Business & Social Science
IJRBS

Research in Business & Social Science

IJRBS VOL 8 NO 6 ISSN: 2147-4478

Available online at www.ssbfnnet.com
Journal homepage: <https://www.ssbfnnet.com/ojs/index.php/ijrbs>

Management control system, organizational processes and institutional performance of technical training institutions in Kenya

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ARTICLE INFO

Article history:

Received 10 September 2019

Received in revis. form 10 Oct. 2019

Accepted 15 October 2019

Keywords:

Organizational Processes

Institutional Performance

Management Control System

JEL Classification:

O22

ABSTRACT

The purpose of this study was to determine the Moderating Effect of Management Control System (MCS) in the relationship between Organizational Processes and Institutional Performance of Technical Training Institutions (TTIs) in Kenya. The study was a cross-sectional survey in nature and used explanatory research design with the population obtained from the TTIs that were registered with the Ministry of Education, Science and Technology (MOEST) and Technical and Vocational Education and Training Authority (TVETA) by 2015. The main research instrument was a closed-ended questionnaire. The hypotheses in this study were tested using Hierarchical Moderated Multiple Regression (MMR) and the study found that Organizational Processes had a significant positive influence on the institutional performance of TTIs in Kenya. The study findings indicated that the estimated coefficient was 0.555 indicating that Organizational Processes had a significant influence on institutional performance. Further, the study found evidence that (i) MCS moderates the relationship between organizational processes and institutional performance, (ii) MCS had a moderating effect on the relationship between organizational processes and institutional performance of Technical Training Institutions (TTIs) in Kenya.

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Introduction

The major purpose of higher education institutions is to contribute to the growth of the country's economy by providing skilled human capital (Akareem & Hossain, 2016; Fortino, 2013) and not for specific commercial objectives. Existing literature indicates that more than 80 percent of the youth are engaged in the informal sector (Johanson & Adams 2004) and therefore King and McGrath (2004) emphasize the important role played by Technical Training Institutions (TTIs) that are normally under the umbrella of Technical Vocational Education and Training (TVET) in producing skilled labour for the industry. King and McGrath (2004) have argued that with TTIs being more diverse because of the changes in the labour market, they should be able to integrate the youth efficiently into the working world. Given the prevailing economic trend, United Nations Educational, Scientific and Cultural Organization (UNESCO) (2014) has identified the two major objectives of TTIs as the urgent need to train the workforce for self-employment and the necessity to raise the productivity of the private sector. Considering the expensive nature of TTIs as a form of education, it is imperative that an expanded system which may include partnering with stake holders to provide adequate facilities and equipment will be required to create an effective system. Gleeson (2010) illustrates, social partnership agreement between the key stakeholders is an absolute central factor in finding a lasting solution to the quality issues to improve performance of institutions.

Organizational Processes are concerned with the activity/operation system which is the heart of any institution especially in the service industry (Harrison, 2002). It involves creating a functioning Organizational structure that is not excessively blotted, management of meager resources and supply and use of infrastructure (Afuah & Tucci 2000). Further, an activity structure system indicates how an institution performs the selected activities, and when it performs them and addresses the 'how' of providing

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<https://doi.org/10.20525/ijrbs.v8i6.539>

customers and end-users with products and services thereby addressing the underlying logic of how the institution delivers value to its customers at an appropriate cost.

The study on Organizational Processes is an important topic for strategic management research because Organizational Processes affect institution's possibilities for value creation and value capture (Amit & Zott 2001; Oseni & Pollitt, 2016). Kenya and other emerging market States such as South Korea, Malaysia and Singapore were at economic level a few years back. The application of the Organizational Processes in other countries seems to be working and consequently the economy of those countries has grown tremendously. Since 1970, Malaysia and South Korea have recorded an average cumulative economic growth of 6.1% and 7.3% respectively per year which is higher than the economic growth of some advanced nations compared to Kenya which had an average of 3.5% per year during the same period (OECD (2018). Malaysia has also maintained full employment of her graduates since the 1990s as compared to Kenya whose unemployment rate is at 40% and rising steadily (Human Development Index of Kenya (HDI) 2017). Graduates that do not exhibit the requisite skills in the industry as a result of a poorly implemented Organizational Processes make the TTIs unpopular, escalate the cost of living, lead to low living standards and consequently make technical education less competitive (Murgor 2013a). The objective of the study was to investigate the moderating effect of Management Control System (MCS) on the Organizational Processes and Institutional Performance of TTIs in Kenya. The hypothesis guiding the study was 'Management control system (MCS) does not moderate on the relationship between Organizational Processes and institutional performance of TTIs in Kenya.'

Literature Review

Systems Theory displays an institution as an entity which comprises of individual organizational elements or subsystems (herein referred to as processes) which should be studied carefully and examined in its environment to design a control system. Process indicators are those which include the means used to deliver educational programmes, activities and services within the institutional environment (Arora & Kaur, 2015; Sasongko, 2016). These measurements look at how the system operates within its particular context, accounting for institutional diversity, a common confounding factor in intra-institutional comparison. There are frameworks showing that companies are reacting in a changing competitive environment (Peljhan, 2007) by making serious change decisions. When influencing the decision making, the system supports the process of planning and control (Machado 2013). Also, it influences behavior to ensure that it is congruent with the organization's goals.

The goal of systems theory which was used to evaluate Organizational Processes in this study is systematically discovering a system's dynamics, constraints, conditions and elucidating principles which include funding, infrastructure, and Organization structure that can be discerned and applied to systems at every level of nesting, and in every field for achieving optimized results in every part of the Organization (Bevan, 2012). Process indicators are those which include the means used to deliver quality educational programmes, activities and services within the institutional environment (Arora & Kaur, 2015; Sasongko, 2016). Process indicators allow the collection of qualitative information on aspects of teaching and learning quality; such as policies and practices related to learning and teaching: quality of curriculum and the assessment of student learning, and quality of facilities, funding, services and technology (Chalmers et al (2008).

The literature reviewed defined Institutional Performance (IP) as the ability of the institution to consistently train well rounded graduates with practical, theoretical and soft skills for the sake of key stakeholders who include students, parents, the community, the Government, employers and industry at large (Hannula, 2018; Glassman & Opengart, 2016). The major purpose of higher education institutions is to contribute to the growth of the country's economy by providing skilled human capital (Akareem & Hossain, 2016; Fortino, 2013) and not for specific commercial objectives. This scenario makes it quite difficult to quantitatively and monetarily evaluate performance of training institutions which do not encompass objective evaluation of organization's products and services and overall financial and market performance (Mose, 2014). Non-financial measures are therefore the performance measurements proposed for training institutions considering that their context is of non-profit generating Organizations (Hoque, 2014; Grigoroudis, Orfanoudaki, & Zopounidis, 2012). In this study the Balance Scorecard (Kaplan and Norton 2001) was adopted.

Institutional Performance is about the comparison of achievement against some pre-determined standard (Richard, Devinney, Yip, & Johnson, 2009) set by the institution to evaluate the training model and can be measured at two levels, at a certain period along the way otherwise referred to as monitoring/formative evaluation or at the end-stage also referred to as end stage/summative evaluation ((Tessmer, 2013; Black, Harrison, Lee, Marshall, & William, 2003). In TVET institutions, continuous self-examination by institutions focuses on the institution's contribution to students' intellectual and personal development. Furthermore, in order to achieve this new service development, areas such as quality assurance (distribution of grades awarded, exit exam or student competency evaluation), internship program (number of internships available, number of companies available, student evaluation), cost efficiency (faculty-to-student ratio, educational expenses per student and unique or specialized curriculum) are be closely monitored (Amadi, 2014).

Organizational processes are an important component of performance and such processes should not only be adequate but also efficiently organised (Ho, Su, & Wu, 2014). The basic of the Organizational Processes in TTIs include finance, procurement, teaching and learning which contribute to the performance of the institutions. The success of the Organizational Processes relies heavily on a well prepared Organization structure free of bias. Such a structure will need to be supported by a well-oiled funding mechanism that

will prepare the required infrastructure that will yield the expected institutional performance. Martin, Kolomitro, and Lam (2013) aver that an Organizational Process defines a series of activities, which will yield a new product or service in such a way that there is net value created throughout the various activities. This is crucial because if there is no net creation of value, the other departments involved in the set of activities will not participate. Secondly, a process captures value from a portion of those activities for the Organization developing and operating it. This is equally critical for an Organization that cannot earn value from some portion of its activities and cannot sustain those activities over time. Martin, Kolomitro and Lam (2013) further argue that the processes that must earn value in the training and development programs are mainly: the process of identification of training needs based on the needs of the organization or the needs of the professionals, designing and developing the training programs accordingly, conducting the training and development programme and evaluating the training programmes. The Organizational Processes for this study were conceptualized through three internal interlocking non-monetary assumptions of the systems theory about Organization structure, funding and infrastructure as contained in the systems.

Organizational processes are guided by the systems theory which is an interdisciplinary study of systems. A system is an entity with interrelated and interdependent parts; it is defined by its boundaries and it is more than the sum of its parts (subsystem are synergistic) (Stichweh, 2011). Changing one part of the system affects other parts and the whole system, with predictable patterns of behavior. Positive growth and adaptation of a system depend upon how well the system is adjusted with its environment, and systems often exist to accomplish a common purpose (a work function) that also aids in the maintenance of the system or the operations may result in system failure. Strier, (2016) avers that an activity structure refers to the nature of the services that learning institutions provide to customers, and the activities that they perform to deliver those services. Such principles and activities may relate to the Organization structure, funding and infrastructure (Bevan, 2012). Borrowing from the systems theory, a system is a set of distinct parts that form a complex whole (Montuori 2011). Such is the context of this study where the institution is sub-divided into administrative parts which include: management boards, research and development, administration, finance and planning, teaching and learning (Ho et al., 2014). The creation of components in the whole makes it easy to govern by decentralising power; enhancing communication and supervision and preventing bottle-necks and buck passing (Massa, Tucci, & Afuah, 2017). Process indicators are those which include the means used to deliver quality educational programmes, activities and services within the institutional environment (Arora & Kaur, 2015) Sasongko, 2016). Process indicators allow the collection of qualitative information on aspects of teaching and learning quality; such as policies and practices related to learning and teaching: quality of curriculum and the assessment of student learning, and quality of facilities, funding, services and technology (Chalmers, Lee, & Walker, 2008). Ruben, (2004) states that students are affected not only by the teaching environment but also by the learning environment, which includes facilities, accommodation, physical environment, policies and procedures, and more importantly, interpersonal relations and communication and from every encounter and experience. Moreover the faculty, staff and administrators have to set good examples by their deeds and recognize that everyone in an institution is a teacher who should set good examples by their deeds as stipulated in the system theory. Processes in an institution take up the bulk of the assigned budget and thus care should be taken to ensure a high degree of efficiency to prevent losses

Management Control System (MCS)' mission is to communicate strategic milestones and to give feedback of the performance (Kaplan & Norton, 2008) and thus contributes to the creation of value. Management Control System (MCS) means the systematic policy and control process that is used to influence the behavior and activities of management for the purpose of achieving the organization goal (Marginson, 2002). It has been shown to be effective in informing further initiatives and policy decisions, leading to quality enhancement. Process measures are generally considered by institutions and their staff and students to provide better measures of the quality of teaching and learning, as they are contextualised in the institution. The MCS is conceptualized through the precepts by Charmer et al (2008) of curriculum, benchmarking, budgeting and continuous improvement (kaizen). According to Simons et al., (2000), MCS is the formal, information-based routine and procedure managers use to maintain or alter patterns in Organizational activities. In particular, what is ignored by much of the research is the potential for MCS to be used much more actively as a tool for formulating and implementing changes in strategic direction, or what Simons et al (2000) refers to as the interactive use of MCS. A good MCS should aim at achieving Organization success in attaining its purpose. This requires that the goals and objectives are well communicated and the employees are confident about performing the tasks as well. It is not possible to attain perfect control since employee behaviour is not stable however an Organization that is future oriented, has clear objectives and maintains minimum control losses is on the path to success. In view of the dynamic nature of the business environment, it is the function of MCS to provide up-to-date information that helps the managers in making proper decisions and to motivate these managers to establish Organizational change beneficial to the firm.

Another important role of MCS is signaling, both in the internal and external environment. By electing key performance measurements, the organization signals to employees the importance of these strategic aspects. In the external front, the signal to the stakeholders who are part of the organizational environment, with the disclosure of non-financial information regarding performance, such as innovation, operations, levels of customer satisfaction, timely delivery of service, reliable delivery of service, dependable production activities, quality of service or goods, efficient monitoring of operations and motivation among others (Machado 2013)

The key variables in the conceptual framework in this study were categorized as independent variable, moderator and dependent variable. Mugenda, (2008) explains that the independent variables are also called predictor variables because they predict the amount of variable of variation that occurs in another variable while dependent variable, also called criterion variable, is a variable that is

influenced or changed by another variable. The dependent variable is the variable that the researcher wishes to explain. A moderator variable is a variable that alters the strength of the causal relationship (Frazier, Tix, & Barron, 2004). In the study, it is hypothesized that management control system moderates in the relationship between Organizational Processes and institutional performance.

Figure 1: Conceptual Framework

Empirical literature for the looked at the study on ‘Internet business models and strategies: text and cases’, Afuah and Tucci (2000) suggested that a model is a system, and how well the system works is not only a function of the type of components, but also a function of the relationships among the components (Afuah & Tucci 2000). Thus, if the value that a firm offers its customers is low cost, then the activities that it performs should reflect that. The TTIs should concentrate on ensuring that the training model provided by the Government is functioning to its best in order to produce the expected results. The concern in this study therefore is to investigate why there seems to be a failure in the model since the anticipated results are not being realised. MCS models include an integrated systems approach by Lowe (Cooper, 2014) who laid emphasis on ideas to management control which require a great deal of development before they become operational. The researcher highlights the following characteristics which help to generate a healthy planning and control system: Organization objectives which are differentiated from individual goals, examine compulsive goals generated by sub-unit managers, exploring the situations in business that are uncertain, insist on economical processes, financial accounting techniques as used to judge the quality of management accounting systems and minimize the dominance of accounting as business control systems. Monden (2011)) in the study “Toyota production system: An integrated approach to just-in-time” describes a Kanban system as a means to achieve Just-In-Time (JIT) production. It works on the basis that each process on a production line pulls just the number and type of components the process requires, at just the right time. The mechanism used is a Kanban card. This is usually a physical card but other devices can be used. Two kinds of Kanban cards are mainly used: a **Withdrawal Kanban** which specifies the kind and quantity of product which a manufacturing process should withdraw from a preceding process and a **Production-ordering Kanban** which specifies the kind and quantity of product which the preceding process must produce.

Research and Methodology

This study used an explanatory research design. This research design was suitable for this study because it focused on why questions. Similar questions could be raised on the Organizational Processes e.g. Why there exists disconnect between the skill levels of TTI graduates and the world of work? This research design involved collecting information that enabled the hunch that MCS moderates the relationship between the Organizational Processes and institutional performance to have a causal explanation (Clark & Creswell, 2011). The study adopted the positivism research philosophy which emphasized a value-free (objective) view of science as explained by Bryman and Bell (2015) and it is frequently associated with quantitative methods that rely on the researchers’ ability to gather numerical evidence of the phenomena under investigation and analyse it to answer the research questions (Veal, 2005).

Table 1: Target Population Summary

Number of Institutions	Target Population	Sample Size
59	379	194

Source: Research Study, 2019

The target population was the 379 heads of academic departments (HODs) and it was obtained from the 59 TTIs in Kenya which were registered with both MOEST and Technical and Vocational Education and Training Authority (TVETA) by 2015. Though the institutions have increased in number to date, the others were not considered since they were new and did not exist at the time of study. The 379 HODs were identified from a list of the 59 institutions as shown in table 3.1. The support staff was excluded from the

population since some concepts of study were not be familiar to them. The students were also not considered as they were treated as external customers were recipients of the services generated from TTIs and may therefore express a degree of bias on the results. A sample of 194 was obtained using Yamane statistical technique provided by Amugune, (2014) from the target population of 379 HODs obtained from the 59 institutions. Stratified method of sample selection was used for getting a sample since the target population was heterogeneous (Blumberg & Luke, 2010) due to location and challenges in different parts of the country as a result of diversity in geographical, social and economic conditions within the country. Random sampling was used to identify the HODs in each institution under study.

This study relied on primary data because it is widely used in research, straight-forward and produces original and authentic results compared to secondary data which is second hand and may require modification to suit the study (Clark & Creswell 2011). A closed ended research instrument was used to collect data. In essence, the questions the researchers asked were tailored to elicit the data that helped with the study. The heads of academic departments (HODs) from the 59 TTIs provided the requisite data for this study. A total of 194 questionnaires were used to collect data from 59 technical training institutions in Kenya targeting the heads of academic departments. The total number of questionnaires returned was 149 which translated to 76.8% response rate. This response rate was considered adequate and in line with proposal by Cohen (2008). A response rate of below 60% was considered poor while that between 60% and 80% was adequate by Cohen (2008). The non-responses in in this study were ignored considering that there was no response bias and thus imputation which is replacement of values to fill in for a missing values (Chen & Haziza, 2019) was not required. The possibility of Type I or type II errors or over and under estimation of significance or effect size(s) regression assumptions are tested and according to (Belsley, Kuh, & Welsch, 2005; Pedhazur, E. J., 1997) and Osborne et al (2001), knowledge and understanding of the situations in violations of assumptions leads to serious biases and though they are of little consequence, are essential to meaningful data analysis. Thus the assumptions of normality, Heteroscedasticity and autocorrelation, Multicollinearity, common method variance (CMV), Non-Response Bias (NRB) and outliers were tested. None of the assumptions had been violated and thus the data was suitable for further analyses. A Pilot Test was conducted to preliminarily assess the proposed instruments and modify it to suit the context of this present study in areas such as the clarity of the research instruments; items that may have confused respondents and to identify sensitive or annoying items (Cordeiro & Lemonte, 2011). This study uses the academic HODs from TTIs that are registered by MOEST but are not recognized by TVETA. Only 10% of the entire sample size (194 respondents) is used in the pilot study (Mugenda & Mugenda, 2003) which translates to nineteen (19) respondents. The desirability of a pilot study is to ensure that the research instrument as a whole functions well (Bryman, 2004).

Table 2: Instrument reliability

Construct	Cronbach alpha	Number of Items
Institutional Leadership (X1)	0.844	6

Source: Research Study, 2019

To ensure reliability, a pre-test of the questionnaire was done to check the clarity of items and consistency in the meaning of items to all respondents. This study also used the internal consistency technique to check on reliability of the questionnaire. The most common internal consistency measure which generates a coefficient value is known as Cronbach's alpha (α) (Waithaka & Ngugi, 2012). Internal consistency indicates the extent to which a set of items can be treated as measuring a single latent variable. Cronbach alpha value of 0.7 was recommended cut-off point of reliabilities for this study. The study yielded the results shown in table 3.2 where all the study constructs had reliability measures above 0.7 from all the items used to measure them. This further supported the reliability of the hypothesized indicators to measure the constructs.

In this study the questionnaire items were checked for clarity of words and the accuracy of statements in relation to research items through discussions which ensured validity of constructs. Validity of the research instrument is the accuracy and meaningfulness of inferences based on the results. Best, and Kahn, (2006) suggest that the validity of an instrument is asking the right questions framed from an ambiguous way. A pre-test of the questionnaires was also done to ensure that the items were clearly stated and have adequate content to ensure content validity. This study tested both construct validity and content validity where Exploratory Factor Analysis (EFA) was used to content validity by assessing the underlying structure of the constructs studied because it is an unrestricted model which considers a simple structure where the latent factors are set to explain as much variance as possible for a set of observed variables/ indicators (Kaplan & Norton, 2015). Each section assessed information for a specific objective in relation to the conceptual framework and tested through Exploratory Factor Analysis (EFA). Confirmatory Factor Analysis (CFA) was also carried out to assess uni-dimensionality of the constructs. CFA is a restricted analysis based on the hypothesized model. The CFA results were used to assess construct validity by assessing convergent and discriminant validity. According to Kline (2014), observed variables (indicators) that measure the same construct show convergent validity if their inter-correlations are at least moderate in magnitude and a set of observed variables measuring different constructs show discriminant validity if their inter-correlations are not too high.

Data Analysis and Results

There are no agreed principles of what constitute large amount of missing data. However, researchers suggested that less 10% of missing data on a particular variable or response is not large and does not constitutes a large amount of missing data (J. Cohen,

Cohen, West, & Aiken, 2003). Those respondents that had more than 10% missing responses in any of the whole questions asked were candidates for deletion. Tabachnick, Fidell, and Ullman (2007) suggests that cases that have less than 10% missing responses could be allowed for further analysis subject to dealing with missing responses empirically. The study examined the missing responses and concluded that they were less than 10%, independent and missing completely at random. The study did impute for the missing values by replacing it using median as one element of measures of central tendency.

Table 3: KMO and Bartlett's test of sampling adequacy

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.890
Bartlett's Test of Sphericity	Approx. Chi-Square	1714.317
	df	300
	Sig.	.000

a. Dependent Variable: Y_ Institutional Performance

The results of the Exploratory Factor Analysis (EFA) also include KMO and Bartlett's tests which were carried out to explore sampling adequacy and that the data is suitable for factor analysis (Burton & Mazerolle, 2011). From table 4.1, the results showed a KMO of 0.89 which is adequate for analysing factor analysis outputs. Tabachnick and Fidell, (2001) considered a KMO value of 0.5 suitable for factor analysis while Bearden et al. (2004) considered the adequate KMO measure to be above 0.60 - 0.70 which are all lower than the 0.89 result from this study. The adequacy is also examined by a Bartlett's test which is meant to have a significant chi-square statistic (Tabachnick & Fidell, 2001). The results from this study show a Bartlett's statistic of 1714.317 with a p-value of 0.000 which is less than 0.05 implying that the item correlation matrix is not an identity matrix and thus the data is adequate and suitable for factor analysis. The factor loadings matrix results show that all the indicators considered at least load a construct by a loading more than 0.4 and thus none of them was expunged. An observed variable is said to belong to the construct if it loads highest and above 0.4. The factor loading matrix shows that the results of the EFA echo the conceptual model where the indicators tend to measure similar constructs as in the hypothesized model. Indicators hypothesized to belong to the same construct are highly correlated to each other. This is also reflected by the Confirmatory Factor Analysis (CFA) carried out to assess uni-dimensionality of the constructs.

CFA is a restricted analysis based on the hypothesized model. The CFA results were used to assess construct validity by assessing convergent and discriminant validity. According to Kline (2014), observed variables (indicators) that measure the same construct show convergent validity if their inter-correlations are at least moderate in magnitude and a set of observed variables measuring different constructs show discriminant validity if their inter-correlations are not too high. This study used the Criterion by Fornell and Larcker (1981) to assess convergent validity where the average shared variances are extracted (AVEs) for the constructs following a CFA. The AVEs are measures of the level of variance captured by a construct against the level due to the measurement error and are said to be very good if above 0.7 and acceptable if above 0.5. All the AVEs for the study constructs were all above 0.5 with some above 0.7 implying acceptable convergent validity. For discriminant validity, this study explored the squared multiple correlations in comparison to the extracted AVEs as also proposed by the Fornell-Larcker testing system (1981). The squared multiple correlations reflect the variance that the indicators belonging to a construct share with other constructs which should be low. All the AVEs are larger than the relative squared multiple correlation implying that the data and thus the instrument exhibit discriminant validity. Since both convergent and discriminant validity were found to be exhibited, it was concluded that the instrument exhibited construct validity and that the study constructs exhibited uni-dimensionality.

Table 4: Institutional Processes

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
Teaching and learning materials are provided on time	7.4%	15.4%	18.8%	40.9%	17.4%	3.46	1.161
Funding for programs is adequate	8.1%	19.5%	23.5%	34.9%	14.1%	3.28	1.163
Teaching facilities are adequate	6.04%	22.1%	24.8%	32.2%	14.8%	3.28	1.140
The institution has a maintenance program	3.4%	20.1%	23.5%	34.2%	18.8%	3.45	1.107
The entire system (institution departments) is coordinated	4.7%	13.4%	17.5%	35.6%	28.9%	3.7	1.155
Roles are not duplicated	6.04%	17.5%	17.5%	40.3%	18.8%	3.48	1.156

a. Dependent Variable: Y_ Institutional Performance

Table 4.3 shows the results of the 6 indicators used to measure processes and Organization. For this construct, the research first sought to develop the extent to which respondents agreed or disagreed with the above statements regarding Organizational Processes in Technical Training Institutes in Kenya. Respondents who showed a level of agreement to the question whether teaching and learning materials were on time were 40.9% and those who strongly agreed were 17.4%. There were 7.4% of respondents who showed strong disagreement and 15.4% who disagreed with the statement that teaching and learning materials were on time. Other respondents, 18.8%, were neutral to the question. The overall mean of 3.46 implied that the respondents agreed that teaching and learning materials were on time. The question of whether funding for programs was adequate was agreed to by most of the respondents (34.9%) with 14.1% of them showing strong agreement. The results also showed that 8.1% strongly disagreed with the statement while 19.5% disagreed that funding for programs was adequate. The remaining 23.5% of respondents were neutral to the question. The estimated mean from the results, that is 3.28, which is above 3, clearly imply respondents were in agreement that funding for programs was adequate.

From the results, majority of the respondents (32.2%) agreed that teaching facilities were adequate and 14.8% of them strongly agreed. The findings show that respondents who strongly disagreed and disagreed with this study question were 6.04% and 22.1% respectively. The respondents that showed neutrality to the statement were 24.8%. The resultant average of 3.28 vividly showed that the respondents agreed that teaching facilities were adequate. The study established that 34.2% of the respondents agreed that the institution had a maintenance program while 18.8% strongly agreed. It was found out that 3.4% and 20.1% of the respondents showed strong disagreement and disagreement respectively to the question whether the institution had a maintenance program. However, 23.5% of respondents were neutral to the statement and the overall mean of 3.45 showed that these respondents agreed that the institution had a maintenance program.

The research findings indicate that 35.6% of respondents agreed that the entire system (institution departments) was coordinated and those who strongly agreed were 28.9%. Results show that 4.7% strongly disagreed to the statement and 13.4% disagreed. There were 17.5% of respondents who what neutral to the question whether the entire system was coordinated. The approximated mean of 3.7 imply that respondents were in agreement that the entire system (institution departments) was coordinated. Respondents indicated the extent to which they agreed that roles in their institutions were not duplicated. The study results established that 40.3% of the respondents agreed that roles were not duplicated with 18.8% strongly agreeing to that statement. On the other hand, 6.04% of respondents strongly disagreed with 17.5% disagreeing with the claim that roles were not duplicated. The remaining 17.5% of respondents were neutral to the question. The mean 3.48 indicates that the respondents agreed to the fact that roles were not duplicated in the institutions.

Table 5: Model Summary; Institutional Processes and Performance model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.555a	0.308	0.303	0.835

a. Predictors: (Constant), X2_Institutional Processes and Organization Systems

The R and the R-square for this model were 0.555 and 0.308 respectively as shown in the summary statistics presented in table 5 The explanatory power of the model as reflected by the R-square is 30.8%. This implies that 30.8% of the variation in institutional performance in this model is explained by variation in Organizational Processes while the remaining 69.2% is explained by other factors that are not included in this one predictor model.

Table 6: Model coefficients; Institutional Processes and Institutional Performance model

Variable	B	Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper
(Constant)	6.924E-017	.003	.069	1.000	-.130	.149
X2_Processes	.555	-.001	.060	.001	.424	.668

a. Dependent Variable: Y_Institutional Performance

The coefficient estimates of the model fitted are shown in table 65. From the table, the constant term to this model is insignificant at 0.05 level of significance based on the p-value of 1.00 which is greater than 0.05. The estimated coefficient of Organizational Processes is however significant with a p-value of 0.001 which is less than 0.05. Improving the level of Organizational Processes in the Organization by one unit is expected to increase institutional performance by 0.555. Based on the results from this model, hypothesis H₀₂ was rejected since the p-value of the coefficient estimate of Organizational Processes (0.001) was found to be less than the 0.05 level of significance. It was therefore concluded that Organizational Processes has a significant effect on institutional performance of TTIs in Kenya. The equation generated from the model also passes through the origin and is given below

$$Y = .555X_2 + \epsilon$$

Table 7: Model Summary; MMR model on processes

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. Change	F
1	.555a	0.308	0.303	0.835	0.308	65.376	1	147	0.000	
2	.756b	0.571	0.565	0.660	0.263	89.466	1	146	0.000	
3	.756c	0.572	0.563	0.661	0.01	0.246	1	145	0.021	

a. Dependent Variable: Y_ Institutional Performance

A hierarchical regression model was also fitted as an extension to the bivariate model between Organizational Processes and institutional performance to assess the moderating effect of MCS on the bivariate relationship. As shown in table 7, the change in R-square in model 3 attributed to inclusion of the interaction terms in the model was found to be 0.001. The p-value of the change in F is 0.021 which is less than 0.05 implying a significant change in R-square which is an implication of significant moderating effect.

Table 8: Model coefficients; MMR model on processes

Model	Variable	B	Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
						Lower	Upper
1	(Constant)	6.924E-017	.003	.069	1.000	-.130	.149
	X2_Processes	.555	-.001	.060	.001	.424	.668
2	(Constant)	7.657E-017	.004	.054	1.000	-.102	.110
	X2_Processes	.049	-.001	.080	.564	-.108	.200
	Z_Management Control System	.720	-.001	.078	.001	.554	.866
3	(Constant)	.018	.008	.069	.797	-.111	.153
	X2_Processes	.049	-.001	.081	.565	-.111	.206
	Z_Management Control System	.709	-.003	.085	.001	.524	.863
	X2 interaction Z	0.731	-.006	.044	.038	-.123	.049

a. Dependent Variable: Y_ Institutional Performance

The coefficient estimates of the hierarchical regression model are presented in table 8 Model 2 shows that the added predictor MCS has a significant coefficient estimate ($\beta = .720$, $SE = .078$, $p\text{-value} = 0.001$). The added coefficient of the interaction term between MCS and processes was found to have a significant coefficient estimate ($\beta = 0.731$, $SE = 0.044$, $p\text{-value} = 0.038$). The p-value of the change in R-square is less than the 0.05 level of significance. This implies that the inclusion of the interaction terms between the Organizational Processes and MCS has a significant change in the model and hence a significant moderating effect. The study thus rejected the null hypothesis and drew a conclusion that MCS has a significant moderating effect on the relationship between the Organizational Processes and institutional performance of TTIs in Kenya. The equation generated from the model is given by:

$$Y = 0.018 + 0.049X_2 + 0.709X_2 + Z + 0.731 Z * X_2 + \epsilon$$

Where, Y was the institutional performance of TTIs, X_2 were the Organizational Processes, Z observed scores and the interaction equations between the independent variables (X) and moderator variable (Z) with an intersection ($X_2 * Z$). The ϵ was the error term component.

Figure 2: MMR slopes; Organizational Process and Institutional Performance

Figure 2 shows a graphical presentation of the significant positive moderating effect. The lines showing the influence of Organizational Processes on institutional performance have decreasing and increasing functions varying at different levels of MCS. At low MCS, the changes in Organizational Processes in fact have a negative influence on performance reflected by the decreasing slope. Increasing the levels of MCS increases the slopes and in fact reverses the direction of the line implying that higher levels of MCS increases the level of influence that Organizational Processes has on institutional performance.

Conclusions

The study recommends proper coordination of Organizational processes through a balanced Organization structure with greater emphasis on MCS to realise significant contribution and enhanced effectiveness. Harrison (2002) in his study on ‘Organizational Processes’ suggests that organizing, like planning, must be a carefully worked out and an applied process. This process involves determining what work is needed to accomplish the goal, assigning those tasks to individuals, and arranging those individuals in a decision-making framework (organizational structure). The end result of the organizing process is an organization; a whole consisting of unified parts acting in harmony to execute tasks to achieve goals, both effectively and efficiently. A properly implemented organizing process should result in a work environment where all team members are aware of their responsibilities. If the organizing process is not conducted well, the results may yield confusion, frustration, loss of efficiency, and limited effectiveness.

Management control system (MCS) on performance was found to be a suitable moderator in the study. However, it is much stronger in stable environments and profit generating firms where goals to be accomplished can be defined according to processes to be observed and requisite standards as applied in private sector as compared to public institutions. In public sector, control is mainly pegged on strengthening of relationships stipulated in institutional theory (norms, rules, routines and schemas) collectively designed rather than on strengthening of bureaucratic principles designed by management. The study recommends that since intrinsic motivation is not adequate to achieve the requisite goals in training institutions and public sector, management should tighten their management control systems to comply with increased external regulations/requirements imposed by the Government and the industry.

This study was in support of a learning environment with up-to-date equipment and learning facilities. Local studies by Ngure (2013) and Nyerere (2009) on TTIs suggest that one of the reasons for producing half-baked graduates is using old technology and processes in training and lack of adequate equipment compared to the number of candidates. This calls for a curriculum with processes that involve the industry where the trainees will eventually be deployed. Finally the degree of collaboration with stakeholders which was meant to enhance sharing of innovations and general information on governance and management needs improvement for the sake of institutional performance. The study also recommends that for greater generalization of results, the targeted sample should exemplify a reasonable mix of those institutions registered with both TVETA and MOEST and those that are not registered with TVETA but only with MOEST.

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