International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2020): 7.803

Project Management Strategic Interventions and Sustainability of Government Funded Projects in Technical Vocational Colleges in Machakos County, Kenya

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Abstract: ***The main objectives of carrying out any project is to ensure that it succeed in being completed on time, on budget and within the technical standards. While the project manager is designing and organizing the various aspects of the project, there is need to focus how the long term goal of implementing the project will be achieved. This brings in the issue of project sustainability, which should be factored in the project design stage.The purpose of this paper is to base its focus on the examination of project management strategic interventions and sustainability of government funded project in technical vocational colleges in Kenya***

Keywords: Project management strategic interventions, financing, quality engagement, stakeholder integration, governance and sustainability

1. Introduction

Technical and vocational education and training (TVET) is a comprehensive term referring to the educational process. It involves, in addition to general education, the study of technologies and related sciences and the acquisition of practice, skills and knowledge relating to an occupation in various sectors of economic and social life .In the present study, the concept of vocational education implies the preparation of an individual for an occupation or career. This involves both the liberal and technical aspects of education. The liberal aspects include the philosophical, moral and cultural elements that an individual must possess to fit into a given society. Technical aspects include the knowledge and skills required to perform a job successfully (Lewis, 2012).

In Kenya, TVET is expected to provide human capital to drive the country attain middle level economy. According to the Second Medium Term Plan for the period 2013 to 2017, one of the key projects expected trigger economic for growth in Kenya is the infrastructure (GOK, 2013). The focus was on how to use infrastructure as catalyst to economic development. The infrastructure project between Kenya, Ethiopia and South Sudan, popularly known as "Lamu Port-South Sudan-Ethiopia-Transport (LAPSSET)" covers rail way, road and oil pipeline. Its starts from Kenya Lamu Port and connect Kenya with Ethiopia and South Sudan. Kenya is spearheading the development of Corridor Project to strengthen her position as a gateway and a transport and logistics hub to the East African sub-region and the Great Lakes region to facilitate trade, promote regional economic integration and interconnectivity between African countries. The completion of the project is expected to create a lot of employment opportunities to the youths in this region (Wambugu, 2013).

While participation at the tertiary level has expanded from 3% to 24%, it is still lower than the global average of 30%. Expansion at the higher education level will require public–private partnerships (PPP) and reforms to improve quality and internal efficiency. Another key challenge is the improvement in the quality and labor market relevance through the introduction of competency standards, competency-based training, and the promotion of school and industry-based collaboration. There is a need to further align TVET graduate outcomes to the industry's demand for higher skill levels. Currently, there is a mismatch between the skills required in industries and the skills of graduates entering the labour market. Having appropriate human resources has been one of the country's key constraints in recent times. There is a need to adopt new technologies and innovation in moving from manufacturing to an emphasis on services. An inclusive approach to skills development should include schools increasing their overall capacity to deliver technology skills to everyone for an appropriately skilled workforce (Business Journal, 2017).

Muriithi and Nyerere (2016) observe that in most developing countries Vocational Education training is a sub-sector of the education system that generates little attention or budget provision, resulting in poor infrastructure and insufficient facilities. In Kenya, underinvestment in skill training for institutions such as Youth Polytechnics results in understaffing, a lack of or obsolete physical infrastructure (workshops) and poor quality tools, leading to low-quality education that is not synchronised with the requirements of the labour market or local livelihoods Thus, TVET graduates face numerous challenges in the workplace because they lack the skills needed by industry.

2. Theoretical Literature

2.1 Psychomotor behaviour

The psychomotor skills acquisition model proposed by Padelford (1984) comprised six stages: Perceiving where its perception of the wanted skill perceptual component of psychomotor domain; Motivation which involves the resolve to take part or wish to learn. It also requires setting goals on solving a problem perceptual and affective component of psychomotor domain; imitating. This stage requires the individual to be involved in some mental manipulation of forms and pattern, and for mimicking a series of events, patterns or procedures to be used. This stage represents perceptual cognitive and affective component of psychomotor domain; Performing - Practice of the wanted skill by moving parts of the body according to the pattern the mind has visualized perceptual, affective cognitive aspect of psychomotor domain; Adapting.

Adapting new motor skills to new situations based on personal creativity, perceptual, affective, and cognitive as well as creativity aspect of psychomotor domain; Innovating which is the ability to experiment and create new forms of the learned skill, perceptual, affective, cognitive creativity aspect of psychomotor domain. This model is useful as it will explain the stages involved in learning skills or exhibiting various aspects of psychomotor domain. Each stage influences the subsequent one. The model appears comprehensive in stating learning objectives because it conforms to the requirement of psychomotor behaviour in terms of diversities i.e. cognitive and affective. For instance, Padelford observed that the perceiving stage involves: sensing symbols; cue selections; translating and internalizing. These belong to the perceptual cognitive domain. The second stage of motivation involves externally and internally directed satisfaction, which belong to the perceptual and affective domain. The third stage of imitating involves mentally manipulating the forms, patterns or sequence of actions and mimicking a series of events, patterns of procedures followed. This contains perceptual, affective and cognitive domains. The fourth stage also reflects perceptual, affective, cognitive and psychomotor domains. The fifth stage of adapting involves diagnosing, reaching, adjusting and problem solving. This also contains affective, cognitive and psychomotor domains. The sixth stage of innovating involves experimenting, expressing and symbolizing. This also contains affective, cognitive and psychomotor. Therefore, analyzing the Padelford's model it could be said that the first three levels are internal while the remaining three are externally observable and each stage leads to the other in TVET institution

2.2 Behaviourist Learning Theory

Behaviourist learning theory emphasized the role of the environment in determining behaviour (Rabinowitz, 2004), whereby, an event or activities in the environment will cause something to happen in the mind, which then causes some behaviour to occur Hence, the usefulness of this theory by paying attention to the setting of the environment where events or activities take place, and possible to manipulate the consequences of different behavioural responses (Rabinowitz, 2004)

In addition, behaviourism provides some concepts or assumptions for assessment purpose. For example, the engineering syllabuses in TVET normally integrate theories with other useful applications, such as, behaviour shaping and behaviour modification and task analysis (Hassan, 2011)

2.3 Cognitive Learning Theory Cognitive

The theory will assist learner to obtain the thinking techniques in order to improve performance in job (Sink, 2014), because the learning occurs is based on how information is encoding, storage, and retrieval in the human memory and frequently follow Gagné's nine events of instruction. For example, findings from Hua's (2016) study reported a good level of program quality and achieved good performance on instruction, interactivity, and technique aspects that allow share approach to integrate information literacy within academic programmes, results in, a more effective techniques to curriculum design based on the ADDIE model.

3. Empirical Literature Review

According to Abdul (2015) Sustainability is a global aim to balance the rapid growth of human needs and rapid deterioration of resources. Sustainability is a measurable aspect of environmental, economic, or social systems that is useful for monitoring changes in system characteristics relevant to the continuation of human and environmental well-being. This gives the key pillars of addressing sustainability of any given project. Incorporation of sustainability concepts into project management policy ensures that, decision making process considers the adoption of sustainability indicators for purposes of problem definition, goal setting, measurement of progress, evaluation of performance, communication with stakeholders, and project reporting.

Economic sustainability deals with various kinds of capital including man-made, natural, human and social that should be sustained in the process of achieving economic growth. This would include optimum resource management through efficient utilisation of renewable natural resources and energy or non-excessive usage of the non-renewable resources so that future generations can create their own wealth (Abdul, 2015). Social sustainability refers to the harmonious evolution of civil society towards compatible cohabitation of culturally and socially diverse groups that includes themes of equity, poverty reduction, livelihood, identity, sense of place, participation and access, social capital, social cohesion, the benefits of social networks, happiness and quality of life (Yung and Chan, 2018). Based on the Organization for Economic Cooperation and Development (OECD) Environmental Strategy for the First Decade of the 21st Century, Moldan *et al*. (2017) refer environmental sustainability as the initiatives to maintain natural system through efficient utilization of renewable and non-renewable resources, reducing hazardous pollutions and avoiding damaging actions of environmental ecosystem.

Sustainable development is a concept that addresses this development versus human and environmental needs issue. The famous definition of sustainable development is meeting present needs without jeopardising the ability of future generations to meet theirs. An important component of project management is the establishment of sustainability objectives, goals, indicators, and metrics as a basis for implementing and evaluating technical education progress. Consequently, sustainability needs can be embedded into the project need statement as a part of project scope. Besides that, it avoids repetitive design works to cater sustainability features into the conventional design. Since strategy development conducted at the very early stage of project planning, it is the best platform to integrate sustainability concept into project planning.

As budget allocations from government sources for education get tighter, the squeeze on availability of funds for Vocational Education and Training (VET) is apparent in so far as VET is dependent on public funds. Financing Vocational Education and Training in Developing Countries higher as classes are small with instructor trainee ratios of 1:7 sometimes. This increases the unit teaching costs. Expenditure on equipment, infrastructure, consumables e.g. raw materials and spare parts is also much higher. It is then imperative to search for alternative means of financing. The challenge before policy makers is to introduce new and different ways of financing as well as to ensure that the resources which are available for VET are used more effectively (Wadworth, 2016).

According to a Business Journal (2018) the financial resources allocated or spent on all TVET programs reflect the country or region's priorities and, when combined with outcomes, the system's efficiency, as well as its policy priorities and trade-offs. Many countries must reconcile the fact that public and private resources are limited with the need to spread these resources over many levels and programs. Hence, achieving the best use of resources while maintaining a sustainable budget is a key policy issue. As a consequence, the policy debate is increasingly focused on raising the level of financing through diversification, and on enhancing efficiency while maintaining equity. Diversification is achieved mainly by involving enterprises, individuals and other innovative sources of funding philanthropic sources, sponsors, etc., and through public private partnerships PPP. The formal apprenticeship system represents a PPP in which different actors play their own roles in the financing mechanisms. The system works through interaction between public institutions (central, regional or local), which contribute to financing the school based element of the training, and the enterprises that contribute to financing the company based component.

According to Business Journal (2019) Quality in complex systems like TVET stems from the way in which the product/service takes shape as it moves through this system. Indeed, quality assurance is one of the main functions of TVETA in Kenya. The government has put in place processes and procedures to ensure that qualifications, assessment and programme delivery meet set criteria and standards as per the dictates of the TVET Act. This comprises of the processes of ensuring that specified standards and requirements for TVET provision, learning, TVET management, accreditation, assessment and the recording of achievements are met. To ensure that TVET reforms are realized, TVETA has developed quality assurance and quality management system manuals to guide the implementation of TVET quality assurance in Kenya.

According to Gicharu (2020) stated that the provision of quality and relevant education and training is critical in equipping Kenyans with skills necessary for industrialisation. For this reason, the government focused on improving and expanding technical and vocational education and training institutes in order to equip the youth with the relevant skills necessary for industrialization. The success of Kenya's growth ambitions is hinged on an adequate supply of a critical mass of technical skills. The government must ensure that the quality of education in these institutions is of top quality by re-equipping them. Modern machines are critical; a college cannot claim to offer technical courses if it lacks the right equipment. We also need to upgrade the expertise of the trainers. Quality training presupposes the existence of top-notch tutors who apply innovative approaches to teaching. There is an urgent need to revamp the curriculum. Massive technological advancements have taken place.

The government of Kenya in a report by the ministry of education stated it had identified technical courses such as automotive engineering, plant engineering, masonry, plumbing and other crafts as key drivers of its growth plan. The country's economic blueprint for the next five years is built on four pillars: food security, affordable healthcare, manufacturing and housing. The emphasis on technical education has received support from some quarters. There is every justification to expedite the education reform that seeks to recreate the curriculum from mere knowledge acquisition to skills and competence. Kenya must refocus higher education by promoting technical and vocational training and changing the degree curriculum (Daily Nation 2018).

The renewed focus in the technical training sector has also attracted interest from private organizations who argue that for Kenya to become industrialized by 2030, it must strengthen the technical and vocational education and training system which is currently eroded by low investment.The country is fighting a skills shortage that could hinder the smooth implementation of Kenya Vision 2030, the country's long-term economic blueprint which is founded on a strong human capital base (Gicharu,2020)

Skills development is important for economic growth, poverty alleviation, youth and women empowerment and social inclusion. Nevertheless, the role of TVET is not effectively captured to a large extent in most of the policy documents. This gap is particularly puzzling, Governments and donor countries consistently emphasize the need for concerted efforts to build the human assets of the poor. Yet TVET is accorded limited importance in donor financing schemes and discussions since the late 80s" (Bennell,2016).The TVET systems in Africa differ from country to country and are delivered at different levels in different types of institutions, including technical and

vocational schools (both public and private), polytechnics, enterprises, and apprenticeship training centres. In West Africa in particular, traditional apprenticeship offers the largest opportunity for the acquisition of employable skills in the informal sector. In Ghana, the informal sector accounts for more than 90 % of all skills training in the country (Majumdar&Solla, 2014).

The study will use a descriptive research design to achieve its set objective. According to Yazici, (2009) a descriptive research design is a procedure where data is collected from a population to establish the current status of the subject matter under scrutiny. It will facilitate rich conceptual/ theoretical development and procedures which will be involved to finding out unexpected outcome which is helpful in understanding how variables relate.

Mbwesa (2006) defines data collection instruments as the techniques and tools that are used for the purpose of data collection. Research instrumentation is also about how the research tools are deployed (Oso & Onen, 2011). For this study, primary data will be collected using structured questionnaires that will be issued to the respondents. Questionnaires will be preferred because they will be simple to administer, comprehensive and will be simpler to analyze since they will provide direct observations

4. Discussions

The Kenyan education system is now focusing on the Technical and Vocational Education and Training (TVET) as the Government is now concentrating on achieving social and economic growth in pursuance of vision 2030 goals. TVET program is a good initiative to promote high-skilled workers. In order to achieve this aim, the trainer or TVET teachers need to be equipped with skill and knowledge on specific field. Thus, this section, the researcher highlights current developments and progress in Kenyan governments' effort in development of TVET Visa Vis the university education in Kenya. This look into history of TVET trainers' competency or standards need to be complied as a requirement to teach.

Throughout history, vocational education has given students hands-on experience to prepare them for employment. According to Vocational schools, also known as trade schools, career colleges, and technical colleges, train students for skills-based careers, (higher education 2016). Those interested in careers such as hotel management, accounting, engineering, or business management can study at a vocational technical school. Career and Technical Education (CTE) results in either award of certificate or diploma. Students who complete these programs are then ready to begin their careers or earn their four-year degrees at the university level.

Students have been training for specific vocations for thousands of years, just not in the way we think of vocational education today. Globally, women learned domestic skills from their mothers, and young men trained for specific trades under skilled professionals. Young apprentices, for example, may have learned to shape swords by shadowing the town's bladesmith. This type of hands-on, skills-based learning has lasted throughout human history. As we have developed, so has it.

5. Conclusions and Recommendations

The study made conclusions that that financing intervention is a challenge to TVET programs and affects the project management strategic interventions and sustainability of government funded projects in technical vocational colleges in Kenya. Therefore it is crucial element in the financing of TVET so as to ensure that funding mechanisms and incentives work to support industry involvement in a TVET system while reinforcing quality training provision.

After a thorough analysis of the findings conclusion were made that quality management intervention should be focused on project management strategic interventions and sustainability of government funded projects in technical vocational colleges in Kenya. Provision of quality and relevant education and training is critical in equipping Kenyans with skills necessary for industrialization. The government should be focused on improving and expanding technical and vocational education and training institutes in order to equip the youth with the relevant skills necessary for industrialization.

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