Methods of Financing Technical and Vocational Education and Training, and Entrepreneurship Education to Support Skills Development in Lusaka Province, Zambia

Phillip Mubanga[1], Oo Yu Hock[2, 3], Asif Mahbub Karim[4], Innocent Mutale Mulenga[5]

[1]*Technical Education Vocational and Entrepreneurship Training Authority, (TEVETA), Lusaka, Zambia*
[2]*Asia e University, Kuala Lumpur, Malaysia*
[3]*Binary University of Management and Entrepreneurship, Puchong, Malaysia*
[4]*Binary Graduate School (BGS), Binary University of Management and Entrepreneurship, Puchong, Malaysia*
[5]*School of Education, Curriculum Studies and Teacher Teaching, the University of Zambia (UNZA), Lusaka, Zambia*

Abstract: **-Technical and Vocational Education and Training (TVET), and Entrepreneurship Education are vital components in the economic development equation of any country. However, these training systems can only be effective where sustainable methods of financing TVET and entrepreneurship training are in place.**

In order to obtain information on the most appropriate methods of funding skills development in the two specific skills categories, it was deemed necessary and important to obtain reliable empirical quantitative and qualitative data from the government officers, the industry experts and administrators in vocational institutions.

A questionnaire was administered in all the eight districts of Lusaka Province among purposely selected sixteen TVET administrators. Interviews were conducted with the sixteen purposely selected senior government officers, and sixteen parents of TVET learners selected using snowball sampling. Two respondents were drawn from each respondent group across the eight districts. Since the study adopted a mixed research approach with a concurrent triangulation design, data were analysed through a thematic approach and also utilising descriptive statistics from the Statistical Package for Social Sciences (SPSS).

This article focuses on the evaluation of the most appropriate methods of financing TVET,and Entrepreneurship education with the rationale of improving skills development to mitigate underdevelopment which has mainly contributed to unemployment leading to abject poverty in Lusaka province.

The findings of the study revealed seven appropriate methods of financing TVET and Entrepreneurship education. Furthermore, results showed that lack of funding or inadequate funding were cited as some of the causes of poorly resourced vocational institutions leading to inadequate tools, equipment, shortage of teaching materials in vocational schools and low motivation among the teaching staff and other faculty members.

Key Words: **Technical and Vocational Education and Training (TVET), Entrepreneurship Education, Financing, Skills Development, Underdevelopment**

I. INTRODUCTION

TVET is education and training that accords learners the opportunity to acquire vital knowledge and skills needed for employment, through formal, non-formal and informal training and learning modes, it is an accepted important conduit for delivering social parity, access, inclusion and sustainable development[1][2].

Entrepreneurship can be construed as an activity that involves designing, launching and running a new enterprise, in the initial stages, it may start as a small business, with the potential to grow [3].Entrepreneurship can also be defined as the ability/capacity and eagerness to develop, organize and manage a business undertaking taking on its possible risks with a view to earning aprofit [4].

It is conventional knowledge that education and training of any kind require financial resources if specified learning outcomes are to be attained. On the one hand, TVET by its nature, structure and composition in terms of the occupational standards and curriculum, is expensive compared to general education [5].

Staffing, buildings, other critical infrastructure, machinery, tools, equipment, learning materials are important resources that should be financed and made available in vocational institutions of learning. On the other hand, meaningful entrepreneurship training requires the provision of incubation facilities, in addition to some of the resources that may be provided for TVET.

According to UNESCO [5], Technical and vocational education and training has a cardinal part to contribute to the realisation of the 2030 Sustainable Development Goals. It is a formidable instrument to support entry to respectable work to the world of work. It offers individuals opportunities for lifelong learning and enables both personal development, as

well as civilised, developed and sustainable communities and economies.

Many countries view investing in skills development as a priority responsibility due to the significant socio-economic benefits that can accrue to individuals, businesses and the country as a whole. However, numerous challenges are encountered in developing workable financing mechanisms to change TVET systems to yield the desired developmental outcomes, mainly due to inadequate parliamentary appropriations to vocational training compared to other forms of higher education.

It is clear that for TVET, and entrepreneurship education methods and strategies to cope and align with the global developmental trends and be in the position to scaffold the attainment of the sustainable development objectives, and ultimate aims, the financing aspect is a criticalfactor that requires greater consideration.

The researchers' interactions in the field with respondents concerning the lack of resources at their institutions pointed to the lack of prioritization of funding by the funding agencies. Respondents indicated that present funding for TVET and entrepreneurshipeducation was barely sufficient to sustain the operations of the public vocational training institutions.

This article, therefore, evaluated the most appropriate methods of funding TVET, and entrepreneurship education in Lusaka province of Zambia. There is a strong conviction the findings from the study are current, relevant, and valuable and can positively contribute towards resolving a myriad of financing challenges that are ravaging both public and private training providers in the TVET sector.

II. LITERATURE REVIEW

In sub-Sahara Africa, education has been afflicted by a serious scarcity of funds [6]. It is evident TVET, and entrepreneurship education has single handed been funded by governments. Technical and vocational training is a practice-oriented activity and entails the disbursement of large amounts of financial resources for the purpose of ensuring that there are sufficient numbers of competent and appropriately skilled persons, to support economic and national growth [6].

It was suggested that funding TVET and entrepreneurship education must play a part to ensure there are sufficient financial resources to guarantee the availability of quality training and education. In order to achieve this objective, training providers ought to have the opportunity to raise internally generated funds, partner with companies and solicit for assistance, use alumni associations, as well as philanthropists to mobilize finances [6].

It is interesting to note that some of the Asian countries that are succeeding in skills development do experience financing challenges as well. The Asian DevelopmentBank [7] reported a general perception based on empirical evidence that there is still latitude for improvement in financing vocational training and entrepreneurship education.

It is astounding that China with all its remarkable yearly economic growth rates spends less of its national income on skills development compared to other countries with high per capita with albeit lesser growth rates. TVET was not prioritized and the financial allocation was inadequate. Financial contributions by companies were not substantial. In many developed and industrialized countries, secondary school vocational education is principally sponsored by governments. Student fees are rare and private companies that are involved in the provision of funding may get state rebates [7]. Despite all the several challenges, improving the quality of vocational education undeniably requires reasonable proportions of financial outlay.

A study in Bangladesh on financing TVET concluded that the level of financing was mostly influenced by the government and the community. Apparently, serious flaws and deficiencies in respect of adequacy, access and efficiency were highlighted. Furthermore, the revelation was that the training modes and systems were centralised and non-responsive to industry and communities [8]. The trend so far seems to paint a bleak picture on the financing of vocational training, however, there are inspiring results from Germany, according to OECD [9], the dual vocational system of Germany is robust, well-developed amalgamating work-based and school-based learning to groom apprentices for a successful transition to full-time employment and the entire system is well-resourced and financed through both public and private funding. The financial resourcingfor TVET is solid and strongly supports the apprenticeship system through and through [9].

Moving across to Finland, funding for the Finnish TVET is a responsibility of the Ministry of Education &Culture (MoCE).Uniform criteria are utilised to fund both public and private vocational training providers. Funds are disbursed through the government and local authorities.The minor differences in terms of standards between private institutions and publicly owned institutions are attributed tothe funding model in use. The funding is allocated based on the number of learners enrolled by the institutionand the unit prices set by MoCE,these vary in accordance with the various occupational fields.It was reported that the relative total expenditure on different educational sectors such as comprehensive education and university education increased in large proportions over the years, while, the sector of school-based vocational education had marginal increments[10].

Switzerland is another country that has strongTVET systems in Europe. Learners are prepared for a wide array of occupations encompassing high-tech, human services and health-related jobs to conventional trades and crafts. Formidable financial support comes from Swiss employers who acknowledge the quality of the TVET system as being responsible for the strong Swiss economy and ultimately the

nearly full employmentleading to a high standard of living [11].

The TVET system in Singapore is a very popular route for students. The apprenticeship system has been spearheaded and funded by the government. Recently, there has been a wave of substantial funding and aggressive investments in vocational training, as it has been used as a foundation and cornerstone of the country's economic development strategy. The system is uncompromisingly meritocratic, options are given to students based on their performance. The number of students enrolled on the various Institute of Technical Education (ITE) is based on specific numbers determined by the National Manpower Council according to the skill sets demanded by the industry. As much as performance in the examination is used as the criterion for selection for vocational programmes, the government goes an extra mile to provide funding for specialized support to enable weaker students to meet the same standards as their peers [11]. The government in Singapore has incurred huge expenditure for many years to buildand establish TVET as the backbone of its economy.

The United States does not have any cohesive TVET system that cuts across the whole country, that can be compared to those found in Switzerland and Singapore. Likewise, funding comes from different sources such as government, private sector and not-for-profit organisations. In the recent past, some States in America have started adopting and adapting some of the strongest vocational systems in Europe and Asia with models of excellence, especially Work-based learning, a component essential for instilling initiative, enabling learners to apply their knowledge and skills in actual workplace and ensuring they start working productively on the first day oftheir working life. [11]. In the United States, TVET sometimes is referred to as the Career and Technical Education (CTE), States can explore strategies and processes to strengthen the quality of CTE programmes and provide students with pathways to postsecondary credentialing, middle and higher wage career opportunities. There are various funding models the State policymakers can consider as they prioritize their State CTE programmes offerings and desired outcomes. Policymakers in different States can develop their specific CTE funding approaches to enact high-quality CTE programmes and maximize long-term student success. Each State takes a unique, and often complex, approach to funding education, and these variations are often compounded with CTE funding. There are wide ranges of possible funding sources and stakeholders involved in providing workforce education. The main categories of funding include Federal funding, State funding, local funding and private investments [12].

In Nigeria, a study to search for the appropriate fundingmechanisms that may be adopted for effective and efficientplanning, implementation, and sustainability of entrepreneurship education was conducted. The general perception by stakeholders was that entrepreneurship education was capital intensive, as such required proper funding to avoid frustration which was observed as a general characteristic that other development programmes experienced in that country. The findings indicated that entrepreneurship education could be funded by the government usingdifferent types of grants in order to enhance economic growth and national development [13].

TVET funding in most developing countries is usually from three key sources comprising government grants, student fees, and the private sector. There are other sources consisting of employee contributions, private donations, internally generated income, and external assistance (development grants and co-operating partner loans). TVET providers normally have a different mixture of funding streams across the countries. In most cases, the primary source of funds in many public TVET institutions significantly isgovernment funding, while student fees constitute the major source of funds for privately ownedtraining providers. In-service training costs in companies are principally borne by the respective companies [14].

Latin America and the Caribbean countries have embraced Sustainable Development Goals (SDGs). According to UNESCO's sustainable development goal number 4, inclusive quality education is a foundational requirement for attaining sustainable socio-economic development.Technical and vocation education and training is one way of investing in skills development which has a significant impact on economic performance for the good of individuals and society as a whole. Financing for TVET in Latin America and the Caribbean is mainly from governments (public sector),companies/firms (private sector) and households [15].

In Australia, TVET is publicly supported and subsidised. There is the National VET Funding Collection from skills levy contributionswhich has three distinct components: Jurisdictions' contributions and allocations; Funding activities and distributions, and funding for VET student loans; and public VET asset base. The whole process is superintended by the Australian Government Department of Education and Training, and State and territory departments responsible for VET. Direct and indirect funding for VET includesemployer incentive programmes for workforce training [16]. Recently, the Skilling Australian Fund (SAF) levy was introduced which replaced the previous training benchmark[29].

In Ghana, TVET institutions have to marshal funds to procure training equipment, tools, instructional and learning materials to enable students to practice on them to acquire vital skills for their sustainability. Funds can be raised through various means such as training with production (products made during training can be sold for a profit); Non-Government Organisations (NGOs) can provide partial financing of vocational programmes; the TVET institutions can generate own internal income by offering several services to private and public enterprises, the other source is the vocational training funds. In other countries tax contributions from the

employers collected through payroll levies or subsidies, international donor agencies such as the World Bank, UNESCO, and UNICEF are other sources of funding.Fundingis important as it is also required for other core activities that are expensive such as training and hiring TVET personnel [17].

The educational system of the Philippines is mainly influenced by the United States. The country has registered a sharp rise in the number of learners and vocational institutions. TVET in the Philippines falls into four categories, School-based, Centre-based TVET, Community-based, and Enterprise-based. Most TVET schools are private[18]. Based on the findings of the study, policymakers in the Philippines are directed to consider the policy recommendations on decentralizing TVET under the proposed federal system. TVET policy formulation, planning, standard-setting and regulatory functions should be assigned solely to the national government so that vocational training governance is harmonized across jurisdictions, and to be consistent with the national government's equity goals; financing/contracting for vocational education can initially be assigned as a "shared function" between the national and subnational governments; however, in the long term, the subnational governments should develop their local revenue generation capacity and eventually be responsible for TVET financing/ contracting in their jurisdictions. A study implored policymakers to consider alternative models for financing such as inclusion of TVET in the existing Special Education Fund (SEF) and establishing a TVET Training Fund; provision of TVET training services can be a shared function between the federal and subnational governments; with the primary responsibility of ensuring availability of TVET services in the country remaining with the subnational governments[19].

The main sources of financing TVET in the Republic of South Africa may include appropriations from the National Skills Funds, sector education and training authorities(SETAS) and Fund, employers[20], households(Student fees) and donations from donor agencies and cooperating partners. There are also funds made available by the SETAs and by the Department of Higher Education and Training[21].

There are two main sources of funding for vocational training in Vietnam: State budget and non-state budget to support training and provide skilled manpower needed in business and production activities and technology transfer. TVET institutions are supervised by the Directorate of Vocational Education and Training (DVET). Vietnam has exhibitedremarkable performance as far as economic growth and poverty reduction is concerned in the last 3 decades.Despite this commendable feat, creating employment for the ever-growing population is a daunting responsibility for the government. At present funding is crucial to match with rapid growth, structural changes and the needs of Vietnam to strengthen its position in the global and increasingly knowledge-based economy that require a sophisticated workforce that is technically up-to-date, highly qualified, adaptable, flexible and innovative. A combination of these factors constitutes a heavy challenge to the system of TVET. Vietnam is innovating and improving the quality of TVET in order to make a strong change in the quality and effectiveness of TVET to meet the human resource requirements of regions, sectors of the economy, in which a part of high-quality human resource approaches the level of developed countries, contributing to improving labour productivity, quality of growth and competitiveness of the economy in the context of international integration. Adequately, financially resourced vocational training in the country can ensure the promotion of human resource skills development, needed to support a modern industry and innovation, improving market institutions and infrastructure development [22].

Training levies are an essential instrument that can be utilised to collect funds that can be channelled to causes of skills development. Three main categories of schemes are identifiable, these being revenue-generating schemes, levy-subsidies schemes, and levy-exemption schemes. Furthermore, training funds can be classified by the type of levy bases such as company profit tax, a levy on foreign workers, payroll, fixed amount per worker, and social security fund [23].

The social welfare group (SWG) in Malaysia runs programmes that offer equal educational opportunities for disabled people, who may also engage in TVET related activities as well. The SWG's source of financing is mainly from the donors, beneficial Programmes (beneficial programmes are a form of fund-raising activities managed by NGOs asspecial events to gain funding for communities),and commercialisation (social enterprise, and or mass media) as ways of mobilising sustainable funding of their operations [24].

All around the world the importance of technical and vocational education and training has been acknowledged as a medium for economic and industrial growth [25]. As noted from the literature review, it has also been established that implementing TVET systemsis expensive owing to the capital intensive nature of the education. It has been noted that African leaders despite being aware of the value of vocational training, they do not take serious measures to lift TVET to the position that it rightly deserves [25]. Furthermore, in another study, it was observed that most of the vocational training systems in Sub-Saharan Africa experience plummeting government funding [26]. Sustainable methods of financing and reinforced resourcing of TVET can ensure the proper functioning of TVET institutions, able to produce high-quality graduates competent and prepared for today's changingworld of work.

III. THEORETICAL FRAMEWORK, CONCEPTUAL FRAMEWORK, AND CONCEPTUAL MODEL

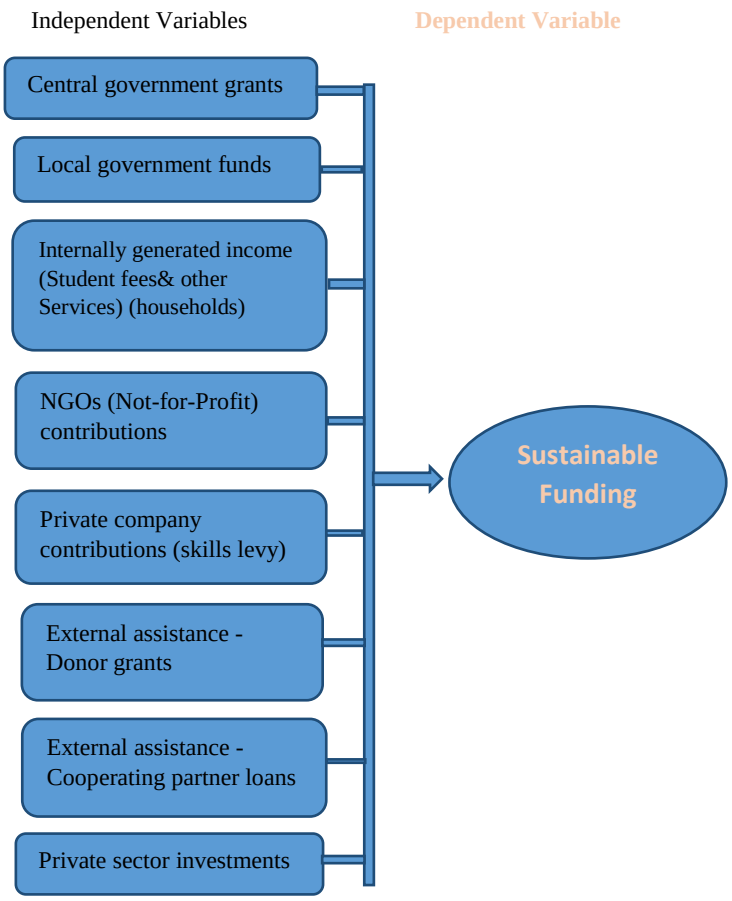
Theoretical Framework

The Concept of Technical and Vocational Education and Training (TVET) and the Entrepreneurship Education theory formed the theoretical framework of the main study from which this paper is extracted. The Concept of TVET covers the aspects that encompassthe gaining of knowledge, skills and competencies for the world of work [27]. The Entrepreneurship Education theory considers entrepreneurship education as an essential factor that stimulates the students' formation of entrepreneurial intentions in the learning institutions [28].

Conceptual Framework

This article conceptualises that for TVET, and Entrepreneurship Education to take place effectively and efficiently, adequate financing of the vocational institutions is a pre-requisite. Sufficient funding is required for construction and maintenance of vocational buildings and peripheral infrastructure, procurement of equipment, tools, learning materials, as well as providing funds for training and hiring faculty human resource. Therefore, the conceptual framework is premised on the sources of funding TVET, and Entrepreneurship Education. The independent variables for the conceptual model are central government grants, local government funds, student fees (household), private company contributions (skills levies), NGOs/Not-for-profit contributions, donor grants, cooperating partner loans, and private investments. The intervening variables include TVET and entrepreneurshippolicy, community engagement, Industry Collaboration, and cooperating stakeholder agreements. The dependent variable is Sustainable Funding. The intervening variables put together are intermediary factors (catalysts) between the independent variables and the dependent variable, in that they create an enabling environment that facilitates attainment and smooth flow of sustainable funding to provide adequate financing for TVET, and entrepreneurship education. Figure 1 shows the conceptual framework model. The concept is that, the face of Lusaka province can be transformed into a wealthy and prosperous society considering the massive and abundant natural resources endowment, if robust policies, institutional leadership, and adequate funding are put in place that can prop TVET, and entrepreneurship education to train the available huge youthful population in the province, converting them into a skilled human resource 'army' that can get involved in transforming the underdeveloped economic landscape of the province to prosperity. The concept can be rolled out to all ten provinces in Zambia in order attain rapid progress towards industrialization and economic growth as envisaged in the country's 2017 -2021 Seventh National Development Plan and the Vision 2030.

Figure 1: Conceptual Framework Model



Source: Author's own design

IV. FINDINGS AND DISCUSSION

In this section, the results relating to the research question are presented. The research question read as follows:

What are the most appropriate methods of financing TVET, and entrepreneurship education that can be used to address lack of vocational skills leading to unemployment in order to drive sustainable economic development in Lusaka province, Zambia?

The questionnaire administered to TVET administrators, and interviews conducted with senior government officers and parents of TVET learners, elicited for information to indicate what they thought were the most appropriate sources of financing TVET, and Entrepreneurship education.

Mean, standard deviation and t-tests for sources of financing TVET and entrepreneurship

In order to obtain an in-depth understanding of the data from the questionnaire, descriptive statistical analysis was performed using SPSS in to facilitate comparison of the frequencies, totals, means and standard deviations of the responses of administrators from the eight districts in Lusaka province. The survey questions are shown in Appendix 1.

Table 1: Mean and standard deviations for the most appropriate sources of financing TVET and Entrepreneurship Education

	N	Mean	Std. Deviation	Std. Error
a. Government grants.	16	3.38	0.719	0.180
b. Student fees.	16	3.13	0.885	0.221
c. Private sector funds	16	3.44	0.814	0.203
d. Private company contributions (skills levy)	16	2.94	0.929	0.232
e. Employee contributions.	16	3.50	1.033	0.258
f. Internally generated Income other services and regulatory fees.	16	2.69	1.078	0.270
g. External assistance in the form of donor grants and cooperating partners loans/ NGOs	16	3.56	0.814	0.203

Table 1 shows results analysed using the four-point Likert scale as shown in Appendix 1 of the questionnaire for the most appropriate sources of financing TVET and Entrepreneurship education. The questionnaire was administered to 16 administrators. The results indicated that the mean score ranged from 2.69 for (f) the lowest to 3.56 (highest) for (g). The mean for all the items (a) to (g) was above 2.50 (middle score) and the range for the standard deviations for all the items (a) to (g) was from 0.719 to 1.078 respectively. The interpretation is that overall, the responses from the 16 administrators on average were positive. Table 2 shows the actual responses for each item.Administrators' responses as shown in Table 2 item (a) revealed that 12.5% indicated that government grants as a source of funding TVET and entrepreneurship education were a small challenge, to the contrary majority of the respondents at 87.5% indicated that obtaining grants from the government was a big challenge and unreliable source of funding. Item (b) results from respondents indicated that 31.2% indicated that Student fees as a source of funding TVET and entrepreneurship education were not so much of a challenge, to the contrary majority of the respondents at 68.8% indicated that student fees as a source funding TVET was equally a daunting problem.

Frequency and Percentage distribution of the most appropriate sources of financing TVET, and Entrepreneurship Education

Table 2 item (c) shows results from respondents that indicated that 18.8% of them were of the view that private sector funding was readily available as a source of funding TVET and entrepreneurship education. However, many respondents at 81.2% indicated that private sector funds as a source funding TVET were not readily available.

As displayed in Table 2 item (d) results from respondents 12.5% indicated that payroll levies from companies as a source of funding TVET and entrepreneurship education were not a challenge at all, 6.3% thought it a small problem, while 81.3% acknowledged that was a big challenge.

As displayed in Table 2 item (e) respondents at 12.5% indicated that employee contributions as a source of funding TVET and entrepreneurship education were not a problem, and 87.5% indicated that employee contributions as a source funding TVET were a problem. Item (f) results from respondents show that 18.8% indicated that Income generated from services offered by training providers and regulators was a sufficient source of funding TVET and entrepreneurship education. 18.8% thought is a small problem, the rest at 62.4% thought it was still a problem. Item (h) shows results from respondents that indicated 18.8% of them were of the view that external assistance in form of donor grants and cooperating partner loans as a source of funding TVET and entrepreneurship education was a small problem. Many respondents at 81.2% indicated that funds from external assistance were not readily available.

One-sample t-test for most appropriate sources of financing TVET and Entrepreneurship education

Table 3 shows the results of one-sample t-test for the most appropriate sources of financing TVET and entrepreneurship education variable of (n) 16 TVET administrators. The confidence level was set at 95% or significance level of (p) 0.05. The population mean and standard deviation are presented in table 1. The one-sample t-test was a comparison between male and female administrators that participated in the survey. The degree of freedom (df) was n-1, in this case, 15.The mean differences between the genders are tabulated in Table 3. The significance level (2 tailed) for the questions as indicated in the table above are below 0.05 and in all the cases the mean score was above the test value of 3 (being the middle point on the Likert scale). The rest of the results in Table 3 are stated as follows; $t(15) = 4.869$, $p = 0.000$ for government grants; $t(15) = 2.825$, $p = 0.013$ for student fees; $t(15) = 4.607$, $p = 0.000$ for private sector funds; $t(15) = 1.884$, $p = 0.079$ for payroll levies from companies; $t(15) = 3.873$, $p = 0.002$ for employee contributions; $t(15) = 0.696$, $p = 0.497$ for Income generated from offering other services and regulatory fees; $t(15) = 5.222$, $p = 0.000$ for external assistance in form of donor grants and cooperating partners loans. The null hypothesis is rejected on account of the results being statistically significant.

Table 2: Frequency and Percentage distribution of the most appropriate sources of financing TVET and Entrepreneurship Education

Statement	Not at all a problem			Minor Problem			Moderate Problem			Serious Problem		Total	
	Freq.	%	cum%	Freq.	%	cum %	Freq.	%	cum %	Freq.	%	Freq.	cum %
a. Government grants.	0	0	0	2	12.5	12.5	6	37.5	50.0	8	50	16	100
b. Student fees.	0	0	0	5	31.2	31.2	4	25.0	56.2	7	43.8	16	100
c. Private sector funds	0	0	0	3	18.8	18.8	3	18.8	37.6	10	62.4	16	100
d. Private company contributions (skills levy)	2	12.5	12.5	1	6.3	18.8	9	56.3	75.0	4	25.0	16	100
e. Employee contributions.	2	12.5	12.5	0	0	12.5	2	12.5	25.0	12	75.0	16	100
f. Internally generated Income other services and regulatory fees.	3	18.8	18.8	3	18.8	37.6	6	37.4	75.0	4	25.0	16	100
g. External assistance in the form of donor grants and cooperating partners loans/ NGOs	0	0	0	3	18.8	18.8	1	6.2	25.0	12	75.0	16	100

Key: Freq. = Frequency; Cum = Cumulative

Table 3: One-sample t-test for most appropriate sources of financing TVET and Entrepreneurship education

	Test Value = 2.5					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
a. Government grants.	4.869	15	0.000	0.875	0.49	1.26
b. Student fees.	2.825	15	0.013	0.625	0.15	1.10
c. Private sector funds	4.607	15	0.000	0.938	0.50	1.37
d. Private company contributions (skills levy)	1.884	15	0.079	0.438	-0.06	0.93
e. Employee contributions.	3.873	15	0.002	1.000	0.45	1.55
f. Internally generated Income other services and regulatory fees.	0.696	15	0.497	0.188	-0.39	0.76
g. External assistance in the form of donor grants and cooperating partners loans/ NGOs	5.222	15	0.000	1.063	0.63	1.50

Analysis of Variance (ANOVA) for sources of financing TVET, and Entrepreneurship Education

Table 4 on the next page, shows results of one–way Analysis of Variance (ANOVA) for most appropriate sources of financing TVET and Entrepreneurship education variable. The results show that the 2-tailed significance level was less than the threshold confidence level of 0.05 which is statistically significant for items (a) to (g) with a significance values of 0.000 for (a), (c) and (g); 0.13 for (b), 0.079 for (d) and 0.002 for (e). The responses were statistically different for items (a) to (g) except for (d). On the basis of these responses between the groups and the mean scores, the null hypothesis cannot be accepted. See Table 3 for the mean differences. The Sum of Squares also indicated that the results are statistically not far dispersed from each of the data points, showing narrow deviations from the mean.

Table 4: One-Way Analysis of Variance (ANOVA) for sources of financing TVET and entrepreneurship education

		Sum of Squares	df	Mean Square	F	Sig.
a. Government grants.	Between groups	0.368	1	0.368	0.698	0.417
	Within groups	7.382	14	0.527		
	Total	7.750	15			
b. Student fees (households)	Between groups	0.041	1	0.041	0.049	0.828
	Within groups	11.709	14	0.836		
	Total	11.750	15			
c. Private sector funds (private investments)	Between groups	1.392	1	1.392	2.281	0.153
	Within groups	8.545	14	0.610		
	Total	9.938	15			
d. Private company contributions (skills levy)	Between groups	0.138	1	0.138	0.150	0.704
	Within groups	12.800	14	0.914		
	Total	12.938	15			
e. Employee contributions.	Between groups	0.655	1	0.655	0.597	0.453
	Within groups	15.345	14	1.096		
	Total	16.000	15			
Internally generated Income other services and regulatory fees.	Between groups	3.692	1	3.692	3.760	0.073
	Within groups	13.745	14	0.982		
	Total	17.437	15			
g. External assistance in the form of donor grants and cooperating partners loans/ NGOs	Between groups	0.192	1	0.192	0.276	0.608
	Within groups	9.745	14	0.696		
	Total	9.938	15			

Summary of Interviewresponses of senior government officers on the financing of TVET, and Entrepreneurship Education

Interview guide questions elicited responses to provide some of the answers to the research question. The senior government officers were drawn from both the Ministry of Higher Education (MoHE) and the Ministry of General Education (MoGE) from the eight districts in Lusaka province. The questions that were posed are reproduced below with corresponding responses. In answering how a combination of TVET, and Entrepreneurship education played a role in addressing lack of vocational skills leading to unemployment, it was vital that data was collected from these officers who are involved in making vocational training policies and regulation of TVET in the country.When asked whether there wereexternal assistance and support for TVET in Zambia, One of the senior TVET government Officer's response was that:

> Yes, there is assistance and external support for TVET. For instance, at the moment we are having support from the Africa Development Bank, which has pumped in about 25 million units of accounts, which is approximately US$30 million or so, which is quite substantial, then we have the Chinese who have given us technical assistance, we also had UNESCO, we also had the United Nations Industrial Development Organization (UNIDO) who are supporting us at the Northern Technical College in Ndola, in terms of the Zambia Industrial Training Academy, this is a multilateral institution. UNIDO supports us in terms of industrialisation. And industrialization includes skills training. We also havethe International Labour Organization(ILO) assistance. Then we have institutions like the Japan International Cooperation Agency (JICA) who support us with volunteers. But in terms of financing, at the moment mainly we have the Africa Development Bank who are financing us through a soft loan to support skills development.

Another senior government Officer responded as follows:

> We may not be enjoying a lot of external assistance, especially when you look at it from the point of view of financing but what is good to mention is that all over, TVET is top on the agenda of every cooperating partner including the private sector. We therefore see a lot of opportunity in TVET in terms of assistance and cooperation and in that regard we just need to be on the lookout ourselves and see who we can partner with and also identify our needs so that even our partnerships target those needy areas which can enhance the quality and effectiveness of our TEVET system.

Senior government officers were asked to comment on the current modes of financing TVET, and Entrepreneurship education and which ones were the most sustainable. A senior TVET government Officerhad the following to say:

> That is a very complex question. We needto understand that there is public TVET and private TVET. Private TVET institutions are for private entrepreneurs and I cannot comment much on that. It is up to the owners, to decide how much they want to put in the institution. Thoseare investment decisions on their part. But when you come to public TVET, we have grants, which the treasury through central government gives to all our TVET institutions on a monthly basis. Then there is the TVET bursary, which is based on enrolment, the more students you enroll, the more resources you are bound to receive as an institution. But also we have consultancy fees, which institutions earn as part of their internal income generation. These may include renting out facilities or maybe doing technical work for a particular organisation. In the recent past, there was the introduction of the Skills Development Levy (SDL) which has been pooling funds into the Skills Development Fund (SDF). Now, on the Skills Development Fund, government alone cannot be funding TVET. Since independence from 1964, the government has been financing TVET alone for a long time for both public and private consumption. So it was just a request that for the graduates coming from vocational institutions, from here and there, the private sector should make a contribution towards skills development. So the more sustainable method of financing is the Skills Development Fund itself and government grants plus contributions from the parents, which should be like a subsidy, in the form of student fees. When these sources are added together, they reduce the cost of running TVET. But depending on government grants alone, or the skills levy alone is not sustainable. The answer is no, because there is an extent to which you can levy corporate firms, otherwise you risk making them less competitive. There is a limit to any single source of financing TVET, a combination is required to make it sustainable. And our problems in TVET are huge, therefore, the most effective way of financing TEVET is cost sharing, cost sharing is a very sustainableway of financing TVET and Entrepreneurship education.

Yet another senior government officer responded:

> For a long time, most of our TVET has been financed by either the government through appropriations from the treasury through grants and also some of the students have benefited from bursaries. But the majority of our students pay school fees. So in this manner families have been contributing greatly to our TVET system. We have a few that may be sponsored by their employers. These are the main financiers of TVET at the institution level. But you may be aware that now the government introduced a Skills Development Fund (SDF).The SDF pools resources which are contributed by employers at the rate of 0.05 per cent of the payroll as skills levy towards the fund and then government disburses the funds to support TVET programmes through different windows. Some of the money is channeledto infrastructure development, buying education and training materials, while other funds have supported the actual paying of fees for some of the students that have been identified in skills priority areas.

Summary of Interview responses of Parents of TVET learners

The Interview guide questionswere meant to solicit responses to provide some of the answers to the research question. The parents of TVET learners were selected in the eights districts in Lusaka province through snowball sampling. The researchers had asked parents to state who was responsible for paying for the education expenses for their children or dependents.

A response from one of the guardians was:

> I pay all the college fees and expenses. I know she will end up having a skill that can help her have a better life even without a higher academic qualification.

Another parent's response:

> In fact, the tuition fees are substantially paid for by the government through the Social Welfare programme.

Yet another guardian's response was that:

> I have been looking after an orphan, I am grateful that he was awarded a full bursary. However, there are certain expenses that we have to pay, especially when the bursaries are delayed.

Summary of findings for Research Question

This section presents the summary research findings. A number of sub-questions derived from the main research question were utilised to solicit responses and the data were analysed through SPSS and the results indicated acknowledgement that the list in table 1 included some of the most appropriate methods of financing TVET and entrepreneurship education. Knowing the appropriate methods of financing was important in order to effectively harness TVET and entrepreneurship education to help in mitigating the lack of vocational skills leading to unemployment. The responses came from TVET administrators, senior TVET government officers and parents of TVET learners drawn from the eight districts of Lusaka province.

Descriptive statistics, t-tests and ANOVA tools in SPSS were used to analyse and interpret the research results. The findings in answering the research question revealed that responses were indeed accepting the hypothesis, concerning the most appropriate methods of financing TVET and Entrepreneurship education as one of the solutions of addressing lack of vocational skills leading to unemployment. According to the research findings, the following are some of the most appropriate sources of funding TVET and entrepreneurship education:

- Government grants;
- Student fees (households);
- Private sector investments;
- Company contributions (skills levies);
- Employee contributions (payroll based);
- Internally generated Income from services offered by TVET training providers and regulation fees;
- External assistance in the form of donor grants/ NGO contributions and cooperating partners' loans.

The information derived during the analysis and discussions of the findingson the appropriate sources of financing TVET and Entrepreneurship education provided valuable information for making conclusions and recommendations which appear in the last two sections of this paper.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The Research question solicited for data to provide answers in order to evaluate the most appropriate methods of financing TVET and entrepreneurship education that can be used in trying to address lack of vocational skills leading to unemploymentin Lusaka province.

Data was collected using a questionnaire for administrators and interviews were conducted with government officers, and parents of learners. Descriptive statistics for the frequencies, mean and standard deviations were generated, One-sample t-tests and ANOVA were performed. The findings showed that appropriate sources of financing TVET and entrepreneurship education were necessary. The following sources were confirmed as the most appropriate: (a) Government grants; (b) households (Student fees);(c) Private sector investments; (d) Company contributions (skills levies); (e) Employee contributions (payroll based); (g) Income generated internally from services offered by training providers and regulators; and (g) External assistance in the form of donor grants, NGO contributions and cooperating partnerloans.

Therefore, based on the findings that were confirmed, it was thus concluded, that the most reliable and sustainable source of financing TVET and entrepreneurship education is a combination of all the sources listed in (a) to (g) above and that one source alone to the exclusion of all others cannot be effective and sustainable.

Recommendations

Adequate funding should be provided for successful technical and vocational education and training, as findings indicated that poor funding to the TVET sector, the training institutions and the TVET regulator had compromised the delivery of quality TVET and was one of the major factors contributing to the lack of skills and the skills gaps in most of the graduates.

The most reliable and sustainable source of financing TVET and entrepreneurship education that should be used in the TVET sector according to the findings is a combination of all the sources listed in (1) to (7) below and that one source alone to the exclusion of all others cannot be effective and sustainable.

The following sources were confirmed as the most appropriate: (1) Government grants (Central and local government); (2) Households (Student fees); (3) Private sector investments; (4) Companies contributions (skills levies); (5) Employee contributions (payroll based); (6) Income generated from services offered by training providers and regulators; and (7) External assistance in form of donor grants, NGO contributions and cooperating partner loans.

This research revealed a lot of problem areas in the TVET sector as indicated in the findings. The problems require attention and these cannot adequately be dealt with in a single study. As earlier stated, there is renewed interest and debate in the country on the topic of TVET and Entrepreneurship education.Therefore, future research is proposed in the areas highlighted below:

The scope of this study was confined to Lusaka province only. However, the issues raised affect the entire country, hence the need to carry out similar studies to extend to all the ten provinces in Zambia.

Future research can be conducted on how TVET and Entrepreneurship education have contributed to the Tiger economies of the Asian countries to justify its importance in the industrialisation equation and the positive impact it has on social economic development of those countrieswith the possibility of adopting, adapting and replicating some of those successful TVET best practices in Zambia.

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APPENDIX 1

Most appropriate sources of Financing TVET and Entrepreneurship (Extract from part C of the main questionnaire)

	Statement	Serious problem	Moderate Problem	Minor problem	Not at all a problem
		4	3	2	1
1	Government grants as a source of funding				
2	Student fees(households funds) are a readily available source of funding				
3	Private sector funds (private investments) as a source of funding are easily accessible.				
4	Companies contributions (skills levy) as a source of funding are adequate.				
5	Employee contributions as a source of funding are easier to collect.				
6	Internally generated Income from services offered by training providers and regulation feesisa sufficient source of funding.				
7	External assistance in the form of donor grants or NGOs donations and other cooperating partner loans as a source of fundingisreadily available.				