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The Influence of Technological Capability on Internationalization Status of Public Universities in Kenya

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Abstract

Purpose: The purpose of the study was to determine influence of technological capability on internationalization status of public universities in Kenya. Descriptive research design was used to conduct the study.

Methodology: The study employed a descriptive research design. This research study used positivism research philosophy. The target population comprised of all the 31 fully chartered public universities in Kenya. Since the population was small, no sampling was done and a census approach was applied in the study. Primary quantitative data was assembled by administering structured questionnaires. To analyze quantitative data, descriptive analysis, factor analysis and inferential statistics were used. Descriptive analysis comprised of the standard deviations and means. Inferential statistics comprised regression and correlations. Both multiple and linear regressions was used. Coding and analyzing of data was done using Statistical Package for Social Sciences (SPSS 26.0). Tables, diagrams and charts were further used to display the outcomes.

Findings: From the study findings technological capability had a statistically significant and positive influence on internationalization status.

Unique contribution to theory, practice and policy: Research findings showed that there was need for improvement in the use of online platforms for teaching and research. The study therefore recommends that public universities should therefore invest in upgrading of their online platforms for teaching and research so as to increase on their economies of scale.

Keywords: *Technological Capability, Internationalization Status, Public Universities*

1.0 Introduction

1.1 Background to the Study

According to Hawawini (2016), internationalization is a fundamental dynamic in tertiary institutions and can be defined as the deliberate attempt to inculcate and incorporate transnational, cross-cultural and universal approaches into the philosophy and ethos and outputs of higher education. The effect of organization capabilities in internationalization has been proved more pertinent to firm's internationalization activities (Frasquet et al., 2013). Internationalization of universities in the continent has been proven to have had a lengthy and challenging course considering the long colonialist memory lane and also the historical donor assisted projects for development. Despite this, it is likewise imperative to view internationalization as a present-day development whose objective is to support demographic, social, cultural and fiscal growth of societies and countries (Sehoole & Knight, 2013).

Njuguna and Itegi (2013) indicated that there are benefits in internationalizing higher education. They acknowledged that the universities in the country are able to enjoy international security, maintain fiscal attractiveness, foster transnational social relations, enhance technological engagement, promote an information driven economy as well they are able to develop territorial alliances that can engage with other global territories. McCann (2009) defines technological capabilities as the ability to employ successfully technological awareness in an endeavour to absorb, utilize, adjust and modify current technologies. The probability of HEIs displaying technological capacities is strongly affected by cooperation with non-regional providers as well as local and non-local stakeholders.

Indeed, internationalization has become a crucial item of universities' institutional strategies and critical for its competitiveness and justification (Fielden, 2011; Curtis, 2013). Thus, Mihut et al. (2016) posit that different levels of internationalization call for diverse uses and stages of technology. They suggested a direct link of the internationalization process and the creation of technological capability in the firm under research. The effective use of ICT, for instance in distance learning, enables HEIs to contact scholars, faculty and researchers across borders thus eliminating the inconveniences of physical mobility. The involved stakeholders are able to share insights by the use of ICT advancements such as e-learning websites or use of video conferencing technologies. Accessibility and employment of emerging technologies in teaching directly relates to globalization of the educational arena and student and staff exchange (Aleksic-Maslac & Magzan, 2012).

Technology capability presents a foundation that enables systems yield a constructive benefit on internationalization status. Schubert et al. (2017) further corroborates the findings by stating that institutions with low technological competences will internationalize innovation when faced by uncertainty in technology while those with high competences will withdraw from international innovation. Musuva et al. (2013) indicated that organizational capabilities are unique competencies that are inherent in a firm and which are inimitable and which are valuable in enhancing the development and growth of other firm specific resources.

McCann (2009) defines technological capabilities as the ability to employ successfully technological awareness in an endeavour to absorb, utilize, adjust and modify current technologies. The probability of HEIs displaying technological capacities is strongly affected by cooperation with non-regional providers as well as local and non-local stakeholders. Indeed, internationalization has become a crucial item of universities' institutional strategies and critical for its competitiveness and justification (Fielden, 2011; Curtis, 2013). Thus, Mihut et al. (2016) posit that different levels of internationalization call for diverse uses and stages of technology. They suggested a direct link of the internationalization process and the creation of technological capability in the firm under research.

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Accessibility and employment of emerging technologies in teaching directly relates to globalization of the educational arena and student and staff exchange (Aleksic-Maslac & Magzan, 2012). Notably, Okwemba (2019) identified technological capabilities as one of the major capabilities among others. (Nayeemunnisa & Gomathi, 2020) cited other organizational capabilities as including organizational learning, customer-centric orientation, business process orientation, and task-technology fit orientation.

1.2 Problem Statement

Kenya's Vision 2030 aims at a globally competitive country with Education and Training as one of the key drivers of social transformation. The current scenario in Kenya universities depicts a picture of a low status of internationalization. This is evidenced by the perennial poor regional and global rankings. Notably, only six out of the over 74 universities in Kenya made it to the top 200 rank in Africa according to the webometrics report of July, 2020. The Times Higher Education (THE) ranking report of 2023 indicates that only 2 universities in Kenya University of Nairobi and Egerton University made it in the list of 1799 best universities ranked globally. Studies have been done in Kenyan universities. Kathae (2015) focused on the adoption of internationalization strategy at university of Nairobi programmes in Kenya. The study however used a case study approach and did not specify the unit of observation. This presented a methodological gap. Additionally, there have been studies on the influence of organizational capabilities on internationalization in publicly quoted companies (Musuva et al., 2013) and the influence of organizational capabilities on organizational performance and competitive advantage targeted at other sectors such as the small medium enterprises (Kiiru, 2015). These studies however, have been carried out in different contexts, thus presenting a contextual gap. This research therefore aims at bridging the existing

research gap by providing empirical data on the measures undertaken by Kenya's public universities to boost their internationalization status by evaluating the influence of technological capability on the international status of Kenya's public universities.

1.3 Objectives of the Study

The study objective was to evaluate the influence of technological capability on internationalization status of public universities in Kenya.

2.0 Literature Review

2.1 Theoretical Framework

This study was informed by Task Technology Fit (TTF) Theory.

2.1.1 Task Technology Fit (TTF) Theory

This study was informed by the Task Technology Fit (TTF) Theory. TTF theory was proposed by Goodhue and Thompson (1995) and focused on analyzing and explicating effectiveness of information systems. Goodhue and Thompson (1995) further indicated that technologies are tools that can be used to carry out various functions by individuals. Therefore, technologies are actions that are taken by persons and help to convert inputs into outputs. The theory further shows the association between TTF and technology utilization as well as the association between TTF and performance.

Goodhue and Thompson (1995) further indicated that ICT enhances individual and performance of an organization if the functions of technology aligns to the features of the tasks to be done by the consumers within a firm. For technology to benefit a user in undertaking functions, TTF must exist. Goodhue (1995) proffers that for the requirements of a technology to offer perceivable gains, there has to be a link between fitness, a person's abilities and purpose. Marikyan and Papagiannidis (2022) proferred that the Task technology fit theory takes into consideration various aspects related to effectiveness of a technology. Marikyan and Papagiannidis (2022) allude that the theory illuminates the link between fitness of technology and its use in performance and affirm that despite the theory not having a high predictive power, it has gained credit owing to its ability to explain improvements to make technology easy to use and more reliable as initially proposed by Goodhue and Thompson (1995). However, the theory has been criticized by Fjernestad & Hiltz (1997) in not being strong enough to predict use of technology. This theory therefore informed the technological capability variable.

2.2 Empirical Literature

Lin et al. (2020) undertook a study on task-technology fit analysis of social media use for marketing the tourism and hospitality industry. The study entailed a desk review of 99 articles from over 26 countries worldwide and was guided by the Task Technology Fit (TTF) Theory. The survey alluded that TTF denoted the extent to which a particular technology facilitates users in undertaking their set responsibilities. Their study employed the TTF theory to assess the influence of technology adoption on the performance of the tourism industry. Their empirical review uncovered that a

number of factors including technology use and technology characteristics were some of the aspects that have an effect on use of the social media in marketing of hospitality and tourism. They however, noted that in most of the literature the attributes of the technology were not defined. The study adopted a desktop research design thus showing a methodological gap.

Likewise, Hidayat et al. (2021) undertook a literature review Contemporary Studies of Task-Technology Fit Theory. The purpose of the study was to examine the utilization of TTF theory by establishing the extent to which existing studies have made reference to the theory and in which particular environments the theory had been used. Their study determined that TTF theory had been mainly researched in education related studies. They also established that most of the studies based on TTF theory had been done in Asia. Their study recommended further research in other countries particularly for comparisons between the developing nations and those that are developed. They also recommended that more studies can be done to compare TTF in high-technology countries and low-technology countries to enhance the theory. The study was done in Asia while the current study was done in Kenya.

In Kenya, Jared et al. (2017) implemented survey research design that was descriptive and focused on 140 respondents (an average of 10 respondents per Institution) that is the heads of departments and/or sections and principals of the state owned TVET Institutions in Kenya's western region (using census survey). Figures and tables were used the present the findings. TVET Institutions in Kenya's western region was found by the study to have weak ICT capabilities thus disabling them from positioning themselves in the institutional dynamics of modern industry. It was however, established by the study that a positive relationship existed between the TVET Institutions' Competitive Advantage and Dynamic ICT Capabilities in the western part of Kenya. This investigation was meant to help in policy documents development to grow Kenya's TVET sector. The study was done in TVET institutions and left out the public universities.

Hagsten and Kotnik (2017) studied the ICT impact on internationalization in HEIs. The diverse ICT capacities comprised online presence, employee proportion with broadband internet, online transactions use and by employees schooled on ICT. By surveying 249 employees, the results showed a relationship that is positive between the capacities of ICT and the activities involved in exporting, though capacity efficiency tends to vary with countries. In nations with less developed institutional ICT intensity, basic capacities like online presence should be considered in the export decision. Indications also show that international sales expansion benefits from ICTs that are more advanced. The study left out other organizational capabilities that affect internationalization status and focused technological capability only.

Bruhn (2017) conceptualized how ICT can be used to internationalize university education. The paper indicated that the concept of virtual internationalization has potential in going far beyond virtual mobility. Virtual transnational education, virtual intercultural trainings and language courses, virtual internships and field trips, COIL, etc. were concluded to have diverse impact on internationalization. As digitalization, internationalization, and an expansion of flexible distance provision continue to be powerful trends, the study indicated that it would be worthwhile further investigating the manifestations and potentials of virtual internationalization in higher education.

The study left out other organizational capabilities that affect internationalization status and focused technological capability only.

3.0 RESEARCH METHODOLOGY

Descriptive research design was used to conduct the study. This research study used positivism research philosophy. The target population comprised of all the 31 fully chartered public universities in Kenya. Since the population was small, no sampling was done and a census approach was applied in the study. Primary quantitative data was assembled by administering structured questionnaires. To analyze quantitative data, descriptive analysis, factor analysis and inferential statistics were used. Descriptive analysis comprised of the standard deviations and means. Inferential statistics comprised regression and correlations. Both multiple and linear regressions was used. Coding and analyzing of data was done using Statistical Package for Social Sciences (SPSS 26.0). Tables, diagrams and charts were further used to display the outcomes.

4.0 RESULTS

4.1 Descriptive Results

Both the dependent and the independent variable descriptive were conducted.

4.1.1 Internationalization Status

This segment comprises descriptive analysis for internationalization status. On the statement that the university has active collaborations and linkages with universities in other countries, 87(46.3%) of the respondents strongly agreed with the line statement, 58(30.9%) agreed with the line statement, 14(7.4%) moderately agreed, 7(3.7%) disagreed with the line statement while 22(11.7%) strongly disagreed with the line statement (mean response of 3.96, standard deviation of 1.32). On the statement that the university has communication channels with international partners, 82(43.6%) of the respondents strongly agreed with the line statement, 50(26.6%) agreed with the line statement, 28(14.9%) moderately agreed, 4(2.1%) disagreed with the line statement while 24(12.8%) strongly disagreed with the line statement (mean response of 3.86, standard deviation of 1.35). On the statement that the university has communication channels with international partners, 67(35.6%) of the respondents strongly agreed with the line statement, 49(26.1%) agreed with the line statement, 47(25%) moderately agreed, 6(3.2%) disagreed with the line statement while 19(10.1%) strongly disagreed with the line statement (mean response of 3.74, standard deviation of 1.26). Further, on the statement that the university has international academic staff, 49(26.1%) of the respondents strongly agreed with the line statement, 63(33.5%) agreed with the line statement, 28(14.9%) moderately agreed, 26(13.8%) disagreed with the line statement while 22(11.7%) strongly disagreed with the line statement (mean response of 3.48, standard deviation of 1.33).

Further, on the statement that the university has partnered with international professional bodies, 58(30.9%) of the respondents strongly agreed with the line statement, 68(36.2%) agreed with the line statement, 29(15.4%) moderately agreed, 14(7.4%) disagreed with the line statement while 19(10.1%) strongly disagreed with the line statement (mean response of 3.70, standard deviation

of 1.26). This infers that the higher number of respondents agreed with the line statement and the responses were highly varied from the mean.

Further, on the statement that the university has affiliations with international networks, 87(46.3%) of the respondents strongly agreed with the line statement, 53(28.2%) agreed with the line statement, 23(12.2%) moderately agreed, 2(1.1%) disagreed with the line statement while 23(12.2%) strongly disagreed with the line statement (mean response of 3.95, standard deviation of 1.32).

On the statement that the university holds international research conferences, 98(52.1%) of the respondents strongly agreed with the line statement, 42(22.3%) agreed with the line statement, 25(13.3%) moderately agreed, 15(8%) disagreed with the line statement while 8(4.3%) strongly disagreed with the line statement (mean response of 4.10, standard deviation of 1.16).

On the statement that the staff in the university have joint publications with international researchers, 92(48.9%) of the respondents strongly agreed with the line statement, 52(27.7%) agreed with the line statement, 14(7.4%) moderately agreed, 9(4.8%) disagreed with the line statement while 21(11.2%) strongly disagreed with the line statement (mean response of 3.98, standard deviation of 1.33).

The aggregate mean was 3.85 implying that the higher number of respondents agreed with the line statements on internationalization status. In addition, the standard deviation was 1.29 implying that most responses varied from the mean

Table 1: Internationalization Status Descriptive Analysis

Inquiry	1	2	3	4	5	Mean	Std.Dev
The university has active collaborations and linkages with universities in other countries	22 (11.7%)	7 (3.7%)	14 (7.4%)	58 (30.9%)	87 (46.3%)	3.96	1.32
The university has communication channels with international partners	24 (12.8%)	4 (2.1%)	28 (14.9%)	50(26.6%)	82 (43.6%)	3.86	1.35
The university promotes study opportunities to enhance enrolment of international students	19 (10.1%)	6 (3.2%)	47 (25%)	49 (26.1%)	67 (35.6%)	3.74	1.26
The university has international academic staff	22 (11.7%)	26 (13.8%)	28 (14.9%)	63 (33.5%)	49 (26.1%)	3.48	1.33
The university has partnered with international professional bodies	19 (10.1%)	14 (7.4%)	29 (15.4%)	68 (36.2%)	58 (30.9%)	3.70	1.26
The university has affiliations with international networks	23 (12.2%)	2 (1.1%)	23 (12.2%)	53 (28.2%)	87 (46.3%)	3.95	1.32
The university holds international research conferences	8 (4.3%)	15 (8%)	25 (13.3%)	42 (22.3%)	98 (52.1%)	4.10	1.16
Staff in the university have joint publications with international researchers	21 (11.2%)	9 (4.8%)	14 (7.4%)	52 (27.7%)	92 (48.9%)	3.98	1.33
Average						**3.85**	**1.29**

4.1.2 Technological Capabilities

On the statement that continuous training programmes for employees boosts their ICT skills, most of the respondents who were 84.1% of the respondent agreed with the line statement. This implied that Universities regularly conducted ICT training courses for staff. Further, on the statement that having competent staff in the ICT department enhances internationalization, most of the respondents who were 76.1% agreed with the line statement. This implied that universities had employed staff who were knowledgeable on ICT. Both of these findings agree with Hagsten and Kotnik (2017) who established the ICT impact on internationalization in HEIs based on the employee proportion schooled on ICT.

On the statement that having adequate ICT infrastructure aids in internationalization, most of the respondents who were 80.9% agreed with the line statement. These findings demonstrate that universities have invested in ICT in the form of infrastructure and competent staff. Further, on the statement that integration of the latest technologies into existing operations aids in internationalization, most of the respondents who were 78.2% agreed with the line statement. This points to the fact that universities have invested in the latest technologies in teaching and learning. However, this disagrees with Jared et al. (2017) who found that TVET Institutions in Kenya's western region have weak ICT capabilities thus leaving them unable to position themselves in the institutional dynamics of modern industry.

On the statement that IT Capabilities enables the institution mitigate against contextual risks and limitations in the educational sector, most of the respondents who were 84.1% agreed with the line statement. This implies that most of the public universities have employed various forms of technological capabilities to overcome challenges in the sector. On the statement that the technological capability of the university enables the institution attain competitive advantage over other institutions, most of the respondents who were 83.5% agreed with the line statement. This shows that institutions had utilized technological capabilities to their advantage.

On the statement that the advancements in communication technologies such as video conferencing, social media and online payments has enhanced the internationalization status of the university, most of the respondents who were 79.8% agreed with the line statement. This also indicates that universities had embraced advanced technologies in their operations and which have enhanced their internationalization status. This relates positively with findings by Hagsten and Kotnik (2017) in their study on the ICT impact on internationalization in HEIs. The results showed a relationship that is positive between the capacities of ICT and the activities involved in exporting. Further, they established that the diverse ICT capacities are comprised in online presence, employee proportion who have access to broadband internet, online transactions use and by employees schooled on ICT. On the statement that the use of online platforms for teaching and research enhances internationalization, most of the respondents who were 80.8% agreed with the line statement. This high percentage of positive respondents indicates that universities actively embrace online teaching methods and this can be attributed to emerging trends following the COVID-19 pandemic which saw most universities shift to online teaching in order to keep their programmes running. This is in tandem with Aleksic-Maslac and Magzan (2012) who connoted

that the effective use of ICT, for instance in distance learning, enables HEIs to contact scholars, faculty and researchers across borders thus eliminating the inconveniences of physical mobility. The involved stakeholders are able to share insights by the use of ICT advancements such as e-learning websites or use of video conferencing technologies.

On the statement that the adaptation to technological changes in the education system has enhanced internationalization, most of the respondents who were 78.8% agreed with the line statement. These findings can also be attributed to emerging trends especially owing to the corona virus pandemic and which brought a paradigm shift in educational systems in the country as most institutions embraced technology in a bid to remain relevant. This aspect was confirmed by Fielden (2011) and (Curtis, 2013) who declared that indeed, internationalization has become a crucial item of universities and that different levels of internationalization call for diverse uses and stages of technology (Mihut et al., 2016).

The statements with the highest mean were; continuous training programmes to employees boosts their ICT skills (mean=4.16, std.dev= 1.12), having adequate ICT infrastructure aids in internationalization (mean=4.20, std.dev= 1.30), the technological capability of the university enables the institution attain competitive advantage over other institutions, (mean=4.19, std.dev= 1.28). The statement with the lowest mean was Use of online platforms for teaching and research enhances internationalization (mean=4.06, std.dev= 1.33). These implied that most of the respondents were more inclined towards all the statements on technology. Henard et al. (2012) opined that ICT is influential in conveying the goals of internationalization. This is because, through information and communication technology, numerous and innovative academic programmes can be offered at cheaper rates in more flexible ways regardless of geographic locations. Henard et al. (2012) also note that through use of virtual mechanisms, internationalization expands the coverage and availability of educational programmes as well as eliminating brain loss to other countries.

The aggregate mean was 3.14 implying that the higher number of respondents agreed with the line statements on technological capabilities. In addition, the standard deviation was 1.26 implying that most responses varied from the aggregate mean. This is because the standard deviation was above 1.

This section contains descriptive analysis for technological capabilities.

Table 2: Technological Capabilities Descriptive Analysis

Code	Statement	SD (%)	D (%)	MA (%)	A (%)	SA (%)	Mean	Std. Dev
TC1	Continuous training programmes to employees boosts their ICT skills	12.8	1.6	3.2	17.6	64.9	4.20	1.36
	Having competent staff in the ICT department enhances internationalization	6.4	7.4	10.1	23.4	52.7	4.09	1.23
TC2	Having adequate ICT infrastructure aids in internationalization	10.1	3.2	5.9	18.1	62.8	4.20	1.30
TC3	Integration of the latest technologies into existing operations aids in internationalization	12.2	1.6	8	22.9	55.3	4.07	1.34
TC4	IT Capabilities enables the institution mitigate against contextual risks and limitations in the educational sector	10.1	2.7	5.9	28.7	52.7	4.11	1.26
TC5	The technological capability of the university enables the institution attain competitive advantage over other institutions	10.1	3.7	2.7	24.5	59	4.19	1.28
TC6	Advancements in communication technologies such as video conferencing, social media and online payments has enhanced the internationalization status of the university	5.3	11.2	3.7	23.4	56.4	4.14	1.23
TC7	Use of online platforms for teaching and research enhances internationalization	13.3	0.00	5.9	28.7	52.1	4.06	1.33
TC8	Adaptation to technological changes in the education system has enhanced internationalization	4.8	5.9	9.6	27.7	52.1	4.16	1.12
	Average						4.14	1.27

4.2 Factor Analysis

4.2.1 Factor Analysis for Internationalization Status

The communality for internationalization status in Table 3 below shows the communalities which represent the relation between the variable and the other variables.

a) Communalities for Internationalization Status

From the results, all the other statements had a factor loading above 0.4 and thus were all included in further analysis.

Table 3: Communalities for Internationalization Status

	Initial	Extraction
The university has active collaborations and linkages with universities in other countries	1	0.744
The university has communication channels with international partners	1	0.813
The university promotes study opportunities to enhance enrolment of international students	1	0.654
The university has international academic staff	1	0.409
The university has partnered with international professional bodies	1	0.662
The university has affiliations with international networks	1	0.457
The university holds international research conferences	1	0.613
Staff in the university have joint publications with international researchers	1	0.495

Principal component analysis with orthogonal (Varimax) rotation, was conducted to assess how the component loaded.

b) Total Variance for Internationalization Status

Principal component analysis with orthogonal (Varimax) rotation, was conducted to assess how the component loaded. Outcomes displayed that one component was rotated based on the eigenvalues higher than one measure. The total variance explained by the one component extracted is 60.579.

Table 4: Results of Total Variance for Internationalization Status

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.846	60.579	60.579	4.846	60.579	60.579
2	0.939	11.734	72.314			
3	0.718	8.976	81.29			
4	0.485	6.057	87.347			
5	0.374	4.674	92.021			
6	0.285	3.558	95.579			
7	0.212	2.655	98.234			
8	0.141	1.766	100			

c) Scree Plot for Internationalization Status

The study obtained scree test results are presented in Figure 1 here below. The aim of the scree plot for internationalization status was to determine which factors to drop from further analysis. According to the scree plot one component can be retained since the curve is leveling off after the first component. The scree plot thus confirms retaining one components as observed in the total variance explained with eigenvalues >1.

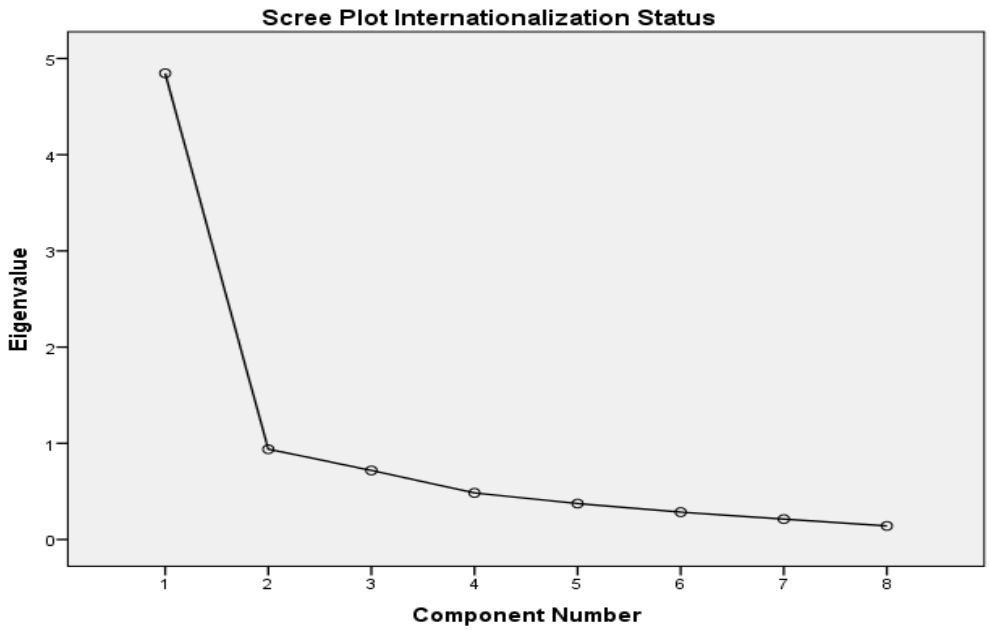

Figure 1: Scree Plot Internationalization Status

d) Rotated Component Matrix for Internationalization Status

The rotation of internationalization status components aided in reducing the number of factors on which variables were under investigations. The results in Table 5 below imply that all the financial capability measures have close relationship and therefore can easily be combined into one factor. Therefore, the study results had only one factor of financial capability which consisted of internationalization status statements.

Table 5: Results of Rotated Component Matrix for Internationalization Status

	Component
The university has communication channels with international partners	0.901
The university has active collaborations and linkages with universities in other countries	0.862
The university has partnered with international professional bodies	0.813
The university promotes study opportunities to enhance enrolment of international students	0.809
The university holds international research conferences	0.783
Staff in the university have joint publications with international researchers	0.704
The university has affiliations with international networks	0.676
The university has international academic staff	0.64

4.2.2 Factor Analysis for Technological Capability

Factor analysis was also conducted on statements regarding technological capability. The results were presented in the subsections below (a - d).

a) Test for Sampling Adequacy for Technological Capability

In order to check if the eight statements used to measure technological capability were correlated or factorable, test of sampling adequacy was done and the findings are displayed in Table 6.

Table 6: Sampling Adequacy for Technological Capability

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**0.897**
Bartlett's Test of Sphericity	Approx. Chi-Square	969.444
	Df	36
	Sig.	0.000

The findings in Table 6 show that the KMO value for technological capability was 0.897 which was way above the recommended minimum threshold of 0.5. This statistic implies that the statements used to measure technological capability were adequate for factorability.

Further, the results show that the Bartlett's Test of Sphericity give a Chi-square statistic of 969.444 with 36 degree of freedom and an association p-value of p=0.00. This statistic implies that the statements measuring technological capability are highly related and hence suitable for structure detection in the Principle Component Analysis. Based on the test results of sampling adequacy, this study confirmed that further analysis could be conducted on factor analysis on the predictor variable technological capability

b) Total Variance for Technological Capability

Principal component analysis with orthogonal (Varimax) rotation, was conducted to assess how the component loaded.

Table 7: Results of Total Variance for Technological Capability

Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	5.219	57.99	57.99	5.219	57.99	57.99
2	0.854	9.483	67.474			
3	0.772	8.58	76.053			
4	0.613	6.812	82.866			
5	0.444	4.931	87.797			
6	0.342	3.799	91.596			
7	0.29	3.222	94.817			
8	0.247	2.748	97.565			
9	0.219	2.435	100			

Table 7 shows that component one component had Eigen value of 5.219 and in total accounting for a total variance of 57.99%. The variance explained is a way above the minimum recommended threshold (TVE) of 50%. These results imply that the one component is adequate for measurement of technological capability as the total variance explained (TVE) is above the recommended 50% threshold (Tabachnick & Fidel, 2012, Kline, 2014).

c) Scree Plot for Technological Capability

The study obtained scree test results are presented in Figure 4.8 here below.

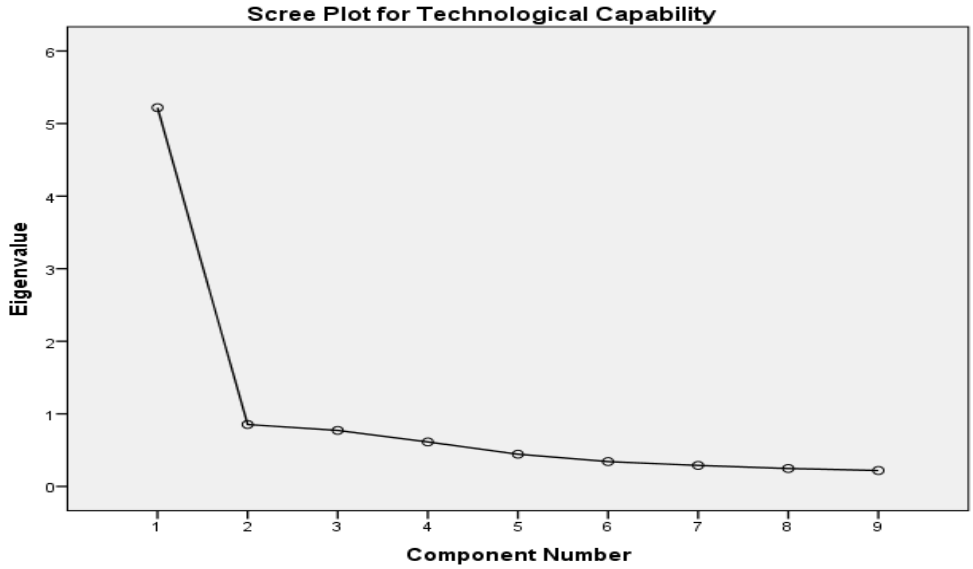

Figure 2: Scree Plot for Technological Capability

Figure 2 shows that from the first factor on, the line was almost flat. This means that each successive factor from the first factor is accounting for smaller and smaller amounts of the total variance.

d) Rotated Component Matrix for Technological Capability

The rotation of technological capability components aided in reducing the number of factors on which variables were under investigations.

Table 8: Results of Rotated Component Matrix for Technological Capability

	Component
Use of online platforms for teaching and research enhances internationalization	0.867
Integration of the latest technologies into existing operations aids in internationalization	0.841
Continuous training programmes to employees boosts their ICT skills	0.833
Having adequate ICT infrastructure aids in internationalization	0.831
The technological capability of the university enables the institution attain competitive advantage over other institutions	0.785
Having competent staff in the ICT department enhances internationalization	0.719
IT Capabilities enables the institution mitigate against contextual risks and limitations in the educational sector	0.701
Advancements in communication technologies such as video conferencing, social media and online payments has enhanced the internationalization status of the university	0.649
Adaptation to technological changes in the education system has enhanced internationalization	0.574

The findings in Table 8 show that, all drivers of technological capability had factor loadings between 0.574 and 0.867. All statements were therefore retained as they had a loading above the minimum threshold factor loading of 0.4 (Tabachnick & Fidell, 2012; Montgomery, Peck and Vining, 2001). Based on this analysis, technological capabilities were measured using the one construct and nine statements. Based on these analyses all statements selected for measurement of technological capabilities were retained.

4.3 Regression Results

Technological capabilities were regressed against internationalization status to explain the relationship between technological capability and internationalization status. Table 9 shows that the R was 0.681. This implies that technological capability had a strong correlation with internationalization of public universities in Kenya. In addition, the R square was 0.464. This infers that technological capabilities explain 46.4% of the variations in the dependent variable which is an internationalization status of public universities in Kenya. These outcomes agreed with Hagsten and Kotnik (2017) whose results showed a relationship that is positive between the capacities of ICT and the internationalization in HEIs.

Table 9: Model Fitness for Technological Capability and Internationalization Status

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.681a	0.464	0.461	0.73761

Table 10 shows that F statistic of 160.973 and the associated P-value of 0.000 which is a value less than a p value of 0.05. The calculated F statistic was therefore greater than the critical value which was 3.841. This implies that the technological capability have statistically significant effect on internationalization status at a 95% confidence level. These outcomes were consistent with Bruhn (2017) who showed a positive relationship between internationalization and digitalization.

Table 10: ANOVA for Technological Capability and Internationalization Status

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	87.581	1	87.581	160.973	.000b
Residual	101.197	186	0.544		
Total	188.778	187			

Regression of coefficients showed that technological capability and internationalization status of public universities had a positive and significant relationship (β=0.689, p=0.000). The results thus do indicate that an improvement in technological capability by one unit would lead to an improvement in internationalization status of public universities by 0.689 units. These findings were not consistent with Schubert et al. (2017) who stated that institutions with low technological competences will internationalize innovation when faced by uncertainty in technology while those with high competences will withdraw from international innovation.

$$IS = 1.036 + 0.689\ TC + \varepsilon$$

IS – Internationalization Status

TC – technological capability

ε - Error term

Table 11: Regression of Coefficient for Technological Capability

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.036	0.23		4.51	0.000
Technological Capability	0.689	0.054	0.681	12.688	0.000

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions of the Study

From the study findings technological capability had a statistically significant and positive influence on internationalization status. Therefore, the research concluded that technological capability had a significant and positive influence on internationalization status. In addition, firms that have higher technological expertise internationalized more frequently than firms with lower technological capabilities.

5.2 Recommendations of the Study

Research findings showed that there was need for improvement in the use of online platforms for teaching and research. The study therefore recommends that Public universities should therefore invest in upgrading of their online platforms for teaching and research so as to increase on their economies of scale.

REFERENCES

Aleksic-Maslac, K., & Magzan, M. (2012). ICT as a Tool for Building Social Capital in Higher Education. *Campus-Wide Information Systems*, *29*(4), 272-280.

Altbach, P.G., Reisberg, L., & Rumbley, L.E. (2009). *Trends in Global Higher Education: Tracking an Academic Revolution:* A Report Prepared for the UNESCO 2009 World Conference on Higher Education. Retrieved from: https://www.semanticscholar.org/paper/Trends-in-Global-Higher-Education%3A-Tracking-an-A-on-Altbach-Reisberg/f7bce8df3f0b4793abd33d4f61d9bab4b489dd71

Bruhn, E. (2017). Towards a Framework for Virtual Internationalization. *International Journal of E-Learning & Distance Education*, *32*(1), n1.

Curtis, S. (2013). Implementing Internationalisation. *Perspectives:Policy and Practice in Higher Education*, *17*(2), 42-47.

Dawei, G. (2008). Internationalization and entry strategy of enterprises: a case study of Chinese firm: Huawei. *Master programme in international marketing. School of Business and Engineering. University of Halmstad: Sweden*.

Fielden, J. (2011). *Getting to Grips with Internationalisation: Resources for UK higher Education Institutions*. Leadership Foundation for Higher Education.

Frasquet, Marta & Dawson, John & Descals, Alejandro. (2013). Post-entry internationalisation activity of retailers: An assessment of dynamic capabilities. *Management Decision, 51,* (7). 10.1108/MD-02-2013-0081.

Globalization Partners (2022). Kenya Work Visas and Permits. Retrieved from https://www.globalization-partners.com/globalpedia/kenya-employer-of-record/work-visas/#gref

Goodhue, D. L. (1995). Task-Technology Fit and Individual Performance. *MIS Quarterly*, *19*(2), 213–236. https://doi.org/10.2307/249689

Goodhue, D. L., & Thompson, R. L. (1995). Task-technology Fit and Individual Performance. *MIS quarterly*, 213-236.

Griffith, A.D. (2002). The Role of Communication Competencies in International Business Relationship Development. *Journal of World Business,* 37, 256-265

Hagsten, E., &Kotnik, P. (2017). ICT as Facilitator of Internationalisation in Small-and Medium-Sized Firms. *Small Business Economics*, *48*(2), 431-446.

Hawawini, G. (2016). Multicampus Internationalization of Higher Education Institutions. INSEAD Working Paper No. 2016/77/FIN, Available at SSRN: https://ssrn.com/abstract=2860633

Heiss, G. (2017). Influencing factors and the Effect of Organizational Capabilities on Internationalization Strategies for German SMEs in the Medtech Industry. *Management*, *5*(4), 263-277.

Hénard, F., &Mitterle, A. (2010). Governance and Quality Guidelines in Higher Education. *A Review of Governance Arrangements and Quality Assurance.Berlim: OECD*.

Hidayat, D., Pangaribuan, C., Okta, P., Bayu, P. & Iwan, I. (2021). Contemporary Studies of Task-Technology Fit: A Review of the Literature. *International Conference on Information Management and Technology (ICIMTech)*, 309-313, doi: 10.1109/ICIMTech53080.2021.9535028.

Itaaga, N., Musoke, M.K., & Mugagga, A.M. (2013). Internationalization and Regionalization of Higher Education in Uganda: A Descriptive Analysis. *Global Journal of Human-Social Science, 13*(5)

Jared, D., Orwa, G., &Oloko, M. (2017). The Relationship between Dynamic ICT Capabilities and Competitive Advantage of Technical, Vocational and Entrepreneurship Training Institutions in Western Kenya Region.

Jayashree, S., & Al-Marwai, S. A. (2010). Internationalization strategies adopted by Malaysian companies. *Journal of Applied Sciences*, *10*(4), 305-311.

Kathae, L. M. (2015). *The Adoption of Internationalization Strategy at University of Nairobi Programmes in Kenya*. MBA Thesis. University of Nairobi.

Kiiru, G.W. (2015). Dynamic capabilities, strategic orientation and competitive advantage of small and medium-retail enterprises in Kenya. *Doctoral Thesis, Jomo Kenyataa University of Agriculture and Technology.*

Knight, J. (2013). The Changing Landscape of Higher Education Internationalisation - For Better or Worse. *Perspectives: Policy and Practice in Higher Education, 17*(3), 84-90.

Knight. J & Sehoole.C. (Eds.) (2013), *Internationalisation of African Higher Education.* Retrieved from https://link.springer.com/

Lin, H., Xiao, H., Tu L., Wen-Hsien, H., Yunbao, X., Tien-Chih, H., Lihua, Z., Liang, Z. (2020). Task-technology fit analysis of social media use for marketing in the tourism and hospitality social media use for marketing in the tourism and hospitality industry. *International Journal of Contemporary Hospitality Management*, *32*, (8), 2677-2715.

Marikyan, D. & Papagiannidis, S. (2021) *Unified Theory of Acceptance and Use of Technology: A review*. In S. Papagiannidis (Ed), TheoryHub Book. http://open.ncl.ac.uk

Mertens, D. M. (2015). Philosophy in mixed methods teaching: The transformative paradigm as illustration. *International Journal of Multiple Research Approaches*, *4*(1), 9-18.

Mihut, G., Altbach, P. G., &Salmi, J. (2016). International Advisory Councils and Internationalization of Governance: a Qualitative Analysis. *European Journal of Higher Education*, *6*(4), 328-342.

Mshighadi, M. B. (2017). Influence of Corporate Governance on Internationalization Of Commercial Banks In Kenya.

Musuva, A. M., Ogutu, M. O., Awino, Z. B., &Yabs, J. (2013). The Influence of Firm Capabilities on the Internationalisation and Performance

Njuguna, F. W., &Itegi, F. M. (2013). Cross-border higher education in Africa: The Kenyan experience. *Journal of Emerging Trends in Educational Research and Policy Studies*, *4*(5), 752-759.

Republic of Kenya (2007). Kenya Vision 2030. Nairobi: Ministry of Planning, National Development and Vision 2030.

Republic of Kenya (2008). Kenya Vision 2030: First Medium Term Plan 2008-2012. Nairobi: Ministry of Planning, National Development and Vision 2020, Nairobi.

Republic of Kenya (2020). The Big Four Agenda: Empowering the Nation.Retrieved from https://big4.delivery.go.ke/

Sanyal, B. C., & Johnstone, D. B. (2011). International trends in the public and private financing of higher education. *Prospects, 41*(1), 157.

Schubert, T., Baier, E., & Rammer, C. (2017). *Firm Capabilities, Technological Dynamism and Innovation Internationalisation–A Behavioural Approach* (No. 2017/13).Lund University, CIRCLE-Center for Innovation, Research and Competences in the Learning Economy.

Sehoole, C., & Knight, J. (Eds.). (2013). *Internationalisation of African Higher Education:* Towards achieving the MDGs. Springer Science & Business Media.

The Times Higher Education (2023). *World University Ranking*.

Zou, H., Liu, X., &Ghauri, P. (2016). Technology Capability and the Internationalization Strategies of New Ventures. *Organizations and Markets in Emerging Economies*, *1*(1), 100-119.