

EFFECTS OF PROJECT PLANNING ON COMPETENCE BASED EDUCATION AND TRAINING IMPLEMENTATION IN TECHNICAL, VOCATIONAL EDUCATION AND TRAINING CENTRES IN NYAMIRA COUNTY, KENYA

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ABSTRACT

The implementation of projects is a challenging endeavour for project managers the world over. This is especially so whenever new ideas are being transitioned such as the competency based education and training. Technical training centres in Kenya have been unable to perform effectively owing to absence of adequate planning brought about by poor stakeholder engagement in the planning process. Given the practical demands of the CBET implementation, significant resources such as human and material are needed, as such, these projects must have adequate planning in order for them to be successful. The specific objective was to determine effects of project planning on competence based education and training implementation in TVET centres. This study applied a descriptive research design since it was focused on describing the characteristics of the participants involved in the study. The study concentrated on a target population of 25 managers who head in 25 TVETs. The study used self-administered questionnaires on 25 respondents from the target population who were given two weeks to complete the questionnaires. There was a drop and pick arrangement for the completed questionnaires. Data was analysed using descriptive and inferential statistics; correlation, regression, ANOVA and β -coefficients. Data was presented in the form of figures, tables and charts. The study found that there is a strong positive correlation of $r = 0.969$ between project planning and CBET implementation. Also the study found that the linear regression model reflected a strong relationship with the data pertaining to the variables, the R Square value of 0.759 indicating that it is a good predicting model. Furthermore, the results indicate that the ANOVA F-test score, calculated value F_{cal} at 5% level of significance was equivalent to 29.165 which is greater than the F critical value (F_{crit}) of 2.45 indicating that there is a significant relationship between the project planning and CBET Implementation. A review of the β -coefficients findings also shows that a unit increase in project planning will lead to a 0.311 increase in CBET Implementation. Lastly, the study found that project planning affects CBET implementation. The study concluded that the TVETs have performed admirably in institutionalizing project planning which has contributed towards the CBET implementation.

Key Words: Effects, Project Planning, Competence, Technical, Vocational, Training, CBET, TVET

INTRODUCTION

The primary vehicle for the implementation of CBET is, typically, technical and vocational education and training (TVET). The United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the International Labour Organisation (ILO) define TVET as aspects of the education process that feature the study of technologies and associated sciences, the acquisition of practical skills, attitudes, understanding and knowledge pertaining to actors in a variety of sectors of economic and social life. Many countries, particularly in Africa, invest in TVET projects in order to facilitate the impartation of skills applicable in specific employable trade by tapping into the established core competencies of the country. TVET projects are able to build their institutional capacities through linkages with organisations such as UNESCO which initiate leadership programmes so as to upskill TVET institutional leaders and heads of TVET teacher training institutions (UNESCO, 2018).

The implementation of projects is a challenging endeavour for project managers the world over. This is especially so whenever new ideas are being transitioned such as the competency based education and training curriculum. According to Ayonmike, Okwelle and Okeke (2014), the competency based education and training (CBET) is an approach to teaching and learning which involves learning concrete skills rather than abstract learning where learners focus on the development of one competency at a time and periodic assessments or formal testing are made to determine their level of mastery of particular competencies.

A study conducted by Wongnaa and Boachie (2018) found that the main factors which influence the adoption of CBET as a teaching strategy in Ghana included: participation in CBET workshops, effective supervision, accessibility to teaching aids, availability of incentives, weekly teaching load, and the number of students per class. In a different study, Boahin (2018) determined that following the implementation of CBET in 2006, Ghanaian polytechnics started grading and certifying students by focusing on the dichotomous framework of reporting in the face of confusion, tension, and varied opinions from stakeholders such as teachers, students and players in the industry.

Kabanga, Mugimu and Oonyu (2018) affirmed that CBET programs of nurses and midwives have been implemented in Uganda so as to enhance the quality of healthcare by focusing on pedagogical practices such as Student Centred Learning (SCL), the use of pedagogical Teaching Learning Materials (TLM), as well as the placement of trainees in training sites. Consequently, trainees were able to achieve the pre-determined competencies and provide the desired level of service delivery. Additionally, Oyugi (2015) ascertained that CBET has gained increasing popularity in Uganda as evidenced by the mushrooming of many universities and other education institutions pursuing CBET; however, there have been a number of so-called wicked problems that have handicapped the effective adoption of the same such as a disengaged and apathetic public which has led to the absence of holistic, innovative and flexible approaches to its implementation.

In Kenya, Ngwacho (2019) established that whilst it is rationalised on the right objective, that is, the acquisition of practical skills and knowledge so as to boost their entrepreneurial and innovative abilities, it has been hampered by the fact that it is presently unproven in terms of determining sustainable development which should be expected given that it is still in its infancy.

The enhanced focus by the Kenyan Government on the implementation of CBET through the use of TVETs has led to the graduation of learners who are well equipped with the requisite skills, knowledge and attitude which in turn resulted in heightened employability since the CBET curricula are more market-driven and primed towards meeting industrial occupational standards. In order for the CBET to be effectively implemented in Kenya, teachers need support in imparting core competencies, critical thinking, problem solving, creativity and imagination, and communication and collaboration. In fact, teachers identified deficiencies in the provision of essential materials such as handbooks; the design of assessment criterion of the teachers; the construction of assessment rubrics; as well as the maintenance of assessment records (Waweru, 2018).

Statement of the problem

The provision of formal education is one of the most fundamental endeavours by governments the world over. Thus, the design and implementation of education curricula is critical towards meeting this objective. Kenya's current response to this is through the introduction of CBET in the TVET institutions. A key impediment to the implementation of CBET in TVETs is the tuition fees given that the fees range from Kenya Shilling (KES) 30,000 to 80,000 per annum in public TVET institutions, and KES. 120,000 to 250,000 per annum in private TVET institutions, figures which are beyond the affordability of the majority of the population (UNESCO, 2018).

According to the Kenya National Bureau of Statistics (2018), there were a total of 90,587 educational institutions in Kenya in 2017 and 1,962 TVET institutions with a total enrolment of 275,139 students which represented a 35.8% increment from 2016. Further, the enrolment in national polytechnics and technical universities increased by 31.4 percent from 36,915 in 2016 to 48,492 while that of Vocational Training Colleges grew by 29.1 percent from 80,905 to 104,441. Kithae, Awuor, Letting, Nicholas and Gesimba (2014) postulated that many Kenyan technical training institutions lack the requisite communication skills amongst their tutors which has undermined their ability to convey and express knowledge and ideas; and is also symptomatic of poor communication planning. Kithae(2014) argued that TVETs in Kenya are further constrained by poor management practices that have hampered the implementation of strategic plans such as the management of scope plans. Further, Kithae (2014) affirmed that Kenyan TVETs continue to face critical resource challenges in the implementation of Quality Management Systems (QMS) despite the best efforts of the Government which has inhibited them from properly institutionalising quality management planning, an essential element for the ascertainment of excellent service delivery.

Given the practical demands of the CBET implementation, significant resources such as human and material are needed, as such, these projects must have adequate financial support from the governments in order for them to be successful. Unfortunately, this is not always the case, particularly in developing countries in Africa such as Tanzania and Kenya where competing needs reduce budgetary allocations (Kayonga, Mtana& Wendt, 2019). Indeed, another key challenge has been the lack of interest by project drivers such as sponsors in the mobilization of resources, particularly for community based TVETs in Kenya, unlike initiatives that have been undertaken in developed countries. The implementation of the CBET in Kenya has also ran into some cross winds due to the scarcity of effective funding mechanisms to institutionalise the in-depth reforms needed in the sector such as the incorporation of CBET for higher education to incorporate practicing professionals who can provide much needed funding and subsidizing some of the fees for those in lower levels (Oyugi, 2015).

Cheptoo and Ramadas (2019) posited that due to the lack of investment in appropriate equipment there has been a disconnect between the needs of the CBET curriculum and the technology that has been applied. This study sought to determine the effects of project planning on competence based education and training implementation in TVET centres by shedding new insights into the subject.

Specific Objective

To determine effects of project planning on competence based education and training implementation in TVET centres.

Justification

Given that the Government, through the Ministry of Education, is the custodian of the CBET curriculum, the results of this study will provide useful reference material on how to enhance the capacity of TVET institutions to undertake CBET. It is envisioned that the fresh insights provided in relation to the specific objective of the study will guide officials involved in the implementation of CBET.

The primacy of CBET projects in this study makes it an essential piece of research for project management practitioners since it establishes a foundation for all education project managers and concerned parties to understand the most appropriate means through which these projects can be implemented in the face of the typical three-pronged constraints of quality, time and scope. Additionally, given that this study is mainly interested in capacity building initiatives, it will stand those involved in education projects in good stead in terms of the development of implementation capacities.

Since the nature of the projects is educational, it follows that the results of this study will inform the establishment of improved mechanisms for the development of capacities within the institutions established for the implementation of CBET, especially TVET institutions.

Thus, it is anticipated that the findings from this study will plug critical gaps in the knowledge of education practitioners.

The study will contribute to the existing body of knowledge both in project management and CBET by providing new perspectives revolving around the specific objectives. This is particularly crucial given the fact that CBET is still in its infancy stages of implementation.

Theoretical Review

Contingency Theory of Project Management

This theory, which was originated by Gareth Morgan in 1997, supposes that there is no single appropriate method of doing things instead different approaches are informed by the nature of the context, as such, given the unique nature of projects, they need customised approaches that are contingent on each instance based on the fact that variables are always dynamic (Kureshi, 2013). Indeed, in explaining this, Palacin (2017) conceptualised a model that emphasizes the internal and external fit of decisions undertaken by organisations where the latter refers to vertical alignment – the matching of organizational strategies with external environmental conditions; while the former refers to the matching of organizational strategies with internal competencies.

Systems Theory of Project Management

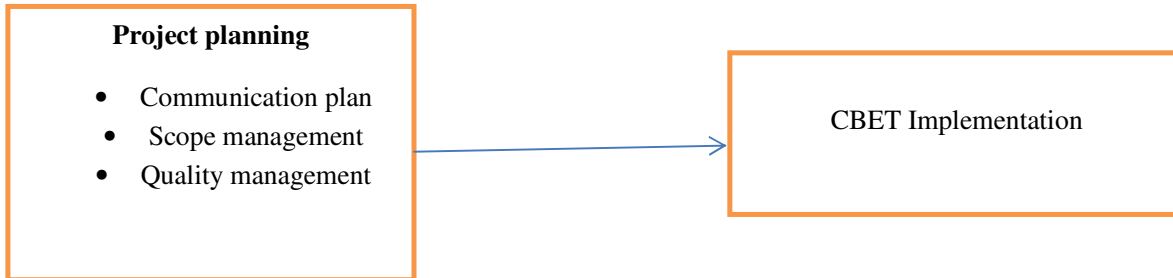
The Systems Theory of project management holds that modern enterprises seek to solve problems by shifting from the operational approach of project management, which is more suited to single projects, to an approach which favours the complementarity of systems within the problem-solving process founded on a number of tenets including: a holistic approach to problem solving, a network of interactions, the role of scenarios in dynamic and complex systems, and a project team approach that focuses on adaptation and creativity (Kopczyński & Brzozowski, 2015). The most effective means of applying systems theory in project management is through the use of equifinality (this refers to the phenomenon whereby regardless of initial conditions, similar findings can be attained through the engagement of many potential means, paths or trajectories) which is able to endow open systems with both flexible control and boundary management which are essential for project management (Kapsali, 2013).

Kopczyński & Brzozowski (2015) established linkages between project complexities and systems theory by affirming that there is a direct correlation between the number of interactions and components and the complexity of a system which in turn compels the choice of a more Agile project management technique. Further, given that the boundary of a system, which is the primary scope of interest, changes whenever the scope of interest changes, a project may have a boundary on the basis of its initial scope but this could change in response to changes in the scope.

Conceptual Framework

Independent Variables

Dependent Variable



Project planning is an overarching theme that describes the project objectives and requirements in terms of the project scope; project schedule; resource requirements; project cost estimation; project quality; and project risk management, so as to provide a foundation for the project manager to translate these using such project planning tools as an aggregated Work Breakdown Structure (WBS), tasks lists, Gantt charts, resource assignment and risk register (Klein, 2017). The project planning process typically involves: the determination of how to plan; the development of the scope statement; the recruitment of the project team; the identification of the deliverables and creation of the WBS; the identification of the activities required for completing the deliverables and arrangement of the activities in their logical sequence; resource requirements estimation; the estimation of time and cost; and the development of the schedule (Szopik-Depczyńska&Lanfranchi, 2016).

The first indicator of project planning is the effectiveness of the project communication plan. According to the Klein (2017), the project communication plan refers to the process through which an organisation is able to develop an appropriate approach and plan for project communication activities on the basis of each stakeholder of group's information needs, the organisation's available resources and the requirements of the project.

The second indicator of project planning is the value of the scope management plan. Jainendrakumar (2015) defines project scope as a description of all the activities and processes involved in the creation of the project deliverables; he goes on to explain that the scope management plan as the document that articulates the project scope definition, validation and control so as to provide guidance and directions on scope will be managed. Jainendrakumar(2015) added that the value of the scope management plan is in the nature and effectiveness of those involved in the scope management plan including the project manager, project sponsor, selected project team members, and selected stakeholders.

The third indicator of project planning is the appropriateness of the quality management plan. The quality management plan sets out the actions and measures that will be undertaken by an organisation so as to ensure the project quality as well as the compliance with contractual requirements (Jainendrakumar, 2015). An appropriate quality management plan is able to facilitate the management and coordination of tasks, the assurance of performance in accordance with the predetermined technical requirements, and the evaluation and validation of the project results to guarantee the performance and quality of the objectives (Palacin, 2017)

Competency Based Education and Training Implementation

Project implementation refers to the process of conducting all the activities set out in the project plan so as achieve the project objectives and ensure the delivery of results and outputs (Rusare ^ Jay, 2015). The implementation of CBET Curriculum focuses on endpoint behavioral competence by monitoring the direct competencies attained throughout the educational experience by all trainees so as to provide a foundation

for a more flexible, genuine, learning and assessment activities while simultaneously reducing emphasis on time and situation based proxies for learning.

The first indicator of the CBET implementation is the extent of stakeholder acceptance. Rusare ^ Jay, (2015) posited that stakeholder acceptance refers to expression of agreement by different categories of stakeholders of a given project, task, technique, or objective. The extent of stakeholder acceptance of CBET refers to the scope of agreement by various stakeholders of specific aspects of the implementation CBET including the teaching techniques, the content of the curriculum, the training centres, and the eventual outcomes of the training.

The second indicator of the implementation of CBET Curriculum is the coverage of training institutions. The coverage of training institutions refers to the number of appropriate training institutions as well as the geographical range of the institutions mandated to provide CBET (Obwoye, 2016). It may also describe depth of scope of the CBET curriculum covered by training institutions in terms of the academic programmes, the practical aspects of the curriculum, the consistency of the material and the range of skills (Boahin, 2018).

The third indicator of the implementation of CBET Curriculum is the measures of competence. Russo (2016) explained that a measure of competence is a scale by which a given identifiable, definable, knowledge, skill, proficiency or other deployable trait can be identified for the performance of a given task. Russo (2016) added that effective assessment of competencies for CBET projects requires multiple measures of competencies along with multiple assessment techniques including multiple choice tests, papers, presentations, performance-based real-world assessments, amongst others.

Empirical Review

A study by Sturgis and Casey (2018) determined that in order for training institutions to implement CBET curricula effectively they need to an appropriate quality management plan that sets out quality principles. These can be broken down into three clusters: purpose and culture principles – purpose driven, commitment to equity, nurturing a culture of learning and inclusivity, fostering the development of a growth mind set, and cultivating empowered and distributed leadership; teaching and learning design principles – basing the design of schools and pedagogy on learning science, activating student agency and ownership, designing for the development of rigorous higher-level skills, and ensuring responsiveness; and structure design principles – maximizing transparency, investing in educators and learners, increasing organizational flexibility, and continuous improvement and organisational learning.

Waweru (2018) established that during the project planning phase of CBET, training institutions should endeavour to ensure the availability of instructional resources which are the primary channel of communication in the classroom by seeking support from the Ministry of Education. This is essential because the initial implementation of CBET in Kenya has exposed deficiencies amongst the learners in applying imaginativeness and creativity and, as such, need more advanced forms of communication.

RESEARCH METHODOLOGY

This study applied a descriptive research design since it was focused on describing the characteristics of the participants involved in the study. The study was conducted in twenty five TVETs in Nyamira County. These twenty five institutions constituted the unit of analysis. The study was concentrated on a target population of twenty five managers who head these centres. This constituted the unit of observation of the study.

The study applied a census method for determining the sample size as per the recommendations of Singh and Masuku (2014), where all the elements of the entire population for small populations of 200 or less

were used in the sample so as to eliminate sampling errors and provide data for all individuals in the population.

The study applied the questionnaire method of data collection. The study used a five point Likert scale as per the recommendations of Subedi (2016) to develop the questionnaire to use along with two measures of central tendency, standard deviation and mean, to describe the data. The data was then examined using the Statistical Package for Social Sciences to conduct regression analysis, descriptive analysis and inferential analysis. The results were then presented using graphs and tables.

RESULTS AND DISCUSSIONS

The return rate of questionnaires was 100%. This rate was due to the data collection procedures put in place by the researcher including; the study used self-administered questionnaires on twenty five respondents from the target population who were given two weeks to complete the questionnaires and there was a drop and pick arrangement for the completed questionnaires.

Descriptive Statistics

The results pertaining to the descriptive statistics of project planning are presented in Table 1. Accordingly, 58% of the respondents either agreed or strongly agreed that their institution has ensured the availability of ministry approved instructional resources which are the primary source of learning materials. This was consistent with the findings of Waweru (2018). Additionally, 67% of the respondents either agreed or strongly agreed that their institution has incorporated the use of electronic communication technologies in learning and teaching processes. This echoed the findings of Russo (2016). Further, 71% of the respondents either agreed or strongly agreed that the value of the scope management plan in the implementation of CBET is based on the existing competence standards which establish the range of permissible content, materials, teaching approaches, the disciplines, and soft and hard skills. This corroborated the findings of Sturgis (2018).

The results also showed that 80% of the respondents either agreed or strongly agreed that the scope management plan incorporates a concerted roadmap towards aligning professional competence at the workplace and the development of the training curriculum by ensuring that student learning outcomes are systematically linked to professional competences in various disciplines. This tallied with the findings of Russo (2016). Additionally, 81% of the respondents either agreed or strongly agreed that the institution's quality management plan is purpose driven, committed to equity, nurturing a culture of learning and inclusivity, fostering the development of a growth mind-set, and cultivating empowered and distributed leadership. This was consistent with Sturgis and Casey (2018).

Table 1: Descriptive Statistics of Project Planning

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The institution has ensured the availability of ministry approved instructional resources which are the primary source of learning materials	0%	42%	0%	32%	26%
The institution has incorporated the use of electronic communication technologies in learning and teaching processes	0%	13%	20%	51%	17%
The value of the scope management plan in the implementation of CBET is based on the existing competence standards which establish the range of permissible content, materials, teaching approaches, the disciplines, and soft and hard skills.	0%	9%	20%	40%	31%
The scope management plan incorporates a concerted roadmap towards aligning professional competence at the workplace and the development of the training curriculum by ensuring that student learning outcomes are systematically linked to professional competences in various disciplines	0%	0%	20%	44%	36%
The institution's quality management plan is purpose driven, committed to equity, nurturing a culture of learning and inclusivity, fostering the development of a growth mind-set, and cultivating empowered and distributed leadership	0%	0%	20%	45%	35%

Competency Based Education and Training Implementation

The results relating to the descriptive statistics of the implementation of CBET projects are shown in Table 2. Accordingly, 52% of the respondents either agreed or strongly agreed that the level of acceptance of CBET curriculum at the institution is reflected in the fact that the majority of students have expressed their satisfaction with the content of CBET programs including concepts covered in various subjects. This partially corroborated the findings of Lassnigg (2017). Additionally, 77% of the respondents agreed that the acceptance of the institution’s CBET projects by stakeholders is manifested in terms of the recognition of CBET certification across industrial sectors as well as the transferability of credits to other academic institutions. This was consistent with Gervais (2016). Further, 55% of the respondents either agreed or strongly agreed that reforms made to make the mode of instruction more student-centric and the aligning the content of the curriculum with industrial needs by focusing on the creation of opportunities outside formal employment has made the institution’s CBET projects more popular. This tallied with the findings of Kufaine and Chitera (2013).

The results also showed that 77% of the respondents either agreed or strongly agreed that the institution uses direct assessment models which utilize different types of measures of competence including projects, papers, examinations, presentations, performances and portfolios where students are credited for their experience as well as the knowledge gained.

This affirmed the findings of Lassnigg (2017). Lastly, 61% of the respondents were neutral towards the assertion that CBET programs at the institution have concentrated the bulk of their efforts on the definition of separate competencies and the incorporation of the same in a wider framework associated with degree programs as a means of measurement of student proficiency. This indicates that most of the respondents were not aware of any efforts by their organisation in this regard. This was inconsistent with Palacin(2017).

Table 2: Implementation of Competency Based Education and Training Curriculum

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The level of acceptance of CBET curriculum at the institution is reflected in the fact that the majority of students have expressed their satisfaction with the content of CBET programs including concepts covered in various subjects	0%	13%	35%	28%	24%
The acceptance of the institution’s CBET projects by					

stakeholders is manifested in terms of the recognition of CBET certification across industrial sectors as well as the transferability of credits to other academic institutions.	0%	3%	20%	77%	0%	Reforms
made to make the mode of instruction more student-centric and the aligning the content of the curriculum with industrial needs by focusing on the creation of opportunities outside formal employment has made the institution's CBET projects more popular	0%	12%	33%	36%	19%	The
institution uses direct assessment models which utilize different types of measures of competence including projects, papers, examinations, presentations, performances and portfolios where students are credited for their experience as well as the knowledge gained.	0%	3%	20%	63%	14%	CBET
programs at the institution have concentrated the bulk of their efforts on the definition of separate competencies and the incorporation of the same in a wider framework associated with degree programs as a means of measurement of student proficiency	13%	11%	61%	14%	0%	

Inferential Statistics

Pearson Correlation Analysis

The Pearson's Correlation Coefficient (r) is the ratio of the covariance of two variables representing a set of numerical data, and standardised to the square root of the variances (Kothari, 2016). The results pertaining to the Pearson Correlation coefficients of the study are presented in Table 3. According to the results, the independent variable, Project Planning had positive correlations of $r = 0.969$; with the dependent variable, CBET Implementation Projects. Accordingly, a change in Project Planning by a value of 1 leads to a corresponding change of 0.969 in the CBET Implementation Projects. Additionally, a change in Project

The results also showed that the p-values of the independent variable were well below 0.05 indicating a statistically significant relationship between independent variable and the dependent variable. This is consistent with Dahiru (2008) who found that given intervals of 95%, p-values of less than 0.05 indicate that observed differences between groups are unlikely to be due to chance and, as such, are statistically significant. This reflects the relevance of the p-value as an acceptable test of statistical significance.

Table 3: Pearson Correlation Coefficients

<u>Project planning</u>	<u>Implementation of CBET</u>
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Pearson correlation 1

Project Planning	Sig. (2-tailed)	
	Pearson correlation	.204*
	Sig. (2-tailed)	.045
Implementation	Sig. (2-tailed)	.000

of CBET

Linear Regression Analysis

According to Mooi and Starstedt (2014), regression analysis is a mechanism applied in the analysis of relationships between an independent variable and a dependent variable by fitting a line-of-best-fit through a series of observations. This facilitates the provision of clarity on: whether the independent variables have a significant relationship with a dependent variable; test the relative strength of different independent variables’ effect on a dependent variable; and make predictions.

The results pertaining to the Linear Regression model of the study are shown in Table 4. According to the table, the R Square value for all the variables was 0.759 indicating that the results explained 75.9% of the variation in the CBET Implementation Projects whenever there was a one percent change in the three independent variables.

This corroborated Hamilton, Ghert and Simpson (2015) who found that in order for R square values to be significant they should exceed 0.7. In other words, whenever this model is used in future research it will be able to explain any variations in the dependent variable 75.9% of the time. This also shows that there is only a 24.1% difference between all the observed values and their fitted values in the examined data set indicating a strong Goodness-of-fit of the regression model.

Table 4: Linear Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.848 ^a	.759	.540	.41560

Analysis of Variance

Analysis of Variance (ANOVA) refers to a statistical technique used in the detection of differences between experimental group means when there is one dependent variable and one or more independent variables (Sawyer, 2009). The results of the Analysis of Variance of the study are presented in Table 5. The results indicate that the ANOVA F-test score, calculated value F_{cal} at 5% level of significance is equivalent to 29.165 which is greater than the F critical value (F_{crit}) of 2.45 indicating that there is a significant relationship between the project planning and the CBET Implementation; while the p-value of 0.000 is less than 0.05 indicating that there is a statistically significant relationship between project planning and the CBET Implementation in accordance with the findings of Kao and Green (2008). This demonstrates the goodness of fit of the model.

Table 5: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	20.150	4	5.038	29.165	.000 ^b
Residual	15.891	92	.173		
1 Total	36.041	96			

a. Dependent Variable: Implementation of CBET

b. Predictors: (Constant), Project Technology, Project Planning, Project M&E

Beta Coefficient Analysis

Mooi and Starstedt (2014) defined Beta Coefficients as unknown constants that are projected from the data which are connected to given predictors or independent variables. These coefficients measure the degree of change in an independent variable and how this influences the dependent variable when the rest of the independent variables are held constant. The results of the Beta Coefficients of the study variables are shown in Table 6. The values of the constants and coefficients enabled the generation of the following linear regression model:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

$$= 0.267 + 0.311 X_1 + 0.344$$

Where, Y refers to the dependent variable (CBET Implementation), X_1 refers to the Project Planning variable.

According to the equation, taking the independent variable to be zero, CBETImplementation will be a constant equivalent to 0.267. A review of the findings also shows that a unit increase in Project Planning will lead to a 0.311 increase in CBETImplementation. Lastly, the p-values for the variables are below 0.05 which indicates that they are all statistically significant.

Table 6: Beta Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.267	.344		.774	.001
Project Planning	.311	.083	.365	3.735	.000

Conclusions

The TVET institutions have ensured the availability of ministry approved instructional resources which are the primary source of learning materials. The institutions have also incorporated the use of electronic communication technologies in learning and teaching processes. Additionally, the value of the scope management plan in the CBETImplementation is based on the existing competence standards which establish the range of permissible content, materials, teaching approaches, the disciplines, and soft and hard skills. Further, the scope management plan incorporates a concerted roadmap towards aligning professional competence at the workplace and the development of the training curriculum by ensuring that student learning outcomes are systematically linked to professional competencies. Lastly, the institutions’ quality management plans are purpose driven, committed to equity, nurturing a culture of learning and inclusivity, fostering the development of a growth mind-set, and cultivating empowered and distributed leadership.

Recommendations of the Study

The TVETs should intensify their current project planning efforts so as to maintain or improve their current standards of project planning. The institutions should identify alternative sources of funding rather than donors such as their own income generation activities like restaurants or the making of furniture, arts and crafts for sale. TVET officials should also lobby the Ministry of Education to increase their budgetary allocation, if possible, through the floor of parliament. TVETs should apply the use of M&E tools that match the competencies with the learning objectives or outcomes then the establishment of teaching and learning technological infrastructure. CBET projects at the institutions should also be partnered with a variety of

stakeholders so as to enhance the preparation of feasible M&E frameworks that are founded on well-established baselines that will ensure proper monitoring of current implementation and perform.

Areas of Further Study

More research on the CBET Implementation projects needs to be done by local authors since the majority of existing works have been done by foreigners. Further, more independent researchers should be incentivised to study the impact of TVETs institutional capacities on CBETImplementation projects such as through scholarships since most of the existing work has been done by organisations or institutional researchers.

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