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INSTITUTIONAL SURVEILLANCE AS A DETERMINANT TO PROGRAM SUCCESS: A REVIEW OF COMPETENCE BASED EDUCATION TRAINING IN KENYAN NATIONAL POLYTECHNICS

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Abstract: *National polytechnics play a critical role in Kenya for they serve as technical skill development centers. The Kenya Vison 2030 underscores the role of TVETs in economic and social development of the nation. Conducting surveillance of program implementation is key to success of programs. M&E surveillance should be implemented through routine monitoring of student registry, labor market assessments and student satisfaction surveys. We conclude that program surveillance contributes to the success of programs in Kenya National polytechnics. The paper presents findings from a survey of 74 respondents drawn from 10 Kenyan National polytechnics. It is evident that surveillance of program implementation contributes greatly in the success of CBET. The paper concludes that if CBET programs have to attain their intended goal, systematic and well-structured surveillance activities must be conducted periodically and information collected utilized strategically to make informed decisions to improve the program.*

Keywords: *Competence Based Education Training, institutional surveillance, national polytechnics*

BACKGROUND AND INTRODUCTION

Performance of polytechnics projects is a source of concern for both public and private-sector clients. A project's progress is essentially measured by how well it is carried out (Dewi et al., 2018). In project delivery in polytechnics around the world, project success is also a big concern. Client consultation, project mission, top management approval makes up the most common determinants of project success (Saude et al., 2019). Recognized by the research community are personnel, tools to assist the project, customer acceptance, monitoring and feedback, channels of communication and troubleshooting expertise. Project performance in polytechnics can be considered as the backbone of polytechnics to deliver required skills as it leads to job creations (Education, 2020). Many scholars and practitioners argue that projects are mini organizations in themselves because both share the same features and require similar efforts to ensure their success (Müller & Turner, 2007). As such, experience and knowledge are the result of the accomplishment or undertaking of many projects regardless of their magnitude or complexity (Vianney et al., 2020).

Pasanen and Shaxson (2016) contend that an M&E guidance framework is aimed at providing critical information to organisational policy makers to make informed decisions in six critical areas including: strategy and direction; management; outputs; uptake; context; and outcomes and impacts. However, despite long-standing presence of M&E among research and discourse, its practical application in polytechnics projects is

still in its infancy **(Gareis et al., 2014; Silvius & Nedeski, 2014)**. Poor implementation of monitoring and evaluation might have led to low and poor services deliver and project failure in polytechnics. Thus, polytechnics need an effective guiding framework for implementing M&E (Owuor et al., 2016).

Problem and Focus

Kenya Vision 2030 emphasizes the importance of providing key skills to boost the country's economic many sectors (Republic of Kenya, 2007). Kenya's Vision 2030 calls for national polytechnics to be the economy's driving engine, producing enough middle-level professionals to propel the country toward industrialization (Republic of Kenya, 2012b). In order to rebrand TVET in Kenya, the government passed the TVET Act in 2013. The Republic of Kenya declared a goal to develop TVET institutions at one of its presidential country speeches in 2017. (Nganga, 2017).

National Polytechnics have witnessed high increase in enrollments of 35.5% in 2019 compared to 2018 (KNBS 2020), creating challenges on quality standards and irrelevance to the needs of the economy and society (Kenya Vision, 2030). To effectively solve these problems there is need for accurate and relevant data to inform interventions and adapt as needed. This paper uncovers the contribution of surveillance in monitoring and evaluation on success of CBET programs in Kenyan national polytechnics. Surveillance as a component of M&E provides the information and data necessary to build effective program implementation frameworks.

Objective and Purpose

This paper aims at uncovering the contribution of surveillance to the success of CBET programs in Kenyan national polytechnics.

THEORETICAL AND LITERATURE REVIEWS

Institutional Theory

Institutional Theory was founded in 1963 by two prominent Austrians: sociologist Paul F. Lazarsfeld and Oskar Morgenstern, an economist. Based on the institutional theory, structures within institutions are informed by social values that are ordinarily, are vastly accepted, taken-for granted and impervious to change. One element of institutional Theory, according to Cardinale, (2018) implies that firms or institutions act in accordance to pressures from external surrounding as a way of proving their legitimacy to critical stakeholder groups. Acting in accordance with mutual values improves the observed credibility of companies, safeguards them against outside pressure and investigation in addition to augmenting their chances of perpetual existence.

Legitimate undertakings go hand in hand with the mutual perceptivity among involved parties of acceptable standards of performance and can assume a more superior role in controlled environments as compared to boosting economic performance. Gong & Zhou (2015) contend that the socially constructed, codes of conduct, and assumptions, values and norms that reinforce the meaning of legitimate are often described as institutional logics. Institutional logics are instrumental in delivering techniques or strategies that steer change, and critically, also make it possible to fight against changes by maintaining the legitimacy of present culture as well as mutual values.

Cardinale, (2018) postulates that to achieve and foster legitimacy, companies react to their organisational surroundings in an isomorphic manner. Isomorphism can be explained as the magnitude of homogeneity between companies that are brought about by incorporating outside pressures. Most of the existing institutional inquiry is focalized on the disposition for similitude and conformity. Isomorphic responses are categorised as:

normative, viewed through sticking to professional codes; coercive, suggesting a confluence of responses steered by law or compliance; or mimetic, where an institution replicates the structures and or of others that are deemed to be successful (Grob & Benn, 2014). The theory is important in discussing of influence of M&E Surveillance on performance of programs in Kenyan national polytechnics

Literature on Surveillance

Surveillance is the systematic and continuous process of collecting, aggregating, analyzing, interpreting, disseminating, and using data. Effective surveillance can improve information, which can be used for action (MEASURE Evaluation, 2019). Surveillance, a core function of project implementation, is defined as "the ongoing, systematic collection, analysis, and interpretation of project data essential to the planning, implementation, and evaluation of project implementation practice, closely integrated with the timely dissemination of [this information] to those who need to know" and act upon that information (Zinszer et al., 2010).

A surveillance system, on the other hand, is a set of processes and elements that allow project managers to undertake surveillance. Data collection, interpretation of analytical results, data quality monitoring, data administration, data processing, dissemination of information, and application of the data to programs are all part of the surveillance process. Project error checking to identify or verify standards; information technologies to facilitate the surveillance process of information gathering, assessment, and distribution of information; frameworks and directories for distributing alerts, bulletins, project guidelines, and preventative measures recommendations; system management and administration; and human factors are some of the enabling components of surveillance systems (e.g., multisector communications and relationships) (McNabb et al., 2014).

Ultimately, surveillance systems should produce information to guide project implementation decisions in many areas, including disease prevention, prevention program planning and management, health promotion, quality improvement, and resource allocation (Groseclose & Buckeridge, 2017).

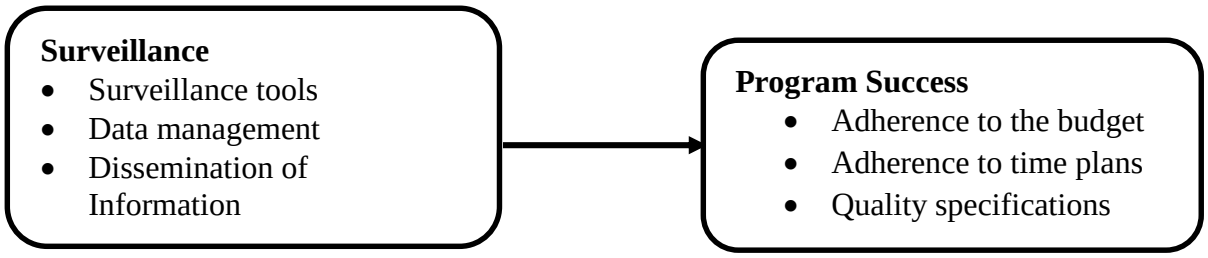
Surveillance involves conducting repeated surveys to observe patterns and enhance the identification of deviations from the standard. However, surveillance is confused with monitoring which involves routine data collection to track progress over time". As such, the function of surveillance is only to identify changes in established norms and patterns and does not concern itself with their interpretation or implications (Thomas and Middleton, 2003). Also, monitoring and planning are similar processes in performance management because they complement and check each other and it is difficult to identify when one starts and when the other comes to an end (Hockings et al., 2010). However, the simpler the monitoring process of a project, the cheaper and efficient it becomes, because of the ease of establishing and measuring relationships between different identified performance indicators and measures. As a result, it enhances the objective measurement of progress towards targets, their overall performance and success levels.

Organizations employ surveillance as a precursor to establishing standards upon which to base their future monitoring operations or in cases where it is not possible to establish such operational baselines (Eurosite, 2003). Surveillance data is instrumental in identifying the ranges within which factors of production can operate without affecting the company's performance or resulting in unnecessarily higher production costs (Jones, 2011). In addition, the nearly infinite scope allows surveillance to identify patterns in a wide array of attributes, processes and functions. It is flexible enough for deployment at various levels of operations whether at a local, national and even regional level.

Because of its lack of strict scopes and specificity, surveillance offers an organization the best tools to map out random and unexpected phenomena. However, this also acts as a demerit to the validity and integrity of the data it generates because of the inherent lack of controls (Parks et al., 2012). Even with the best forms of surveillance, such as photo-surveillance, that offer organizations the ability to clearly see changes and patterns in the phenomena they are studying, they still do not form sufficient substitutes to monitoring (Naidoo, 2011).

Changes in governance structures, regulations and business systems across the globe are making a shift in the way surveillance is conducted so as to increase the effectiveness of their systems especially in establishing patterns in relatively newer concepts (Corley et al., 2012). Therefore, it is essential that surveillance is conducted to generate as many patterns as possible so as to enhance performance management functions (Shahab, 2009).

Figure 1: Conceptual Framework



Surveillance provides the tools, data and information upon which critical decisions concerning a project are made. It is the basis for developing patterns and conclusions about performance since data is collected continuously and acted upon as the project continues. This helps inform the project implementers on the adherence to budget, time schedules as well as quality specifications which are critical pointers to good performance. Because of well-structured surveillance, decisions are made on time to enabling the project to avert any crisis.

RESEARCH METHODOLOGY

Research Design and Population

According to Bhattacherjee (2012) research is anchored on a plan to logically test the relationship and structure of the variables using a research design. To base the solution to the study problem, the research design to be used in this study was descriptive research design.

The population of this research was selected from the national polytechnics in Kenya as described herein.

There are 1,417 registered TVET institutions in Kenya comprising of national polytechnics, technical training institutes, technical vocational colleges, vocational training colleges, private TVET colleges and TVET institutions in line ministries (TVETA 2022)[1]. The study was conducted at Kenyan national polytechnics, which are mandated by law to develop and review TVET programs as well as establish mechanisms for monitoring and evaluation of their programs and services to ensure and assure standards, quality and relevance (TVET Act 2013). Target population was 94 staff from 10 Kenyan National polytechnics with designations

[1] https://www.tveta.go.ke/institutions/

and roles that require M&E capacity namely – Deputy principals (Academic and Administration), registrars, heads of departments developing and adapting CBET courses, institutional CBET champions, gender committee chairs, head of department career guidance, head of department quality assurance and industrial liaison officers.

Table 1: Target Population

Designation	Target Population
Deputy Principals Academics	10
Deputy Principals Administration	10
Registrars	10
Heads of Department (developing CBET Courses, career guidance, quality assurance[2])	34
CBET Champions	10
Gender Committee Chairs	10
Industrial Liaison Officer	10
Total	**94**

Source: TVETA, 2022

The Study carried out a census since the numbers were small. This gave the study adequate views to base decisions on. The questionnaire was administered through an online platform using Enketo. The respondents received a link to the survey questions that could be answered either on a computer or a mobile device. Questionnaires allow for confidentiality of the respondents to be kept and the unique identifiers would only be privy to the researcher.

DISCUSSION OF FINDINGS, SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

Findings of Monitoring & Evaluation Surveillance

The Monitoring and Evaluation Surveillance is key to identifying the successes and challenges of the CBET programs in Kenyan national polytechnics. Thus, the study found it necessary to establish the presence of M&E surveillance systems at the national polytechnics. Table 2, highlights the findings.

The study enquired from the respondents whether the polytechnic conducts routine monitoring on the CBET student's registry. The results revealed that 21.6% (16) of the respondents strongly agreed, 36.5% (27) of them agreed, 5.4% (4) disagreed while 31.1% (23) of the respondents were neutral. The results summed up to a mean of 3.64 and standard deviation of 1.05. This implies that the polytechnics will be able to identify any students who have not met the required competencies for their program and take remedial action. Additionally, the polytechnic will be able to monitor the progress of CBET programs and make necessary adjustments to improve program effectiveness. In relation to whether the polytechnic conducts labor market assessments before implementation of CBET programs, the results were positive with 16.2% (12) of the respondents in strong agreement, 31.1% (23) in agreement, 2.7% (2) disagreement while 44.6% (33) of them were neutral. The item realized a mean of 3.50 and standard deviation of 0.98. This implies that conducting labor market assessments before implementing CBET programs can help ensure that programs are aligned with the needs

[2] There are instances where institutions have not created the specific HOD offices, so the numbers vary.

of employers. This, in turn, can improve the employability of graduates and the overall performance of the polytechnic.

Regarding whether the polytechnic uses the outcome evaluations to assess if CBET programs improve the welfare/opportunities of its graduates, of the total respondents, 6.8% (5) of the respondents strongly agreed, 39.2% (29) of them agreed while 37.8% (28) of the respondents were neutral. The results summed up to a mean of 3.31 and standard deviation of 0.95 meaning that there is uncertainty as to whether CBET programs improve the welfare/opportunities of graduates. Further, respondents were asked whether the polytechnic undertakes student satisfaction surveys to enhance CBET program delivery. The results showed that 13.5% (10) of the respondents strongly agreed, 44.6% (33) of the respondents agreed, 4.1% (3) of them disagreed while 35.1% (26) of the respondents were neutral. The results summed up to a mean of 3.62 and a standard deviation of 0.87. The implications are that the polytechnic will be able to get feedback from students on what they liked and did not like about the program delivery and make improvements accordingly.

Also, the study sought to find out if the polytechnic conducts stakeholder's satisfaction surveys to improve on CBET programs, products and services. Results indicated that 12.2% (9) of the respondents strongly agreed, 33.8% (25) of them agreed, 6.8% (5) disagreed while 45.9% (34) of the respondents were neutral. The results summed up to a mean of 3.49 and standard deviation of 0.85 indicating that the polytechnic may not be able to identify areas where they need to make changes to improve their programs, products, and services. This could lead to the polytechnic not meeting the needs of their students and stakeholders, and ultimately not being able to improve the quality of their CBET programs. Generally, the results on M&E surveillance summed up to a mean of 3.51 and standard deviation of 0.94 as shown below. This is an indication that all respondents agreed that surveillance was being done to the CBET program.

Table 2: Monitoring & Evaluation Surveillance

		SD	D	N	A	SA	Mean	Std. Dev
The polytechnic conducts routine monitoring on the CBET student's registry	Freq.	4	4	23	27	16	3.64	1.05
	%	5.4	5.4	31.1	36.5	21.6		
The polytechnic conducts labor market assessments before implementation of CBET programs.	Freq.	4	2	33	23	12	3.50	0.98
	%	5.4	2.7	44.6	31.1	16.2		
The polytechnic uses the outcome evaluations to assess if CBET programs improve the welfare/opportunities of its graduates.	Freq.	4	8	28	29	5	3.31	0.95
	%	5.4	10.8	37.8	39.2	6.8		
The polytechnic undertakes student satisfaction surveys to enhance CBET program delivery	Freq.	2	3	26	33	10	3.62	0.87
	%	2.7	4.1	35.1	44.6	13.5		
The polytechnic conducts stakeholder's satisfaction surveys to improve on CBET programs, products and services	Freq.	1	5	34	25	9	3.49	0.85
	%	1.4	6.8	45.9	33.8	12.2		
M&E surveillance							3.51	0.94

The findings presented above shows that surveillance was taken seriously by the polytechnics and that and that it covered important stakeholders like students and employers. This is encouraging since in the long run the TVETs develop labour market relevant skill sets.

CBET Program Performance

CBET programs are designed to provide students with the necessary skills and knowledge to succeed in their chosen field. By establishing the CBET Program Performance, it will help to ensure that these programs are effective in preparing students for their chosen careers. Table 3 illustrates the results on CBET program performance. The findings indicated that the majority (51.4%) of the respondents viewed their success in reaching performance targets, such as recruiting 200+ CBET students and achieving 80% completion in training, to be moderately successful (mean = 3.59, SD = 0.92).

Furthermore, 60.8% of the respondents asserted that programs are delivered as intended to a moderate extent (mean = 3.54, SD = 0.74), while 35.1% stated that the results of the programs were as expected to a moderate extent (mean = 3.49, SD = 1.26). Additionally, 40.5% of participants indicated that program goals/objectives are met to a moderate extent (mean = 3.82, SD = 0.94).

Moreover, the survey results indicated that 39.2% of the respondents acknowledged that they use program theoretical models such as correlating program components to outcomes to some extent (mean = 3.45, SD = 0.95), while 51.4% of the respondents indicated that they create annual reports based on performance data to a moderate degree (mean = 4.07, SD = 0.88).

Additionally, 35.1% of the respondents indicated that they produce reports for senior management/Council members to some degree (mean = 3.55, SD = 1.26). Concurrently, 36.5% of the respondents affirmed that they utilize a performance management system to some extent (mean = 3.73, SD = 0.97). Lastly, 29.7% of the respondents noted that performance audits, results-based management, and quality assurance activities are carried out to a moderate extent.

Table 3: CBET Program Performance

		not at all	**Small extent**	**Some extent**	**Moderate Extent**	**Large Extent**	**Mean**	**Std. Dev**
Performance targets (e.g., recruit 200 CBET students, 80% complete training)	Freq.	1	10	16	38	9	3.59	0.92
	%	1.4	13.5	21.6	51.4	12.2		
Programs are delivered as intended.	Freq.	2	5	20	45	2	3.54	0.78
	%	2.7	6.8	27	60.8	2.7		
Program results are as intended	Freq.	11		21	26	16	3.49	1.26
	%	14.9		28.4	35.1	21.6		
Program goals/objectives are met	Freq.	1	5	19	30	19	3.82	0.94
	%	1.4	6.8	25.7	40.5	25.7		
Use program theoretical designs (i.e., link program components to outcomes).	Freq.	1	10	29	23	11	3.45	0.95
	%	1.4	13.5	39.2	31.1	14.9		
Produce annual reports based on performance measures	Freq.	0	7	5	38	24	4.07	0.88
	%	0	9.5	6.8	51.4	32.4		

Produce reports for and/or senior management/Council members	Freq.	7	9	13	26	19	3.55	1.26
	%	9.5	12.2	17.6	35.1	25.7		
Use a performance measurement system.	Freq.	0	9	20	27	18	3.73	0.97
	%	0	12.2	27	36.5	24.3		
Performance audits, results-based management, quality assurance activities	Freq.	9	7	17	22	19	3.47	1.31
	%	12.2	9.5	23	29.7	25.7		
performance of CBET programs							3.63	1.03

It is evident that the CBET program is succeeding as implemented in the TVETs across the country. To ascertain the influence of surveillance of program implementation to the success of the CBET program, a correlation analysis was carried. Correlation analysis is used to establish the level which two variables converge or diverge depending on the case to determine the significance of the relationship. Normally, the Pearson's Product Moment Correlation Coefficient is used to make inference about the existing relationship between two variables (Gogtay & Thatte, 2017). Generally, correlation analysis depicts to a given degree, the aspect of how one factor influences another.

However, correlations do not imply or infer a cause-effect relationship. Consequently, a correlation analysis of the independent factors and the dependent factor (CBET Program Performance) was conducted, and the findings were summarized and presented in table

From the analysis, M&E Surveillance has a strong positive and significant relationship with CBET Program Performance where r = 0.798 at 0.01 level of significance. This shows that when implementing projects, the team need to put a lot of emphasis on following up and conducting periodic surveillance on the progress and use that information to make informed decisions.

The findings are below in table 4 below.

Table 4: Correlations

		CBET Program Performance	**M&E Surveillance**
CBET Program Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
M&E Surveillance	Pearson Correlation	.798**	1
	Sig. (2-tailed)	0.000	

Regression Estimation of Coefficients

The estimation of the regression coefficients in table 5 enables the determination of the significance of the effect of the independent variables on CBET Program Performance given the other variables being held constant.

Table 5: Estimation of Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.451	0.225		2.009	0.048
M&E Surveillance	0.311	0.092	0.32	3.378	0.001

a Dependent Variable: CBET Program Performance

Furthermore, the findings revealed that M&E Surveillance had a positive and significant effect on CBET Program Performance where $\beta_3 = 0.311$, p-value = 0.001 indicating increase by a unit in the M&E Surveillance system results in the increase in CBET Program Performance by 0.311 units. The results coincide with that of Clara et al. (2020) which highlights the importance of M&E tools for collecting data on signals and occurrences reported, timeliness of reporting and reaction, implementer impressions and opinions, and accuracy of EBS implementation in Vietnam. This demonstrates the need for reliable and detailed data collected from M&E tools to ensure the success of these programs. Surveillance is important in implementing projects

Summary

The findings on M&E surveillance suggest that the polytechnic actively monitors the CBET student registry, carries out labor market assessments prior to program implementation, and routinely surveys student satisfaction in order to ensure optimal delivery of CBET programs. Nevertheless, the efficacy of CBET programs in terms of improving the welfare and opportunities of graduates remains unclear. Additionally, the polytechnic may fail to identify any weak points in their programs, products, and services, thereby hindering their ability to make necessary updates and improvements. Managing the information derived from constant surveillance stands to benefit the overall program and hence improve its success rate.

Conclusion

Besides, M&E surveillance is positively associated with the improved performance of CBET programs in Kenyan national polytechnics. Thus, by conducting routine monitoring on the CBET student's registry, carrying out labor market assessments before implementation of CBET programs, and collecting student satisfaction surveys, the polytechnic can assess the impact of their investments, ascertain areas for improvement in their programs, products, and services, and evaluate the extent to which their CBET programs are benefiting students in terms of welfare and future opportunities.

Recommendations

Monitoring and evaluation (M&E) surveillance is critical for supporting the performance of CBET programs in Kenyan national polytechnics. To achieve positive outcomes in their CBET program delivery, the polytechnic must implement routine monitoring of the CBET student's registry, labor market assessments before implementation, and student satisfaction surveys, while simultaneously assessing the impact of their efforts on the welfare and opportunities of graduates. By continually improving their approaches to M&E surveillance and evaluating their progress, the polytechnic will be better able to identify areas for improvement in their programs, products, and services, resulting in better-quality outcomes for their students.

This paper further recommends that surveillance of programs at Kenyan National polytechnics ought to be well structured and extensive to cover critical information areas so that they can inform decisions. This way more critical issues will be addressed early enough to provide the necessary support for actions that may require evidence based logic to implement.

Further research can be conducted on the contribution of labour market induced surveillance on the performance of CBET programs at Kenyan polytechnics. The consumers of TVET skills are the employers and hence getting them to be actively involved in surveillance will inform critical gaps in the CBET program development and implementation.

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