes</td>
<td>Individuals, Groups</td>
<td>63</td>
<td>78.8</td>
</tr>
<tr>
<td>Paving materials</td>
<td>Companies</td>
<td>38</td>
<td>47.5</td>
</tr>
<tr>
<td>Carpet padding</td>
<td>Companies</td>
<td>16</td>
<td>20.0</td>
</tr>
<tr>
<td>Baseball and softball filing</td>
<td>Companies</td>
<td>21</td>
<td>26.3</td>
</tr>
<tr>
<td>School bags</td>
<td>Individuals, groups, companies</td>
<td>76</td>
<td>95.0</td>
</tr>
<tr>
<td>Industry conveyor belts</td>
<td>Companies</td>
<td>8</td>
<td>10.0</td>
</tr>
<tr>
<td>Sewing machine belts</td>
<td>Companies</td>
<td>8</td>
<td>10.0</td>
</tr>
</tbody>
</table>

*Multiple responses allowed (n = 80)*

The study showed that 41(51.3%) of the respondents made Ciondos while almost 80% made wiping clothes from second hand apparel. Only 11.3% of the respondents indicated that they produced car seats and automobile insulation while 10% made industry conveyor belts and sewing machine belts. More than half of the respondents made dusters.

**Market Dynamics**

The study sought to establish the market dynamics of the items made from recycled textiles. The study investigated the market for the items, income from the sales of the items and the perception of the respondents on the influence of the industry on the livelihoods.

a). **Market for the produced Items**

The study established the market for the items produced from the recycled textiles. The results were presented in figure 1.0 below.
The results showed that the majority (47%) of the respondents sold the items individually to customers while 28% sold to the supermarkets. The study also revealed that 18% of the items were sold to wholesalers while 7% was exported to other countries in the region.

**Income from sales of the items**

This study sought to establish the level of income from the sale of recycled items. The levels were given as monthly income as: Below Ksh. 20 000; between 20 000 and 60 000; Between 60 000 and 100 000 and above 100 000. The results are presented in figure 1.2. The results showed that most (42%) of the enterprises made between Ksh. 20 000 and 60 000 while 37% of the enterprises made between 60 000 and 100 000 shillings monthly from the sales of the goods manufactures from the old fabrics.
6. Discussions

Most textile recyclers obtained their raw materials from second hand clothes dealers and door-to-door collection of used clothes from the public. This shows that most of the dealers in the recycling industry were not able to import used clothes for their recycling activities. This is an indication that most of the dealers were economically low. However, drawing from the local sources, 80% of the companies perceived raw materials as inexpensive. Most of the those who viewed raw materials as expensive were individuals and groups. Wiping clothes were the most made items by the respondents followed by dusters (57.5%) and ciondos (51.3%). On the contrary fewer (11.3%) of the respondents produced items of higher value like car seats, automobile insulation, industry conveyor belts and sewing machine belts. This shows that most respondents did not have equipment that could allow them make advanced products.

Nearly half of the respondents sold the items individually to customers while only few sold to supermarkets and wholesalers. This reveals that most of the enterprises produced less products that did not require bulky marketing and sells. The study also revealed that 42% of the enterprises made between Ksh. 20 000 and 60 000 while 37% of the enterprises made between 60 000 and 100 000 shillings monthly from the sales of the goods manufactures from the old fabrics.

Conclusion and Recommendations

Local sellers of second hand clothes form a major source of raw materials for recycling industry in Kenya. The chain of getting the raw materials from the vendors and other local sources is generally expensive to most of individual entrepreneurs and groups. However, companies with higher returns got their raw materials from the imports from developed markets. Most of the items produced were those that were made using local technology and hence of low
value and quantity. The study recommends that the government through the ministry of youth should empower entrepreneurs in the fabric recycling industry through training on new technology in recycling and providing finances for tools and equipment. The government may also train the entrepreneurs on the need for forming and joining saccos that would enable them in accessing finances.

References


Competitive Strategies Adopted by Private Universities in Kenya.

Ogwe, Steve Lucky¹, Thomas, Joseph² and Sitinei, Edwin³
¹,²,³Pioneer International University, Kenya
Correspondence: stephen.ogwe@piu.ac.ke

Abstract
Competitive strategy has been concerned with what an organization have been doing in order to gain a sustainable competitive advantage. The stiff competition among the public and private universities, this paper sought to determine the influence of competitive strategies adopted by Private University in Kenya. The study, the researcher sought to determine the various competitive strategies that Private universities in Kenya adopt in order to gain a competitive advantage over other players in the same industry. The research paper used a case study approach to give an in-depth understanding of the competitive strategies on Private University in Kenya. The study used both primary and secondary data where primary data was collected using an interview guide and secondary data was collected from audited financial reports and other publications at Private University in Kenya. Content analysis was used to analyze this data collected from the interviewees. The study concluded that Private Universities in Kenya have adopted various competitive strategies to remain competitive in the market. These were: product(course) differentiation, course cost leadership, customer(students)focus, use of internet to market, offering e-learning, online registration and release of results, strategic alliances and partnerships, horizontal and vertical integration such as acquiring other colleges to ease competition, product (curriculum and course reviews) development such as introduction of new courses, concentrated growth, diversification, market development, and vertical integration.
The study recommends that Private Universities should put in place competitive strategic responses to help them gain a competitive advantage over their competitors. Private university should focus on strategies that benefit their organization through increased profitability at the least cost possible. Through the employment of differentiation strategies, Private Universities should find strengths that enable them to broaden their scope within the Private Universities market and identify a position for themselves. Through student and course focus strategy, private university should expand into new markets and identify course products that can help private university compete within the established markets.

Keywords: Diversification, Course, Focus, Competitive, Strategy, Private University, Product development.

Introduction and Study Background.

Over the past years, public universities in Kenya have faced many challenges.
Among these challenges are: enrollment beyond their capacity to plan and finance, fiscal challenges beyond their control, decline in quality beyond their anticipation, and weak management practices. To help solve some of these problems, private universities have increasingly emerged and gained ground in the country as an alternative to higher education provision (Oketch, 2003).

As the number of private universities continue to grow, so does the competition for market survival intensifies. Competition for survival has been the guiding force for existence and it has been associated with the creation of wealth. With the development and progress of civilization, competition has become more complex. The firms are engaged in various activities to minimize their costs and maximize their profits. Thus, the core competencies of the organization are reflected in their commercial activities and the most competent is the winner in grabbing a large chunk of market share and leads the industry (Poddar and Gadhaw, 2007).

In this study, the researcher sought to determine the various competitive strategies that Private universities in Kenya adopt in order to gain a competitive advantage over other players in the same industry. In their study, Poddar & Gadhaw (2007) defines competitive advantage as the advantage that one firm has, relative to competing firms in the industry. It is the advantage a firm has over others, which helps the firm to fight out
Others in the race and trap the consumers. The competitive advantage can be in any form or manner, which helps the firm in increasing and retaining the market share. In simple terms then, competitive advantage is an advantage over competitors gained by offering consumers greater value, either by means of lower prices or by providing greater benefits and services that justifies higher prices.

Competitive strategy was the search for a favorable competitive position in an industry, the fundamental arena in which competition occurs (Porter, 1985). Competitive strategy aims to establish a profitable and sustainable position against the forces that determine industry competition. Johnson, Whittington and Scholes (2011) notes that competitive strategy is concerned with how a business achieves a competitive advantage in its domain of activities. Porter (1996) argues that strategy is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of value. Competitive strategy is concerned with how a company can gain a competing advantage through a distinctive way of competing. Having a competitive advantage is necessary for a firm to compete but what is more important is whether the competitive advantage is sustainable (Kimando, Njogu, & Sakwa, 2012)

**Research Problem**

As competition intensifies in the education sector, players are forced to craft superior strategies that will help them gain a competitive edge against their competitors. A competitive strategy was aimed at establishing a profitable and sustainable position against the forces that determine industry competition (Porter, 1980).

Previous studies have focused on competitive strategies adopted by universities in Kenya (Kitoto, 2005). The researcher explored the competitive strategies adopted by Kenyan Universities and the challenges experienced in implementing these strategies. Mutua (2004), focused on the responses to changing environment by the University of Nairobi. The researcher found out that the university faces many challenges but the greatest of them all is competition from other institutions. Kagwira (2004), looked at the extent to which Kenyan Universities practice education marketing and the study revealed that it is practiced to different extent. The study explored the various strategies but it did not address how these strategies help the institutions achieve competitive advantage.

In the above studies, it is evident that the researchers have not really narrowed down to focus on the competitive strategies adopted by private universities despite their rapid growth in the past few years. In this study, the researcher concentrated on private universities and the competitive strategies they have adopted in order to survive in this era of great competition.

**Specific objectives:**

- To examine how course differentiation affects private universities competitive strategies
- To investigate how course cost leadership affect private universities
competitive strategies
- To analyze how students centered focus affect private universities competitive strategies
- To examine how private universities strategic alliances, affect their competition
- To analyze how horizontal & vertical integration affect private universities competitive strategies.

Concept of strategy

Strategic management is the art, science and craft of formulating, implementing and evaluating cross-functional decisions that will enable an organization to achieve its long-term objectives (David, 1989). It is the process of specifying the organization's mission, vision and objectives, developing policies and plans, often in terms of projects and programs, which are designed to achieve these objectives and then allocating resources to implement the policies and plans, projects and programs.

Conceptual Framework

**Figure 1.0**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Moderate Variables</th>
<th>dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course differentiation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course cost leadership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Centered &amp; Focus</td>
<td>Horizontal and vertical integrations</td>
<td>Private Universities Competitive strategies</td>
</tr>
</tbody>
</table>

Theoretical Review

This study was guided by the resource based view theory to determinants of competitive advantage among private Universities in Kenya. The resource-based view (RBV), suggests that competitiveness can be achieved by innovatively delivering superior value to customers. The extant literature focuses on the strategic use of resources by a firm for developing a sustained competitive advantage (Barney, 1991). International business theorists also explain the success and failures of firms across boundaries by considering the competitiveness of their subsidiaries or local alliances in emerging market. Local knowledge provided by a subsidiary or local alliance becomes an important resource for conceptualizing value
as per the local requirements.

**Resource Based Theory**

Resources are inputs into a firm's production process; can be classified into three categories as: physical capital, human capital and organizational capital. A capability is a capacity for a set of resources to perform a stretch task of an activity. Each organization is a collection of unique resources and capabilities that provides the basis for its strategy and the primary source of its returns. In the 21st-century hyper-competitive landscape, a firm is a collection of evolving capabilities that is managed dynamically in pursuit of above-average returns. Thus, differences in firm’s performances across time are driven primarily by their unique resources and capabilities rather than by an industry's structural characteristics. The Resource based view theory is used to explain how private Universities gain competitiveness through innovatively delivering superior value to customers, they focus on the strategic identification and use of resources for developing a sustained competitive advantage.

**Porter's generic strategies theory.**

i) **Course Cost Leadership Strategy.**

This is Porter's *generic strategies theory* known as cost leadership (Malburg, 2000). This strategy focuses on gaining competitive advantage by having the lowest cost in the industry (Porter, 1987, 1996; Cross, 1999). In order to achieve a low-cost advantage, an organization must have a low-cost leadership strategy, low-cost manufacturing, and a workforce committed to the low-cost strategy (Malburg, 2000). The organization must be willing to discontinue any activities in which they do not have a cost advantage and should consider outsourcing activities to other organizations with a cost advantage (Malburg, 2000). For an effective cost leadership strategy, a firm must have a large market share (Hyatt, 2001). There are many areas to achieve cost leadership such as mass production, mass distribution, economies of scale, technology, product design, input cost, capacity utilization of resources, and access to raw materials (Malburg, 2000).

ii) **Course Market Focus Strategy**

The focuser’s basis for competitive advantage is either lower costs than competitors serving that market segment or an ability to offer niche members something different from competitors. Focusing is based on selecting a market niche where buyers have distinctive preferences. The niche is defined by geographical uniqueness, specialized requirements in using the product or by special attributes that appeal to members, (Stone, 1995).

iii) **Course Differentiation Strategy**

Differentiation strategies are marketing techniques used by a firm to establish strong identity in a specific market; also called segmentation strategy. Using this strategy, a firm will introduce different varieties of the same basic product under the same name.
into a particular product category and thus cover the range of products available in that category. Differentiation strategy can also be defined as positioning a brand in such a way as to differentiate it from the competition and establish an image that is unique, (Davidow & Uttal, 1989). Differentiation strategy aims to build up competitive advantage by offering unique products which are characterized by valuable features, such as quality, innovation, and customer service. Differentiation can be based on the product itself, the delivery system, and a broad range of other factors. With these differentiation features, firms provide additional values to customers which will reward them with a premium price.

iv) Horizontal and vertical Integration Strategy

Horizontal integration is used when a firm’s long term strategy is based on growth through the acquisition of one or more similar firms operating at the same stage of the production-marketing chain (Pearce and Robison, 2000). Such acquisition eliminates competitors and provides the acquiring firm with access to new markets. Vertical integration involves the firm expanding the firm’s range of activities backward into sources of supply or forward toward end users (Thompson, Strickland and Gamble, 2005).

Study Population

According to Cooper and Schindler (2000), a population is the total collection of elements about which we wish to make inferences. The population of interest in this study comprised of all the twenty seven private universities which are operating under either interim or full charter. This was therefore a census study.

Data Collection

The study used primary data. This was collected using semi-structured questionnaires. Each item on the semi-structured questionnaire addressed a research question.

It contained semi-structured questions. These are easy to analyze using statistical techniques and facilitate comparisons to be made across groups. The semi-structured questionnaire was self-completion and copies were dropped and picked at later date. The semi-structured questionnaire was divided into three parts. The first part gathered data on the demographic aspect of the university. This included title, gender and years of the respondent serving in that post, the university name, schools in the university, years of operation and the number of campuses it has. This information helped to determine the weaknesses and strengths of the university.

The second part sought to establish the strategies employed by the Private universities to gain competitive advantage in the industry. This helped to determine the extent to which some strategies are used as opposed to others. The last section examined the challenges encountered by the Private universities in using each of the competitive strategies highlighted.
Data Analysis

Data analysis generally involved reducing accumulated data to a controllable size, developing summaries, looking for patterns, and applying statistical techniques (Cooper and Schindler 2000). Data was described and analyzed using descriptive statistics such as frequencies, percentages, mean and standard deviation. Measures of dispersion were used to describe the spread of the data using measures such as range and standard deviation.

Data Analysis, Interpretation and Presentation

The study was conducted on 27 respondents who were served with a questionnaire; out of 27 targeted respondents, 25 respondents filled-in and returned the questionnaires which make a response rate of 92.6 %. Descriptive statistics was used to analyze the data. In the descriptive statistics, relative frequencies were used in some questions and others were analyzed using mean scores with the help of Likert scale ratings in the analysis.

Table 4.1 Summary of the respondent’s gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>32.0</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Research Findings, 2018

Competitive Strategies employed by Private Universities

Table 4.2 Strategies used by private universities to remain competitive in the market

<table>
<thead>
<tr>
<th>Application of competitive Strategy</th>
<th>Mean</th>
<th>Std deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of student centered focus</td>
<td>3.8551</td>
<td>.69985</td>
</tr>
<tr>
<td>Use of course cost leadership</td>
<td>3.9420</td>
<td>.74254</td>
</tr>
<tr>
<td>Course differentiation</td>
<td>3.9855</td>
<td>.72480</td>
</tr>
<tr>
<td>Use of concentrated growth such as concentrating on one key area of Expertise</td>
<td>3.6739</td>
<td>.60609</td>
</tr>
<tr>
<td>Use of course development such as introduction of new courses</td>
<td>3.6957</td>
<td>.56165</td>
</tr>
<tr>
<td>Use of market development (such as opening new campuses in new cities and counties and international markets)</td>
<td>3.5725</td>
<td>.55220</td>
</tr>
</tbody>
</table>
Table 4.3 summary of the challenges faced by Private Universities

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Mean</th>
<th>Std Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting Commission of Higher Education (CHE) requirements</td>
<td>4.4710</td>
<td>.97556</td>
</tr>
<tr>
<td>Students strike which affect duration of courses and diminish public confidence</td>
<td>4.4130</td>
<td>.64760</td>
</tr>
<tr>
<td>Increased competition from other universities</td>
<td>3.7464</td>
<td>.70516</td>
</tr>
<tr>
<td>Staff turnover</td>
<td>3.7319</td>
<td>.71009</td>
</tr>
<tr>
<td>Lack of enough space</td>
<td>3.6232</td>
<td>.88954</td>
</tr>
<tr>
<td>Maintaining reasonably low fees</td>
<td>4.1232</td>
<td>1.19276</td>
</tr>
<tr>
<td>Imitation of courses by other universities</td>
<td>3.7319</td>
<td>.58621</td>
</tr>
<tr>
<td>Students inability to differentiate a university’s courses from those offered by other universities</td>
<td>3.5507</td>
<td>.62866</td>
</tr>
</tbody>
</table>

**Source:** Research findings, 2018
<table>
<thead>
<tr>
<th>Change in market needs</th>
<th>3.5435</th>
<th>.70576</th>
</tr>
</thead>
<tbody>
<tr>
<td>High fee default rate among students</td>
<td>4.0362</td>
<td>.75850</td>
</tr>
<tr>
<td>Huge financial requirement to establish and run the university</td>
<td>3.9203</td>
<td>.86338</td>
</tr>
<tr>
<td>Competition arising from foreign and public universities</td>
<td>4.1522</td>
<td>.80057</td>
</tr>
</tbody>
</table>

**Source: Research findings, 2018**

From the findings on the challenges faced by private Universities for them to remain competitive in the market, the study revealed that those faced to great extent were: meeting Commission of Higher Education (CHE) requirements as shown by mean of 4.4710, Students strike which affect duration of courses and diminish public confidence as shown by mean of 4.4130, maintaining reasonably low fees as shown by mean of 4.1232, competition arising from foreign and public universities as shown by mean of 4.1522, high fee default rate among students as shown by mean of 4.0362, huge financial requirement to establish and run the university as shown by mean of 3.7464, staff turnover and Imitation of courses by other universities as shown by mean of 3.7319 in each case, lack of enough space as shown mean of 3.6232, Students inability to differentiate your courses from those offered by other universities as shown mean of 3.5507 and Change in market needs as shown by mean of 3.5435. The study further revealed that other challenges faced by private for them to remain competitive in the were: market regulation by the government, competition from well-established public universities, lack of student funding by HELB, lack of government support for private universities and shortage of qualified personnel.

**Conclusion**

The study concluded that Private Universities in Kenya have adopted various competitive strategies to remain competitive in the market. These were: course differentiation, course cost leadership, customer/student centered & focus, use of internet to market, offering e-learning, online registration and timely release of results, strategic alliances and partnership, horizontal and vertical integration such as acquiring other colleges to ease competition, product development such as introduction of new courses, concentrated growth, diversification, market development, and vertical integration.

The study also concluded that private universities faced various challenges in the market. These were: meeting Commission of Higher Education (CHE) requirements, students strike, maintaining reasonably low fees, competition arising from foreign and public universities, high fee default rate among students, huge financial requirement to establish and run the university, increased competition from other universities, staff turnover, limitation of courses by other universities, lack of enough
space, students inability to differentiate a university’s courses from those offered by other universities, change in market needs, regulation by the government, competition from well-established public universities.

**Recommendations**

1) The study recommends that Private Universities should put in place competitive strategic responses to help them gain a competitive advantage over their competitors. They should focus on strategies that benefit their organization through increased profitability at the least cost possible. Through the employment of differentiation strategies, Private Universities should find strengths that enable them to broaden their scope within the Private Universities market and identify a position for themselves. Through focus strategy they should expand into new markets and identify products that can help them compete within the established markets. This will be done by identifying the segments in the market that suits their products and services.

2) Through the already established relationship between competitive strategies and performance improvement in response to increased competition, the strategies put in place should be effective. These will help them to establish a profitable and sustainable position against the forces that determine industry competition. This is because good strategy can contribute to growth, profitability, market penetration, cost-reduction, cutting-edge differentiation of products and sustainable competitive advantage of business firms.

**References**


Banya, K. (2001), Are Private Universities the solution to the higher education crisis in sub-Saharan Africa? *International Association of Universities, 14*, 161-174


Embracing Innovative Technology for Low Cost Housing: A Kenyan Perceptive.
Mwangi, Patrick¹ and Wasike, Jotham²
¹,²Kirinyaga University, Kenya.
Correspondence: patrickmwangi508@gmail.com

Abstract
In the recent past, all sectors of the economy have been evolving, mainly because of adoption of new technology. Despite the fact that many economic sectors in Kenya have embraced e-commerce technology, housing sector still lags behind. The paper sought to investigate factors influencing adoption of e-commerce technology in the housing sector. The study objectives were to investigate the factors influencing adoption of e-commerce in the housing sector and the study used the following objectives: knowledge of e-commerce benefits, infrastructure and technical skills, IT knowledge and skills among the house owners and cost of implementing e-
commerce. The study used a sample of 100 house owners in Nairobi County. Simple random sampling was employed to select the respondents. Descriptive research design was used to explain the phenomenon while correlation was used to establish relationship among variables. The study found out that knowledge of its benefits, IT knowledge and skills and cost of implementing the e-commerce, significantly influenced the adoption of e-commerce technology in the Kenyan housing sector. IT infrastructure and technical skills was found to have less influence in adoption of ecommerce in the housing sector. It was recommended that more training should be done to house owners, youths and youth enterprises to invest in housing sector. The study also recommended that IT specialists and web developers should develop and market a website where both commercial and residential tenant seeking housing facilities can easily access them.

**Keywords:** Cost, Technology, Knowledge, Infrastructure, Technical Skills.

**Study Overview**

The advent of the technological era has delivered a latent opportunity for entrepreneurs and other small and medium enterprises to create more value-adding activities (Jones, Hecker, & Holland, 2003). The current world is run is by technology and therefore it is widely acceptable that businesses should embrace e-commerce for them to remain competitive (Van Akkeren & Cavaye 1999). E-commerce is a technology that facilitates buying and selling of goods and services using the online platform. In Kenya the housing sector comprise of the government and private owners, and they supply the housing services to tenants. The services offered in this sector falls under two main categories residential housing or commercial housing. Shelter is part and parcel of human life as people cannot the wilderness and hence they must always seek for permanent or semi-permanent structures in which to live in or to do business. Globally, the housing is one of the major problem experienced in many countries as a result of increase in human population. However, less attention has been given to use of technology to improve housing as well as the use technology to secure houses. In the housing sector more effort has been directed to the use of current technology to build.

The housing sector has lagged behind in adoption of e-commerce. America one of the largest economy in the world and also one of the leading country in technology development has no single popular brand known for offering online housing services. China is the home of the Alibaba, Jindong and WSMALL. China being the leading country in e-commerce, it has ventured in the online housing services. The main real-estate companies that has online platforms include Juwai.com, Soufan.com, E-House and Auproperty.com (Jim, 2014). The sites deal with buying and selling of real estate and therefore the online market for commercial houses and residential renting is void. India another emerging economy and has adopted the use of e-commerce. Real estate 99 Acres.com and Housing.com. The 99 Acres.com link up property dealers, property owners and builders and while the Housing.com allows customers to search for houses based on the geography, number of room and other filters and is open for both commercial and non-commercial houses (Rai, 2015). However only, a small number of uses online platforms to search for residential houses.
In Africa e-commerce adoption (Faloye, 2014). Locally, the country has three well-known brands that offers e-commerce services: Jumia, KiliMall and OLX. The three mentioned brands mainly deal with retails products, electronics, cars and fashion products. In Kenya the internet connectivity is almost hitting 60% but only 30% of Kenyans are willing to buy goods and services online (Muli, 2018). Less attention has been given to adoption of e-commerce in the housing sector despite the increasing rate of population and the housing problem.

In Kenya, retail industry and hotel industry are leading in adoption of e-commerce. The “shop online” trend has significantly reduced time spent when shopping and also have created convenience for people who have very tight schedules. Despite the challenges associate with the online shopping, Kenyans are still convinced that, e-commerce is the way to go, however the adoption of e-commerce in the housing sector is very low despite its enormous benefits. Therefore, this paper sought to investigate the factors influencing the adoption of e-commerce in the Kenyan Housing sector.

**Study Objectives**

The study was guided by the following objectives:

i. To examine the extent to which knowledge of e-commerce benefits influenced the adoption of e-commerce in the Kenyan housing sector.

ii. To investigate the extent to which IT knowledge and skills among house owners influenced the adoption of e-commerce among house owners in Kenya.

iii. To investigate the extent to which IT infrastructure and technical skills among the house owners influenced the adoption of e-commerce among house owners in Kenya.

iv. To investigate the extent to which cost of implementing e-commerce among the house owners influenced the adoption of e-commerce in Kenya.

**Theoretical Frame Work**

The study was grounded on three main theories as explained. First is the resource-based theory. According to the resource based theory, organizations with more strategic resources derive more competitive advantage over organizations that do not. This theory argues that organizations achieve competitive advantage over their competitors from value creation and implementation of the various organizational strategies through effective use of its core resources (Barney, 2014). This theory helped in derivation of the first and the fourth objective of the study (knowledge of e-commerce benefits and cost of implementation). The second theory was the theory of Planned Behaviour (TPB). This theory was developed by Ajzen in the year 1991 to explain behaviour for technology-related services and products. The theory suggests behavioural intention is a central factor in human behaviour is, which is affected by attitude towards behaviour, subjective norm, and perceived behavioural control (PBC) (Ajzen, 1985, 1991, 2002). Subjective norm expresses the perceived organizational or social pressure of a person who intends to perform the behaviour in question. PBC reflects a person ' s perception of the ease or difficulty of implementing the behaviour in question and it concerns beliefs about the presence of control factors that may facilitate or hinder their behaviour. This theory was used to develop the second objective of the study IT knowledge and skills. Diffusion of
Innovations Theory was the last theoretical model and it was developed by E.M. Rogers in 1962. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses through a specific population or social system. The end result of this diffusion is that people, as part of a social system, adopt a new idea, behavior, or product. Adoption means that a person does something differently than what they had previously. The key to adoption is that the person must perceive the idea, behavior, or product as new or innovative. It is through this that diffusion is possible. The theory was used to develop the first objective of the study.

**Conceptual Framework**

A conceptual framework is a diagrammatic representation of the relationship of the various dependent and independent variables that are going to be investigated (Taylor, Bogdan & DeVault, 2015).

Figure 2.1: Conceptual Framework

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of E-commerce Benefits</td>
<td></td>
</tr>
<tr>
<td>IT Knowledge and Skills</td>
<td></td>
</tr>
<tr>
<td>IT Infrastructure and Technical skills</td>
<td></td>
</tr>
<tr>
<td>Cost of implementing E-commerce</td>
<td></td>
</tr>
<tr>
<td>Adoption of E-commerce in the Housing Sector</td>
<td></td>
</tr>
</tbody>
</table>
Empirical Review
Karime (2013), examined the factors influencing adoption of e-commerce among youth entrepreneurs in Nakuru Town, Kenya. The study used a sample of 198 youth entrepreneurs. It was established that a number of entrepreneurs had adopted various aspects of e-commerce. Further the study established that perceived benefits, security/privacy concerns and internet access significantly influenced the adoption of e-commerce. The adoption rate in this case was expected to be high since the target population were the youth aged between 18 years to 35 years. Macharia (2009) researched on factors affecting the adoption of e-commerce in SMEs in Kenya. The research shown that Small and Medium-sized Enterprises (SMEs) were rapidly adopting the electronic commerce (e-commerce), to enable them to compete on par with their larger counterparts. Previous studies indicated significant benefits that had been achieved by those SMEs that adopt and use e-commerce in their organisations. However, the benefits have not been realised in SMEs in developing economies like Kenya owing to the slow adoption of e-commerce. The research established that there was a positive relationship between costs of e-commerce implementation, Information Technology (IT) skills and training, with e-commerce adoption by Small and Medium Enterprises (SMEs).
Kenneth, Rebecca and Eunice (2012) examined the factors affecting the adoption of electronic commerce among small medium enterprises in Kenya. The study used a survey of tour and travel firms in Nairobi. The study used the objectives the effect of leadership styles, infrastructure, resources, and competition on the adoption of electronic commerce among SMEs in Kenya. The study population was three hundred and fifty tours and travel firms. The study found out that the majority of Tour and Travel firms had adopted electronic commerce in their daily transaction. The findings also showed that infrastructure, leadership style, competition, resources and positioning on the adoption of electronic commerce significantly influenced the adoption of e-commerce among the travelling agencies.
Alrousan (2015) examine the adoption of E-commerce by travel agencies in Jordan. According to the study factors affecting e-commerce adoption by SMEs have been well-documented in developed countries, but inadequate studies have been conducted regarding e-commerce adoption in the developing countries and more particularly in Arab countries. It was established that despite the potential benefits for travel agencies for adoption of ecommerce, travel agencies had not adopted e-commerce were regarded as slow adopters of e-commerce, lagging far behind the developed countries. The results showed that compatibility, trialability, employees’ IT knowledge, top management support, manager’s attitude, and customer pressure were insignificant predictors of any of the e-commerce adoption levels.
Aljowaidi (2015) carried out a study to examine the factors that were influencing adoption of e-commerce among Saudi retailers. Lack of government initiatives, legal frameworks, inadequate external ICT infrastructure, and low e-readiness among local trading partners, poor physical infrastructure, and lack of e-payment methods were identified as environmental barriers that hindered adoption of e-commerce.
Research Gap
From the analysis of the literature it was clear that more studies were carried out in developed countries and hence there was need to fill the geographical gap. Secondly,
most of the studies were carried out in the past and the study sought bridge the time gap. Lastly, most of the studies were carried out in the retail industry and focused on SMEs. The study sought to bridge the sectorial gap by examining the factors that hindered the adoption of e-commerce in the housing sector. The idea of focusing on the housing sector was drove by the need of achieving the “The Big Four”, development agenda of affordable housing to all Kenyans.

Methodology
The study used descriptive and correlational research design. The descriptive research design was used to explain the phenomenon of e-commerce adoption while correlational design was used to establish the relationship between the selected variables and the dependent variables. The target population for the study were the house owners located within Nairobi County. The study used a sample of 100 landlords who were selected randomly. The study used primary data which was collected with the help of questionnaires which will compose both open and closed ended questions and interview. The questionnaires were administered through drop and pick procedure to reduce pressure on the respondents (Kumar & Phrommathed, 2005). The collected data was cleaned and edited to ensure that incomplete and inaccurate data was eliminated. The edited data was analyzed with the help of SPSS version 23 and presented in form tables.

Data Analysis, Findings and Discussion
The target groups for the questionnaire were the landlords within Nairobi country. The rate of response rate was 95%. This response rate was good and representative and conforms to Mugenda and Mugenda (1999) stipulation that a response rate of 50% is adequate for analysis and reporting. The study sought to establish the age and educational qualification of the respondents as shown in Table 4.1.

Table 4.1: Age of the Respondents

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30 years</td>
<td>1</td>
<td>1.1%</td>
</tr>
<tr>
<td>31-40 years</td>
<td>4</td>
<td>4.2%</td>
</tr>
<tr>
<td>41-50 years</td>
<td>8</td>
<td>8.4%</td>
</tr>
<tr>
<td>51-60 years</td>
<td>20</td>
<td>21.1%</td>
</tr>
<tr>
<td>61-70 years</td>
<td>27</td>
<td>28.4%</td>
</tr>
<tr>
<td>71 years and above</td>
<td>35</td>
<td>36.8%</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>100%</td>
</tr>
</tbody>
</table>

The findings revealed that majority of the house owners were aged senior citizens aged above the age of 71 years.

Table 4.2: Analysis of Level of Education for the Respondents

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary level</td>
<td>30</td>
<td>31.6%</td>
</tr>
<tr>
<td>Secondary level</td>
<td>33</td>
<td>34.7%</td>
</tr>
<tr>
<td>Diploma</td>
<td>17</td>
<td>17.9%</td>
</tr>
<tr>
<td>Degree</td>
<td>10</td>
<td>10.5%</td>
</tr>
</tbody>
</table>
The findings revealed that majority of the house owners had not gone beyond secondary school level about 66.2% of the respondents.

**Knowledge of E-commerce Benefits**

76% of the respondents strongly agreed that knowledge of e-commerce benefits influenced adoption of e-commerce in the housing sector as shown in table 4.3 below. Multiple regression analysis was carried out on the measures and an R² value of 0.522 as shown in Table 4.4 was obtained for the measures of knowledge of e-commerce benefits. The analysis also show that there was a strong positive relationship between benefits of e-commerce and it adoption (r=0.72). These results indicate that knowledge of e-commerce benefits influences 52.2% of the decision to adopt e-commerce in the housing sector.

**Descriptive Analysis of Benefits of E-commerce Knowledge**

<table>
<thead>
<tr>
<th>Knowledge of e-commerce</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Strongly Agree</td>
<td>76</td>
<td>76.0</td>
<td>80.0</td>
<td>80.0</td>
</tr>
<tr>
<td>Agree</td>
<td>19</td>
<td>19.0</td>
<td>20.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>95.0</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing System</td>
<td>5</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4.4: Regression Analysis of benefits of e-commerce knowledge**

<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>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.722</td>
<td>.522</td>
<td>- .008</td>
<td>.487</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Knowledge of e-commerce

**IT Knowledge and Skills**

**Table 4.5: Descriptive Analysis of IT Knowledge and Skills**

<table>
<thead>
<tr>
<th>IT knowledge and skills</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid strongly agree</td>
<td>60</td>
<td>58.3</td>
<td>63.2</td>
<td>63.2</td>
</tr>
<tr>
<td>Agree</td>
<td>27</td>
<td>26.2</td>
<td>28.4</td>
<td>91.6</td>
</tr>
<tr>
<td>Neutral</td>
<td>8</td>
<td>7.8</td>
<td>8.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>92.2</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing System</td>
<td>8</td>
<td>7.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>103</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4.6: Regression Analysis of IT Knowledge and Skills**

<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>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.751</td>
<td>.5625</td>
<td>- .001</td>
<td>.454</td>
<td>.737</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), IT knowledge and skills

b. Dependent Variable: Adoption of Ecommerce
From the above analysis majority of the respondents (58.3%) strongly agreed while (26.2%) agreed that IT knowledge and skills significantly influenced adoption of e-commerce in the housing sector. Regression analysis model was carried out on the measures and an R2 value of 0.5625 as shown in Table 4.6 was obtained for the measures of IT Knowledge and Skills. These results indicated that IT Knowledge and Skills influenced 56.25 % of the decision to adopt e-commerce in the housing sector. The analysis also showed that the relationship between IT knowledge and skills to adoption was very strong r= 0.751

**IT Infrastructure and Technical Skills**

**Table 4.7: Descriptive Analysis of Infrastructure and Technical Skills**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>agree</td>
<td>1</td>
<td>1.0</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>neutral</td>
<td>4</td>
<td>4.0</td>
<td>4.2</td>
<td>5.3</td>
</tr>
<tr>
<td>disagree</td>
<td>37</td>
<td>37.0</td>
<td>38.9</td>
<td>44.2</td>
</tr>
<tr>
<td>strongly disagree</td>
<td>53</td>
<td>53.0</td>
<td>55.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>95.0</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>5</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4.8: Regression Analysis of Infrastructure and Technical Skills**

Model Summary

<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>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.34**</td>
<td>.118</td>
<td>.088</td>
<td>.429</td>
<td>.867</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), It Infrastructure and technical skills, Kwoldge of ecommerce benefits, IT knoweldge and skills
b. Dependent Variable: Adoption of Ecommerce

From the above analysis it is clear that majority of the respondents 53% strongly disagreed that IT infrastructure and Technical Skills influenced adoption of e-commerce in the housing while 37% also disagreed with the stipulation that had been stated. From regression analysis it was clear that IT infrastructure and Technical skills only influenced 11.8% decision on adoption of e-commerce in the housing sectors. The analysis showed that there was a weak positive relationship between the variable and adoption of e-commerce r = 0.343.

**Cost of implementing E-commerce**

**Table 4.9: Descriptive Analysis of Cost of implementing E-commerce**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>71</td>
<td>71.0</td>
<td>74.7</td>
<td>74.7</td>
</tr>
<tr>
<td>agree</td>
<td>22</td>
<td>22.0</td>
<td>23.2</td>
<td>97.9</td>
</tr>
<tr>
<td>neutral</td>
<td>2</td>
<td>2.0</td>
<td>2.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>95.0</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>5</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Table 4.10: Regression Analysis of Cost of implementing E-commerce

<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>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.85</td>
<td>.7225</td>
<td>.016</td>
<td>.450</td>
<td>1.747</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Cost of implementing e-commerce
b. Dependent Variable: Adoption of Ecommerce

From the above analysis 71% of the respondents strongly agreed that cost of implementing e-commerce significantly influenced adoption of e-commerce in the housing sector. Regression analysis showed that 72.25% adoption decision was influenced by the cost aspect while the remaining balance of 27.75% was influenced by other factors. The analysis showed that there was a strong positive relationship between cost and adoption of e-commerce r=0.85.

Conclusions and Recommendations

The study concluded that knowledge and e-commerce benefits, IT knowledge and skills, cost of implementing e-commerce significantly influenced the adoption of e-commerce in the Kenyan housing sector. The study recommended that given the fact that most of the house owners are aged people they should be educated on the benefits that are likely to accrue as a result of adopting e-commerce. Secondly, it was recommended that youths and youth enterprises should focus on investing in housing sector as based on the research they were the minority composing of 5.3% to the total respondents. This could be done by utilizing the youth funds and well as the mobilizing resources through table banking initiatives. Lastly, the study recommended that IT web developers should take this as an opportunity to develop and market a website when both commercial and residential tenant can seek for housing facilities. The website should have photos of the houses, their prices, and location, contact of the owners or the caretaker and a reservation system. This would save a lot of time customers would not be required to spend a whole day looking for a commercial or residential house. Web developers should also use this as an opportunity for making extra cash, by charging commission to the house owners.

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Effect of Training and Development on Organizational Performance  
Peter Butali \(^1\)  
David Njoroge \(^2\)  

\(^1\)Garissa University, Kenya  
\(^2\)Kirinyaga University, Kenya  

Abstract  
The purpose of this study was to find out the impact of training and development on organizational performance. Organizations have been spending a substantial portion of their budgets on training and development in the belief that this will translate to an increase in employee productivity. This study was carried out in three companies namely Kenya Power, KenGen and Mumias Sugar Company. Descriptive survey design was adopted in the study. The study population was 5866 employees in the three companies. The findings of the study were that training and development had a significant effect on organizational performance. It is recommended that organizations should provide training and development as it is an important ingredient in improving organizational performance. Training should be done after a careful needs assessment, provided equally to all employees, should be continuous and should be evaluated.  

Keywords: Development, Employee Performance, Organizational Performance and Training.  

Introduction  
Training and development is crucial for the survival of any organization in the competitive world. Employees give an organization competitive advantage. Organizations must therefore invest in the training and development of its employees if they are to remain relevant and productive. There are long term and short term benefits accruing from investing in human capital (Nda & Fard, 2013). Training and development is important for effective performance of employees, improvement of their ability to adapt to the changing and challenging business environment and technology and increase employees’ knowledge to develop creative and problem solving skills (Falola, Osibanjo & Ojo, 2014). Organizations that attach value to training and development have been spending a substantial chunk of their budgets on training and development each year. General Electric for example invests approximately $1 billion each year for training and education programs for its employees (Noe et al, 2015). The justification for such expenditure can be realized through measurement of return on investment in the form of organizational performance. It would be important to establish the relationship between training and development and organizational performance in the second decade of the 21st century.  

Statement of the problem  
Public enterprises were formed to play a significant role. They were meant to meet commercial and social goals. Public enterprises exist to promote the general welfare of the people, to encourage investment in activities that require capital but take long to bring returns, to avoid wastage and inefficiency, as a source of revenue, to create employment and to control prices of products. However, these public enterprises have been riddled with poor performance and inefficiency. Such performance calls for the need to establish the human resource practice in such enterprises. Training and development have been thought to be the most common human resource practice (Tzafrir, 2006) hence a choice for this study. Three state corporations were selected for this study.  

Objectives  
The objective of the study was to examine the impact of training and development of employees on organizational performance in listed state corporations in the Nairobi stock exchange.  

Literature review
Training and development
According to Bernadin and Russell (2013), training refers to any attempt to improve employee performance on a currently held job or one related to it. This usually means changes in specific knowledge, skills, attitudes and behaviors. Dessler (2017) defines training as the process of teaching new or current employees the basic skills they need to perform the job. According to Abiodun (2010), training is a systematic development of the knowledge, skills and attitudes required by employees to perform adequately on a given task. Employee’s training and development is seen as the most important formation of any competent management. Training is the practice of equipping employees with skills, knowledge and abilities, with the aim of building organizational capabilities and organizational performance (Armstrong, 2009).

Development refers to learning opportunities designed to help employees grow. Such opportunities do not have to be limited to improving employees’ performance on their current jobs. Development has long term focus to help employees prepare for future work demands while training focuses on the immediate period to help fix any current deficits in employee’s skills (Bernadin & Russell, 2013).

Training programmes increase the firm specificity of employee skills, which, in turn, increase employee productivity and reduces job dissatisfaction that results in employee turnover (Huselid, 2010). Secondly, training and developing internal personnel reduces the cost and risk of selecting, hiring and internalizing people from external labor markets, which again increases employee productivity and reduces turnover. Training and development requires a certain degree of reciprocity. A company that trains and develops systematically its employees ensures that their market value develops more favorably than in other firms. This increases employees’ productivity, commitment and lowers turnover. Companies may also assist their employees in career planning. In doing so, companies encourage employees to take more responsibility for their own development, including the development of skills viewed as significant in the company (Doyle, 2009).

Barringer et al. (2005) compared rapid – growth and slow-growth firms and found that rapid – growth firms depend heavily on the abilities and efforts of their employees to maintain their growth oriented strategies. The fast – growth firms used training programs to achieve their objectives and emphasized employee development to a significantly greater extent than slow-growth counterparts. Therefore, training and employee development practices are more common in rapid – growth firms than slow growth ones.

Training and capacity building is central to sustaining economic growth and development because human capital is the greatest asset of any organization. Capacity building entails investment in human capital, institutions and practices necessary to enhance human skills, overhaul institutions and improve procedures and systems (Sanusi, 2002). Employee training and their development have outmost importance for the sake of improving the productivity, which leads towards gaining competitive advantage (Quartey, 2012). The training and development of the employees has direct contributions in the high achievements of the organization which shows better performance. Training increased the organizational performance as predicted by many researches (Peteraf, 2003; Niazi, 2011).

The resource based view theory supports that any training designed for the organization is based on the creation of values and enhancing the capabilities for the continued organizational performance (Barney, 2007). Training is very important in achieving the goal of the organization as it increases the efficiency and effectiveness of employees and adds value in the organizational performance. The performance of employees depends on different factors but training is most important because it enhances capabilities, skills and competencies of the employees. Training-related changes should result in improved job
performance and other positive changes that serve as antecedents of job performance (Kraiger, 2002).

Several studies conducted in European countries have documented the impact of training on organizational performance. Aragon-Sánchez et al. (2003) investigated the relationship between training and organizational performance by distributing a survey to 457 small and medium-size businesses in the United Kingdom, the Netherlands, Portugal, Finland, and Spain. Results indicated that some types of training activities, including on-the-job training and training inside the organization using in-house trainers, were positively related to most dimensions of effectiveness and profitability.

Imran and Tanveer (2015) in a Pakistani study found that there is a strong relationship between training and development and employee performance. Training and development prepare the employees to contribute more to the organization. Hence, training and development has a positive impact on employee performance in the banks of Pakistan. In another Pakistani study, Tahir, Yousafzai, Jan and Hashim (2014) carried out a study on the impact of training and development on employee performance and productivity. Findings of the study indicated that employees considered training and development as a main factor of employees’ performance and productivity and were in favor of it. This study revealed that banks’ administrations interested in their productivity and efficiency is left with no other option than to adopt training and development.

Falola, Osibanjo and Ojo (2014) conducted a study in the Nigerian banking industry. The results of the study indicated that training and development affects employees’ performance and organizational effectiveness. Consequently, efforts must be made to ensure that employees’ skills and knowledge are fully utilized through adequate and timely training design and implementation.

Muhibat and Tiamiyu (2016) carried out a study based on the effect of training and staff development on the organizational performance of Islamic financial institutions in Nigeria. Studies showed that organizations that have experienced employees and well trained employees are able to meet their targets and at the same time achieve their visions and mission statements. It was also proven that training improves employees’ performance on one hand and has a positive effect on the financial and non-financial performance of organizations on the other hand. Nda and Fard (2013) in their study found that training and development ultimately upgrade not only the productivity of employees but also of the organization.

Githinji (2014) conducted a study in Somalia and found that training positively influences employee performance by having a positive influence on employee engagement. The study showed that training enhances employee engagement in innovation and better performance among employees. The study also showed that training enhances employee enthusiasm and employee performance by influencing job satisfaction. Asfaw, Mesele and Bayissa (2015) in an Ethiopian study reported high level performance among the majority of the respondents who were involved in training and development interventions. Ombui, Kagiri and Omoke (2014) conducted a study in research institutes in Kenya. They established that the model summary for training and development indicated that there was a high significant relationship between training and development and employee performance. Ng’ang’a et al. (2013) investigated the relationship between Training and Development (T&D) as a Human Resource Practice and the organizational performance (OP) of the Kenyan state corporations. The findings established a positive correlation between training and development and Organizational Performance.

**Organizational performance**

Organizational performance is the achievement of organizational goals in the pursuit of business strategies that lead to sustainable competitive advantages (Gephardt & Van Bureu,
There are many indicators other than pure financial figures that indicate an increase in organizational performance (Huselid, 2010). One such indicator is the actual behaviour of employees, through the way they affect turnover and labour productivity (Huselid, 2010). Literature reviewed in the area of study is mainly on studies carried out in the west and the east. Kenyan studies in the area are relatively less. The available Kenyan studies have not concentrated much on large public enterprises. These large enterprises therefore were the focus of this study.

**Based on the literature reviewed, the following hypothesis was formulated:**

H0: There is no significant effect of training and development on organizational performance in listed state corporations in the Nairobi stock exchange.

**Conceptual framework**
The various variables under study were conceptualized to be related as shown below:

<table>
<thead>
<tr>
<th>TRAINING AND DEVELOPMENT</th>
<th>ORGANIZATIONAL PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDEPENDENT VARIABLE</td>
<td>DEPENDENT VARIABLE</td>
</tr>
</tbody>
</table>

**Research methodology**
This study employed survey research design. The study was conducted in three companies trading on the Nairobi Stock Exchange namely: Kenya Power, Kengen and Mumias Sugar. Descriptive survey design was used to allow the researcher to gather information, summarize, present and interpret for purpose of clarification.

The study population was all the 5866 employees in the state corporation under study. Kengen had 2066 employees, Kenya power had 2000, Mumias Sugar Company had 1800. The study used a sample of 361 respondents. This study used simple random and stratified sampling techniques. Simple random sampling was adopted because the population constituted a homogeneous group (Kothari, 2004). The sample selected from Kengen was 126 employees, 122 from Kenya Power and 113 from Mumias Sugar Company. The sample was based on the proportion of employees each company had. Stratified random sampling was used to group the employees into two so that each gender was included in the sample.

**Data analysis and presentation**
Data was analyzed using descriptive statistics and inferential statistics. To test the hypotheses, F-test was used. Multiple regression was applied in order to analyze the effect of training and development on organizational performance. The following model was adopted:

\[ Y = \beta_0 + \beta_1 X_1 + \epsilon \]

where:

- \( Y \) = Organizational performance
- \( X_1 \) = Training and development
- \( \beta_0 \) is a constant which denotes organizational performance that is independent of training and development
- \( \epsilon \) is a random variable introduced to accommodate the effect of other factors that affect organizational performance

The model was first subjected to correlation to establish whether the variable was significant. F-test was further computed for the individual variables’ coefficients to determine its significance in the model. Null hypothesis was accepted or rejected based on the p-value obtained. The test was done at \( \alpha = 0.05 \) level of significance.

**Results and discussion**
To investigate the effect of training and development of employees on organizational performance, nine items were analyzed. The reliability test of items on training and
development achieved a Cronbach Alpha of 0.8363 indicating a strong internal consistency. The results in Table 1 revealed that, workshops and seminars were always held for employees in the organization to improve their skills (mean = 4.01 and a standard deviation of 0.68), the organizations rarely provided employees with formal job training either on or off the premises (mean = 3.69 and a standard deviation of 1.24), employees in the organization always received intensive/extensive training in company-specific skills; task or firm-specific training (mean = 3.65 and a standard deviation of 1.05), employees in the organization had always been trained in a variety of jobs or skills and could perform more than one job (mean = 3.53 and a standard deviation of 1.07) and the core group of workers in the organization had off-the-job training in the past year and had improved communication and team work (mean = 3.52 and a standard deviation of 1.01). Based on the results, those firms that embraced training and development had positive effects on organizational performance.

The research established that 67.2% of the respondents agreed that employees in the organization were rarely trained in skills related to their jobs. However, 72.1% agreed that in their organization they always received intensive/extensive training in company-specific skills (task or firm-specific training). 87.8% of the respondents stated that workshops and seminars were always held for employees in their organization to improve their skills. 61.5% indicated that the core group of workers in their organization had off-the-job training in the past year and it improved communication and team working. As a result of training and development, 41.4% of the respondents agreed that they were fully satisfied with the organization induction/orientation/job related training.
Table 1: Employee Training and development on organizational performance

<table>
<thead>
<tr>
<th>Opinion on statement</th>
<th>SD</th>
<th>D</th>
<th>N/O</th>
<th>A</th>
<th>SA</th>
<th>Mean</th>
<th>Std</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees in the organization are rarely trained in skills related to their jobs</td>
<td>7.0</td>
<td>18.8</td>
<td>7.0</td>
<td>44.9</td>
<td>22.3</td>
<td>3.57</td>
<td>1.22</td>
</tr>
<tr>
<td>Employees in the organization always receive intensive/extensive training in company - specific skills (e.g. task or firm - specific training)</td>
<td>3.1</td>
<td>17.4</td>
<td>7.3</td>
<td>55.4</td>
<td>16.7</td>
<td>3.65</td>
<td>1.05</td>
</tr>
<tr>
<td>Workshops and seminars are always held for employees in the organization to improve their skills</td>
<td>1.7</td>
<td>8.0</td>
<td>2.4</td>
<td>63.5</td>
<td>24.3</td>
<td>4.01</td>
<td>0.68</td>
</tr>
<tr>
<td>Employees in the organization have always been trained in a variety of jobs or skills and can perform more than one job</td>
<td>2.8</td>
<td>20.5</td>
<td>13.5</td>
<td>46.9</td>
<td>16.3</td>
<td>3.53</td>
<td>1.07</td>
</tr>
<tr>
<td>The core group of workers in the organization has had off - the job training in the past year and it improved communication and teamwork</td>
<td>3.5</td>
<td>15.4</td>
<td>19.6</td>
<td>48.6</td>
<td>12.9</td>
<td>3.52</td>
<td>1.01</td>
</tr>
<tr>
<td>Organization rarely provides employees with formal job training either on or off the premises</td>
<td>3.5</td>
<td>19.2</td>
<td>8.7</td>
<td>44.8</td>
<td>23.4</td>
<td>3.69</td>
<td>1.24</td>
</tr>
<tr>
<td>Employee training in the organization is always effective</td>
<td>4.0</td>
<td>17.8</td>
<td>18.5</td>
<td>48.7</td>
<td>10.9</td>
<td>3.45</td>
<td>1.03</td>
</tr>
<tr>
<td>Employer rarely provides employee with sufficient opportunities for training and development</td>
<td>6.7</td>
<td>25.6</td>
<td>9.1</td>
<td>41.8</td>
<td>16.8</td>
<td>3.36</td>
<td>1.22</td>
</tr>
<tr>
<td>Employees in the organization are fully satisfied with organizational induction/orientation/job related training</td>
<td>3.9</td>
<td>27.4</td>
<td>26.3</td>
<td>34.0</td>
<td>8.4</td>
<td>3.16</td>
<td>1.04</td>
</tr>
</tbody>
</table>

Reliability Alpha - Employee training and development = 0.8363

Ranked on a scale where 1 = SD- Strongly disagree; 2= D-Disagree; 3= N/O- No opinion; 4 =A-Agree; 5 = SA-Strongly agree. n = 291.

To facilitate training for the employees to perform better in their work places, the respondents suggested that: organizations should have both international and local trainings, organize conferences, workshops and seminars, increase employees' salary, conduct job evaluation and enrichment. The respondents also felt that organizations should have personal development forms filled every six months by employees and team building activities. The organizations should also facilitate training for its employees to perform better in their work places by giving them study leave, conducting job evaluation and enrichment and use of consultants.

The findings indicated that organizational performance and training and development of employees had a significant relationship (r =0.360, p-value < 0.001). The findings showed there was a positive significant correlation in training and development on organizational
performance. This implied that training and development independently explained 12.96% of the variation in organizational performance.

Using the study model \( Y = \beta_0 + \beta_1X_1 + \varepsilon \), the equation for establishment of organizational performance in the regression formula therefore is \( Y = 0.360X_1 \). The model equation shows that standardized organizational performance will increase by 0.360 units with one unit increase in standardized training and development. The findings showed a positive impact of training and development on organizational performance.

Similarly, the F –test for this factor in the regression model was found to be significant \( F(1,284) = 42.268, p\text{-value} = 0.001 \).

Table 2: ANOVA table of training and development on organizational performance.

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>19.739</td>
<td>1</td>
<td>19.739</td>
<td>42.268</td>
</tr>
<tr>
<td>Residual</td>
<td>132.162</td>
<td>283</td>
<td>.467</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151.901</td>
<td>284</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

H0 was therefore rejected since the factor of employee training and development was able to significantly influence organizational performance. It was therefore concluded that training and development had a significant effect on organizational performance. These findings are consistent with the findings obtained in other studies (Imran & Tanveer, 2015; Nda & Fard, 2013; Githinji, 2014).

**Conclusion**

Training and development has a significant effect on organizational performance. Training and development was found to explain 12.96% of the variation in organizational performance.

**Recommendations**

Organizations should strive to provide training and development as it is an important ingredient in improving organizational performance. To achieve this end, the following should be embraced:

i) Training should be based on a careful needs assessment.

ii) Employees at all levels should get equal training.

iii) Organizations should make training and development of their employees a continuous activity.

iv) Training should be thoroughly evaluated to inform future decisions.

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