Does Technical and Vocational Education and Training (TVET) Enhance Employability through Motivation for Lifelong Learning? Empirical Evidence from Uganda.

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Table of Contents

Abstract

Technical and Vocational Education and Training (TVET) is one of the policies most commonly used in developing countries to tackle the unemployment issue. An analysis of TVET literature highlights a lack of empirical data on the topic. The present research examines the extent to which TVET in Uganda influences the employability of its participants and to what extent this relationship is partially mediated by motivation for lifelong learning (LLL). The results are based on a sample of 249 Ugandan youth, 153 of which participated in TVET while the remaining part did not participate and for this reason was used as a control group. The results of this study show that TVET does not significantly influence employability and motivation for LLL. However, motivation for LLL was found to be significantly and positively correlated with employability. Recommendations for future researchers and policy makers are reported in the final part of the paper.

Keywords: Technical and Vocational Education and Training, Employability, Self-perceived Employability, Motivation for Lifelong Learning, Uganda

Does Technical and Vocational Education and Training (TVET) Enhance Employability through Motivation for Lifelong Learning? Empirical Evidence from Uganda.

Youth unemployment in Uganda is a major issue for the development of the country, posing both economic and security concerns. The estimation made by the World Bank Survey (2008) shows the amount of youth unemployment to be 83%. Counter-intuitively, unemployment among those with secondary education or above is three times higher than those with no education attainment (World Bank, 2008). This data shows the substantial difficulties of youth possibilities for participation in the labour market, especially for more qualified jobs (Elder & Koné, 2014).

The Ugandan school system has been criticized for being too academic, underestimating the importance of vocational skills, which resulted in a mismatch between the scholastic preparation and the needs of the labour market (Benson, 2011; Blaak, Openjuru, & Zeelen, 2013). Ajufo (2013) claims that the lack of employable skills due to improper school curricula is an important factor contributing to the rising youth unemployment.

Given the difficulties of the formal education to balance theory and practice, in addition to the high number of graduates unable to find a qualified employment, different policies have been promoted as possible solutions. Technical and Vocational Education and Training (TVET) is one of the measures that tries to tackle the unemployment issue. Broadly defined, TVET is concerned with the acquisition of knowledge and skills for the future professional career of individuals (Tripney et al., 2013).

According to the African Union (2007), two of the most important strategic objectives of TVET are to assure the employability of trainees and to promote motivation for lifelong learning (LLL). These two key concepts will be elaborated upon below.

Broadly defined employability refers to "the individual's perception of his or her possibilities of getting new employment." (Berntson & Marklund, 2007, p. 281). According to Forrier and Sels (2003), young people who are seeking employment in an environment of widespread unemployment, employability is of crucial importance. 'Lifetime employability' instead of 'lifetime employment' is the new safeguard in the labour market. Others, like Harvey (2003), consider employability as the gateway to employment.

To increase their employability, individuals have to demonstrate a propensity for learning. In fact, motivation to learn is an important prerequisite for employability (Fugate, Kinicki, &, Ashforth, 2004; Morey 2002; Tomlinson, 2007). In the 21st century, it is very important for firms to have employees willing to learn to maintain or gain a competitive advantage in global markets. Thus, individuals have to be willing to learn in order to constantly update their skills. Ultimately, they have to become lifelong learners (McCombs, 1991). The concept of lifelong learning (LLL) refers to "the activities people perform throughout their life to improve their knowledge, skills and competence in a particular field, given some personal, societal or employment related motives" (Koper & Tattersall, 2004, p. 689). Lifelong learners are 'self-directed' (Brockett & Hiemstra, 1991), meaning that it is their own responsibility to commit to their learning process and not that of educators and institutions (Koper & Tattersall, 2004).

Hughes (2005) argues that TVET, besides leading to productive work can trigger students' motivation for continuous learning. According to the author, TVET enhances student's interest, given its direct link with the world of work, which results in an increasing motivation to learn. Thus, TVET can be considered as a vehicle that generates lifelong learners. These characteristics enhance their employability since they are more attractive to the flexible labour market. Nonetheless, there seems to be a lack of (updated) theoretical evidence.

The present study examines whether motivation for LLL partially mediates the relationship between TVET and employability. To the best of my knowledge, the proposed model has never been empirically tested before. This research aims at filling this gap in the literature by

providing new data and insights on the topic and exploring if TVET is an effective measure to promote employability and lifelong learners. This will be accomplished by assessing if Career Imagination Program Uganda (CIP Uganda, a TVET program) is an effective tool to increase the employability of the youth that took part in this training and if it increases the motivation for continuous learning of its participants. CIP Uganda is a practical skills program developed in 2012 during an annual conference of the Organization for Economic Co-Operation and Development (OECD). Through a range of programs and activities, CIP Uganda provides students with practical and relevant skills for the present-day job market. After four years of launching the program, CIP Uganda is operating in twelve schools with over 10.000 following vocational programs to complement their academic curriculum.

In sum, the present study examines the relationship between TVET and employability among high school students in Uganda. Additionally, it examines whether motivation for LLL facilitates this relationship. This leads to the following research question: *to what extent does TVET enhance the employability of young students and is this relationship mediated by motivation for lifelong learning?*

Theoretical framework

The academic debate about TVET

McGrath (2012) argues that defining TVET is problematic because of the wide range and types of vocational training and the different institutions providing it. In the present study, the definition provided by the International Centre of Technical and Vocational Education and Training (UNESCO-UNEVOC) will be adopted: "TVET is concerned with the acquisition of knowledge and skills for the world of work to increase opportunities for productive work, sustainable livelihoods, personal empowerment and socio-economic development" (Maclean & Wilson, 2009, p. IX).

There are two main strands in the literature on TVET. The first considers TVET as an unproductive policy (Abrokwa, 1995; Foster, 1966; Oketch, 2009; Psacharopoulos, 1997), and

the second is optimistic about its developmental potential (Ajufo, 2013; Hughes, 2005; McGrath, 2012; Nilsson, 2010; Powell, 2012: Tripney et al., 2013).

The academic dispute about the positive effects of TVET on economic development dates back to the sixties. During May 1961 in Addis Ababa one of the resolutions adopted by the ministers of education from across Africa was the incorporation of vocational education into the school curriculum to improve the productivity of the agricultural sector (Abrokwa, 1995). Advocates of this decision claimed that providing students with basic occupational skills would have enabled them to enter the job market and help to mitigate the unemployment issue (Abrokwa, 1995). Nowadays proponents of TVET consider it as an effective measure for fostering economic growth and reducing poverty. The skills acquired during the training are seen as easily applicable in a related work setting which increases the productivity and promotes long-term economic advancement (Comyn & Barnaart, 2010; McGrath, 2012; Nilsson, 2010; World Bank, 2008).

However, several researchers have challenged these assumptions. After conducting a research in Ghana, Foster (1966) argued that unemployment among the educated was the result of increased education level against a rather stagnant economy. The sudden increase in education rates was not followed by an equally rapid growth of the labour market. In fact, the tertiary sector has been unable to provide occupation for most of the new graduates. Integrating TVET into the school curriculum would have contributed very little to the unemployment issue (Abrokwa, 1995; Oketch, 2009). Psacharopoulos (1997) argues that TVET has failed because it has been used as the only policy instrument to solve a complex set of issues with too much emphasis on intuitive logic rather than empirical evidence. In fact, research on TVET is limited and the findings are inconsistent and not always promising (Oketch, 2009).

Backing these critics, research evidence produced by the World Bank and other institutions in developing countries found vocational education has been unable to reach its goals. Those who graduated with a TVET curriculum stayed unemployed longer compared to those who

graduated with an academic curriculum and on average their wages were lower (Oketch, 2009). In his review of the current situation of TVET in Africa, Oketch (2009) criticizes governments that still fund TVET curriculums "even when there is compelling evidence that it can be a wasteful public investment" (p. 533).

To cast new light on the debate, McGrath (2012) remarks that TVET is grounded in an outmoded model of development, and the critique of TVET in developing countries is outdated. This is supported by insufficient TVET research and theoretical exploration. This author considers TVET as a mean for human development. He encourages shifting the focus of TVET research away from technical aspects (e.g. economic productivity) towards a more humanistic approach with individuals at the centre (e.g. empowerment and equity).

TVET and Employability

As aforementioned, employability is one of the guiding principles and main drivers of a TVET strategy for Africa (African Union, 2007). Guilbert, Bernaud, Gouvernet, and Rossier (2015) argue that employability can be represented along two axes. The first axes addresses a macro vision perspective (society, labour market) and the second axes addresses a micro vison perspective (centred on the individual). The level of interest in the present study is the individual. At this level, employability concerns three main abilities related to the world of work. These include the ability to gain initial employment, the ability to maintain employment, and the ability to obtain a new employment (Hillage & Pollard, 1998). Harvey (2001) summarizes the several definitions of employability implicit in the literature concluding that the core notion relates to the propensity of students to obtain a job. According to Van der Heijden, de Lange, Demerouti, and Van der Heijde (2009), employability facilitates the individuals' career results (current and long term).

One of the strategic objectives of TVET is to assure and enhance the employability of trainees through the acquisition of employable skills related to the demands of the labour market

(African Union, 2007). Maclean (2011) advocates that TVET has the potential to improve skills of learners thereby putting them at vantage position for employment.

Scholars often use the human capital theory as a theoretical framework to explain this relationship (Fleischhauer, 2007) which considers training as one of the most important investments in human capital. Participation in training programs leads to an increase in skills (human capital) making the worker more productive. Positive returns might be also the result of non-monetary factors such as higher motivation and empowerment (De Grip & Sauermann, 2013). Furthermore, the human capital theory clarifies that the formation and implementation of soft skills or employability skills during high school leave a strong impact on students who will soon enter in the labour market (Kazilan, Hamzah, & Bakar, 2009). In his earlier work on investment in human capital analysis, Becker (1962) found out that among other things individual earnings were positively correlated with the level of skills possessed, and that unemployment was negatively correlated with the level of skills acquired.

Despite these theoretical assumptions, there has been relatively little analysis to confirm a positive causal relationship between TVET and employability in developing countries.

Dale (2014) argues that the perceived employability of individuals is determined by two factors. These factors include the conditions of the labour market and the individual possession of resources. The human capital theory deals with the resources option, namely individual efforts to invest in education and training. According to the author "the return to training investment in developing countries is poor due to primarily the slow growth of the skilled labour demand in poor economy" (p.8). The empirical evidence is in line with this statement, in fact, the effects of TVET on employability are weak on the economical side, but there is evidence of increased individual perception of employability after a training program (Thiessen & Looker, 1999).

Tripney et al. (2013) conducted a noteworthy meta-analysis of 26 studies. The review aimed at examining the potential of TVET to improve the employment and employability of young people in developing countries. The study found weak evidence that TVET interventions

are effective at increasing the probability of having paid employment for young people in low- or middle-income countries (LMICs). However, they found that TVET interventions are effective at increasing the probability of having a job in the formal sector and at increasing the monthly earnings for young people in LMICs. The authors point out an overall scarcity of robust evidence. In fact, only a small number of the TVET interventions in LMICs have been rigorously evaluated. Despite this limitation, Tripney and colleagues conclude that:

"Existing evidence shows that TVET interventions have some promise, […] Overall, the findings from this review suggest that young people in LMICs gain some benefit from TVET interventions. Statistically, the effect size may be small, or even negligible, but even a small increase in the rate of paid employment can translate into thousands, if not tens or hundreds of thousands, of young people entering the labour market, where the programme is delivered on a large scale" (Tripney et al., 2013, pp.11-12).

Raimi and Akhuemonkhan (2014) conducted a qualitative study to analyse the impact of TVET on employability and the national development of Nigeria. They concluded that TVET has a limited impact on employability and national development. The authors recommend a commitment of policymakers to improve the levels of funding, promoting campaigns to sensitize the public for a better attitude towards TVET, and organizing internships designed to enrich the practical skills of lecturers and students to meet the needs of industry and society.

Unlike Raimi and Akhuemonkhan (2014), Betcherman, Godfrey, Puerto, Rother, and Stavreska (2007) found an association between vocational training and employability. In Latin America several vocational trainings were implemented to help disadvantaged youths to entry in the formal labour market. The authors found that these new programs increased the employability and the earnings of the participants. Likewise, Thiessen and Looker (1999) found a positive association between the two variables. They examined high school students' assessments of their employability skills before and after participating in a school-to-work transition program. The

results indicated an overall moderate positive effect of the program in fostering participant's self-assessed skills in some areas with the major effect on problem-solving skills.

Based on human capital theory and on the findings reported in this paragraph, it is assumed that TVET might enhance the perception of employability of its participants through the development of work-related knowledge and skills, thus it has a positive direct relation with employability.

Hypothesis 1: TVET has a direct positive relation with employability.

TVET and Motivation for Lifelong Learning

The International Centre for TVET of the UNESCO (UNEVOC) considers TVET a potential tool to empower people because it provides both employable skills and motivation for lifelong learning which is considered a universal need for people (Hughes, 2005). As aforementioned adding vocational subjects to the school curriculum might increase student's involvement since they grasp the relevance of acquiring practical skills to enter the labour market (Hughes, 2005).

McCombs (1991) advocates that motivation to learn is a natural human capacity and the biggest challenge is to uncover this natural motivation. To make individuals become lifelong learners the content domains should be personally accepted as meaningful and relevant to the learner (McCombs, 1991). In line with this argument, Hughes (2005) advocates that TVET enhances student's interest given its direct link with the world of work, which results in an increasing motivation to learn. "TVET addresses needs that are fundamental to human motivation and achievement, in particular the capacity to work productively and creatively" (Hughes, 2005, p.263). Accordingly, Maclean and Wilson (2009) consider TVET an important vehicle for achieving LLL.

Keller (2008) developed five principles of motivation and volition which characterize learning systems that effectively motivate students. The second of these five principles provide a logic explanation of how TVET can trigger the motivation to learn. This states that "motivation to

learn is promoted when the knowledge to be learned is perceived to be meaningfully related to a learner's goal" (p.177). Because these students are approaching the working age, their motivation to learn employable skills is expected to be high.

It is important to note how the causality of this relationship cannot be easily inferred. In fact, it is likewise reasonable to assume that lifelong learners are more inclined to take part in TVET interventions to keep pace with changing skill requirements. However, given the population of reference in the present study, it is considered more plausible to assume that TVET enhances their motivation for LLL. In fact, neurological and neuropsychological research explains that youths are only capable of a short-term perspective due to their prefrontal cortex (the part of the brain responsible for choice making) (Kuijpers, Meijers, & Gundy, 2011). Therefore, is safe to assume that youths take part to TVET interventions because they are stimulated by adults. Once attending the program, students get involved and motivated to learn for their future.

Hypothesis 2: TVET has a direct positive relation with motivation for lifelong learning.

Motivation for Lifelong Learning and Employability

The labour government of Britain considered LLL as an essential mean for employability and fulfilment (Bartlett & Burton, 2003). Tomlinson (2007) conducted a qualitative study to examine the way students make the transition from higher education into the labour market and how they construct and manage their employability. The author found individual factors such as motivation and personal disposition rather than structural factors (e.g. gender, class and ethnicity) as significant variables to influence employment outcomes. Moreover, students considered their propensity to learn as an important factor to maximize their credentials. In line with this finding, Harvey, Locke and Morey (2002) reported a willingness to learn and reflection on learning as two of the prerequisites to develop employability.

Fugate et al. (2004) argue that employability consists of three dimensions: career identity, personal adaptability, and social and human capital. Propensity to learn is one of the five

individual differences that is relevant to personal adaptability (together with optimism, openness, internal locus of control, and generalized self-efficacy). Thus, it is expected that the greater the individual motivation to learn, the higher the employability.

Hypothesis 3: Motivation for lifelong learning has a direct positive relation with employability.

The mediating role of M**otivation for Lifelong Learning in the TVET-Employability relationship**

Bourner, Greener, and Rospigliosi (2011) consider the development of employability skills in university education a response to unemployment. They offer an approach to graduates' employability that focuses on the development of students' willingness and ability to learn in employment. Even though the context of their study is different from the one of this research (they analyse university graduates' employability mostly in developed countries), the theoretical insights are applicable to the model presented here. The authors claim that developing employability skills alone is not very effective in reducing graduate unemployment. Rather, empirical evidence shows that what employers value the most is the willingness to learn. Students that show to their potential employer a higher propensity to learn would have a higher chance to be hired.

In line with these assumptions, Harvey (2003) claims that it is wrong to assume that "just because a programme of study is highly vocational it develops employability" (p. 2). The author instead of considering employability ascribable to the acquisition of skills considers it an ongoing process of student learning. Thus, according to Harvey (2003), the motivation for LLL is a prerequisite of employability, which consists of developing a critical empowered learner rather than being employed. In the present study, the hypothesis is that TVET might be an effective tool to enhance students' motivation for continuous learning; thus, this variable might (partly) explain why TVET leads to employability.

The present study suggests that motivation for LLL partially mediates the relation between TVET and employability. A direct positive relationship is expected between TVET and

employability since the acquisition of new skills and knowledge is expected to enhance the individual perception of employability. Motivation for LLL might be the variable that explains the effect of TVET on employability. In fact, young students might apprehend the necessity to upgrade their vocational skills to have a better chance to find a job, and this in turn will enhance their individual perception of employability.

To sum up, the pragmatism of TVET might be seen from students as a good opportunity to enter in the labour market which triggers their motivation to learn. This in turn, is an important prerequisite of employability.

Hypothesis 4: Motivation for lifelong learning partially mediates the relationship between TVET and employability.

Conceptual model

Figure 1 displays the relationships between TVET, motivation for LLL, and employability as described in the theoretical framework. In view of the existing literature any relationship found will be interpreted as a causal effect, even if this can only be proved using a longitudinal design.

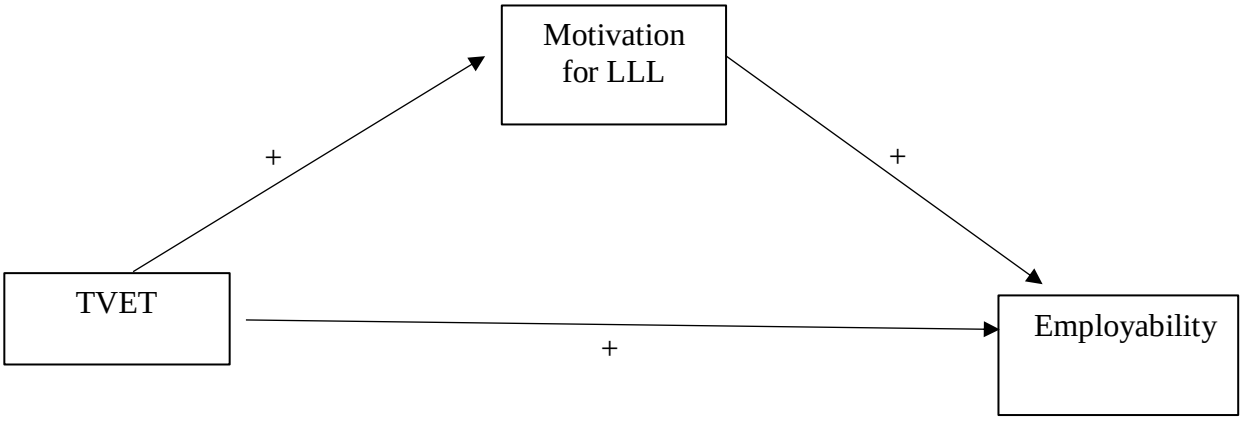

Figure 1. Conceptual model

Method

Context of the research

In this paragraph, the scope of CIP Uganda will be briefly defined and linked with TVET. In the annual report of 2016, CIP Uganda states that to tackle the unemployment issue the

activities are aimed at creating more awareness about sectors that provide employment (Career Imagination Program, 2016). CIP Uganda goes to boarding schools during weekends and the students are free to choose if they want to participate in the training or not. The students that decide to take part in CIP activities can choose between different types of trainings. The skills training clinics offers a variety of activities: animation and motion graphics, sound designing and recording for film, business planning and entrepreneurship, jewellery, phone repair, and camera work. In addition, CIP provides mentoring to students in order help them to visualize goals, inspiring and motivating them on how to choose their careers. Mentorship programs try to enhance the well-being of participants by improving their intrapersonal and interpersonal skills.

Given the broad definition of TVET provided by UNESCO and the vocational orientation of CIP Uganda, the latter is considered in this paper as a type of TVET intervention.

Research design

A quantitative study was conducted to measure the relationship between TVET and employability, and whether motivation for LLL mediates this relationship. This research is an explanatory study as it intends to analyse the relationships among the variables (Singleton & Straits, 2005). Due to the limited timeframe of the graduation project, it was possible to collect the data only at one point in time, which implied the use of a cross-sectional design. The mediation variable (motivation for LLL) and the outcome variable (employability) were measured by using a retrospective questionnaire. With the retrospective pre-post type evaluation subjects were asked to evaluate their motivation for LLL and employability both in the present and in the past. Furthermore, a control group of subjects who did not take part at the CIP training was selected.

Sample and Procedure

The population of interest of this study are young students who attend vocational programs in Uganda. Particularly, the focus of this research are students who completed at least one CIP training and students who did not attend any CIP training to have a control group.

Since the population is relatively homogeneous, the respondents were chosen based on convenience sampling. To limit the disadvantages of this type of sample, the respondents of the control group were selected as similar as possible to the experimental group (CIP participants). To accomplish this, two samples were selected that resembled a matched sample. Additionally, several control variables were used to control for spurious effects (the full list is reported below).

Data collection was executed in Uganda between July 7th, 2016 and September 7th, 2016. Data were collected in five (N=5) high schools: Nkumba senior secondary school, King's College Budo, St. Michael's international school Wakiso, Kawempe Royal College and Greenhill Academy. In St. Michael's international school Wakiso it was not possible to carry out the training due to a misunderstanding between CIP team and the school administration, therefore no data was collected data in that occasion. Additionally, Kitante Primary School was used as a venue for a three-day intensive training where participants voluntarily joined the event, advertised in the previous weeks using several media.

The method of data collection used was surveys. In the schools where we went I approached both students who attended the training and students who did not attend it (control group). When a subject was willing to participate, a cover letter to explain the purpose of the present study was handed in hard copy together with the questionnaire (see Appendix A). I waited until the subjects completed the questionnaires before collecting them. Additionally, part of the data were collected through a laptop or smartphone provided to the students by the CIP team and participants were assisted in case of technical difficulties. The questionnaire was written in English, the official language of Uganda.

The sample size consisted of N=264 respondents of which N= 109 data were collected with an online questionnaire and N=155 questionnaires were collected in hard copies. Following the end of the data collection, the responses gathered through hard copies were transferred to the online survey software Qualtrics. Subsequently, the data were transferred to SPSS for screening and cleaning. In the process of data cleaning respondents who had filled in only the demographic

section and/or did not fill in the questions related to LLL and/or employability were deleted, N=15. The final number of the sample used for the analysis was N=249.

Table 1 provides an overview of the characteristics of the respondents. 54.2% of the respondents (N=135) were male, and 45.0% (N=112) were female, with 0.8% missing values (N=2). The average age was 18.32 years (SD=2.64), where the youngest respondent was 15 years old, the oldest one was 28, and the mode was 17 years, with 1.2% missing values (N=3). Most the respondents reside in an urban area (92.8%) and have at least one parent employed (90.0%). More than half of the respondents had 4 or more siblings (53.0%). Furthermore, 32.9% (N=82) of the respondents had completed an ordinary level secondary education, 52.6% (N=131) had completed an advanced level secondary education, 4.8% had completed a formal Vocational/Technical education and the remaining 9.2% (N=23) completed a university degree bachelor or master. The school attended by respondents are several: 20.1% (N=50) attended Nkumba Secondary School, 11.2% (N=28) attended Kawempe Royal College, 8.8% (N=22) attended Green Hill Academy and 22.5% (N=56) attended King's College Budo while the remaining 37.3% (N=93) attended other schools. Finally, 61.4% (N=153) of the respondents attended CIP trainings while the remaining 38.6% (N= 96) did not attend CIP trainings.

Table 1.
Demographic characteristics of the sample

Control variables	*N*	*%*	*M*	*SD*
Gender	**249**			
Men	135	54.2		
Women	112	45.0		
Missing value	2	0.8		
Age (in years)	**246**		**18.32**	**2.64**
Residence	**249**			
City	231	92.8		
Village	18	7.2		
Educational level	**249**			
Primary Education	1	0.4		
Ordinary Level Secondary	82	32.9		
Advanced Level secondary	131	52.6		
Vocational/Technical	12	4.8		
University degree	23	9.2		
Employment status of parents	**249**			
At least one parent employed	224	90.0		
Both parents unemployed	24	9.6		
Missing values	1	0.4		
Number of siblings	**249**			
Only child	23	9.2		
From 1 to 3 siblings	94	37.8		
From 4 to 6 siblings	93	37.3		
Over 7 siblings	39	15.7		
School attended	**249**			
Nkumba Secondary School	50	20.1		
Kawempe Royal College	28	11.2		
Green Hill Academy	22	8.8		
King’s College Budo	56	22.5		
Other	93	37.3		
TVET	**249**			
Attended CIP training	153	61.4		
Not attended CIP training	96	38.6		
Employment status	**248**			
Employed	24	9.7		
Unemployed	224	90.3		

An independent-samples t-test was used to compare the mean scores for the control group and the experimental group on the control variables. The analysis did not show any significant difference in the distribution of the scores among the two groups. To strengthen this finding, bar

graphs were used as verification tool to inspect whether the control group differed visibly from the treatment group on the background variables. The two categorical variables (control and treatment group) were combined with each demographic variable of interest (age, gender, educational level, school attended, and number of siblings). The bar graphs generated by the SPSS output are displayed in Figure 2. The graphs show that the two groups do not differ significantly in the distribution of the control variables, which strengthens the generalizability of the results.

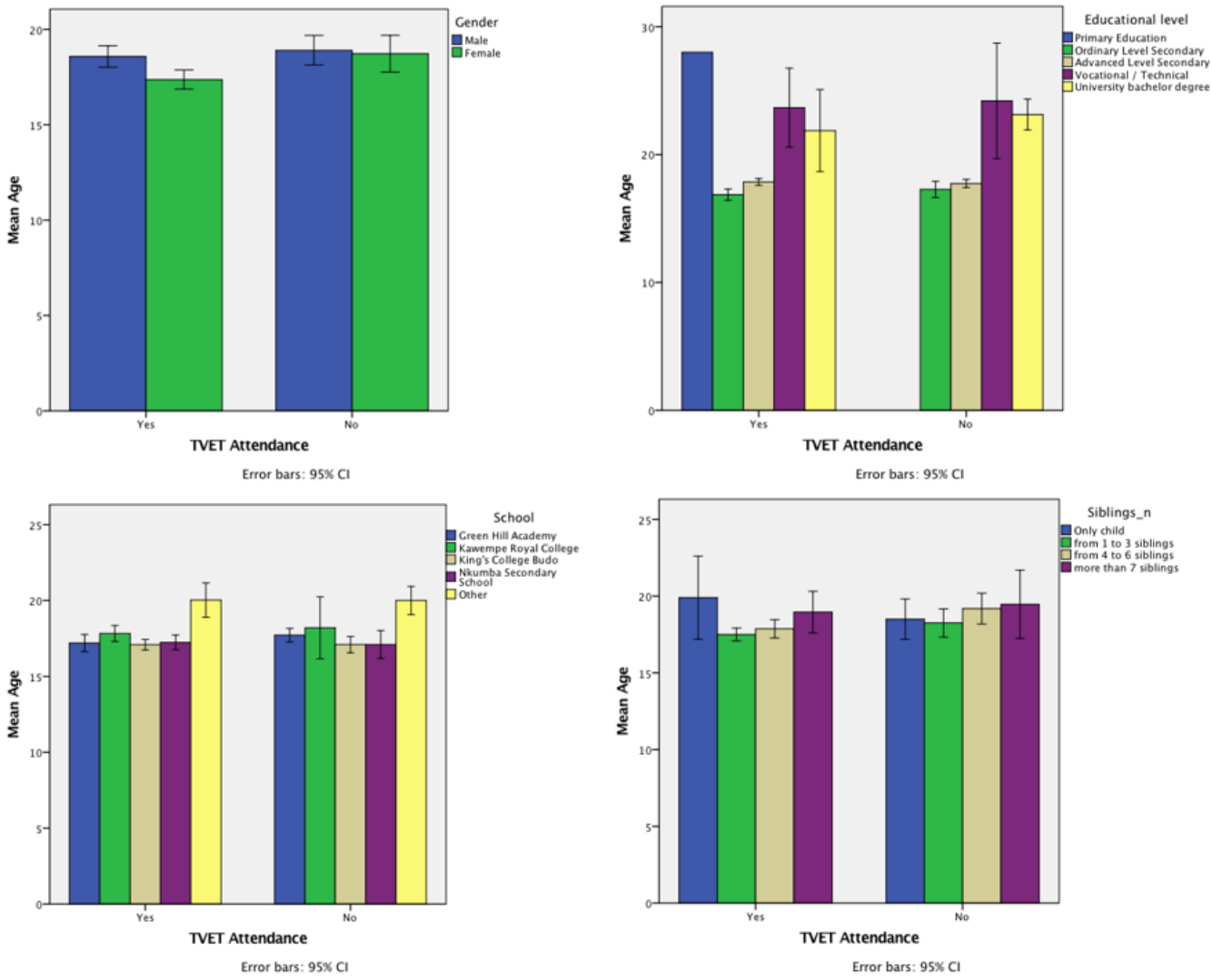

Figure 2. Bar Graphs displaying the distribution of the control variables among the treatment group and the control group.

Instruments

Based on previous literature, existing scales were selected and when necessary adapted to measure the three concepts presented in the model (TVET, motivation for LLL, and employability) and the relationships between these variables (Reported in Appendix B).

After the preliminary data screening principal component analysis (PCA) was performed. Both scales used to measure the mediation and dependent variable resulted suitable for factor analysis. Inspection of the correlation matrix revealed the presence of many coefficients of .30 and above. The Kaiser-Meyer-Olkin value was .86 for motivation for LLL and .78 for employability, exceeding the recommended value of .6 (Kaiser, 1970, 1974). Bartlett's Test of Sphericity reached statistical significance in both scales, supporting the factorability of the correlation matrix. Conclusions about the number of components were made following the "eigenvalue larger than 1" rule along with considerations of the scree plot.

TVET. The first variable was measured by asking subjects whether they took part to a CIP activity and if yes, which CIP activity they followed. A control group composed by individuals who did not take part in the program was selected to compare differences in the scores in the mediation and outcome variable. No factor and reliability analysis were possible for TVET as the answer category of this concept consisted of two categories (yes/no).

Motivation for lifelong learning. The second concept was measured using a 14-items scale partially modified from two different existing scales. The combination of scales and their partial modification was necessary due to the peculiarity of the population of interest of the present study. In fact, none of the existing scales was considered measuring the Motivation for LLL of young students.

Seven items were selected from the Self-Directed Learning Readiness Scale (SDLRS), the original scale is composed by 58 items. This is a self-report questionnaire developed by Guglielmino (l977), a sample item is: "I love to learn". Additionally, 7 items have been taken from the employee

lifelong learning scale (ELLS) developed by Gardiner and Kline (2007). The original ELLS scale consisted of 17 items divided in three main components labelled by the authors of the scale "Passionate Visionary", "Fearful Instrumental", and "Ambition Instrumental". Only seven items have been considered relevant with the present study, four items investigating the "Passionate Visionary" dimension and three representing the "Fearful Instrumental" dimension. A sample item was: "I would like to learn to be the best I can be in my chosen field". To measure retrospectively motivation for LLL, the 14 items were asked referring to the past. Scores were rated on a five-point Likert-type scale, ranging from 1 (Almost never true of me; I hardly ever feel this way) to 5 (Almost always true of me; there are very few times when I don't feel this way). Despite the use of items taken from different scales, the reliability analysis revealed a Cronbach alpha of .832, meaning that this scale had a good reliability (Gliem & Gliem, 2003).

PCA revealed the presence of four components with eigenvalues exceeding 1, explaining 32.8%, 8.7%, 7.8% and 7.5% of the variance respectively. An inspection of the scree plot revealed a clear break after the first component. Thus, it was considered appropriate to not extract the second, third and fourth component as different factors of the scale since they did not explain much of the variance. The pattern matrix was close to a simple structure; two items loaded on two components but the loadings on the second component were less than .397 and almost twice as smaller from the loading on the main component. Therefore, it was decided to consider as high loadings those above .397 which revealed a simple structure. The item loading the lowest was "I have a vision of where I want to be in my work in ten years, even if I am not sure of how to accomplish my vision", factor loading = .397 (see Appendix C).

Employability. Employability was measured by using two different indicators.

The first indicator consisted of two items, which have been developed based on the definition of employability provided by Hillage and Pollard (1998): employability is the ability to gain and retain

fulfilling work. According to Harvey (2001), when this definition is adopted, the indicators of the construct are objective questions related to the employment status. Subjects had to state if they were employed in the last six months. If yes, they were asked to think if the job they had was linked to the skills acquired in the month before the job.

The second indicator, namely self-perceived employability, has been measured with six items that have been taken from self-perceived employability scales (Rothwell & Arnold, 2007; Rothwell, Herbert, & Rothwell, 2008). Two items have been taken from the scale developed by Rothwell and Arnold (2007) and have been modified to be consistent with the study setting of the present research. The other four items have been selected from the 16-items scale of employability developed by Rothwell et al. (2008). A sample item includes: "The skills and abilities that I possess are what employers are looking for". To measure retrospectively employability, the same six items were asked referring to the past. Scores were rated on a five-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

PCA revealed the presence of one component with eigenvalues exceeding 1, which explained 39.81% of the variance. The scree plot further supported the one component solution, showing a clear break after the first component. Rothwell et al. (2008) reported that the scale measuring employability had a reliability of $\alpha = .75$. In the current research Cronbach alpha was .69, meaning that the scale has a low but acceptable reliability (Gliem & Gliem, 2003). Cronbach's alpha if items deleted was below .69 for all items. This low internal consistency of the subjective employability scale might be explained by two factors. First, according to Pallant (2013), scales with a small number of items are more likely to show low reliability compared to scales with many items. Second, as aforementioned, two items have been adapted to be consistent with the present research and this might have reduced the Cronbach alpha of the scale. Since it was extracted only one component, the solution could not be rotated. The factor loadings on the unique component were all ranging between .538 to .675 (see appendix D).

Control variables. To check potential spurious effects, five control variables were included in the present study. Demographic information were collected (e.g. gender male=0, female=1), and level of education. Moreover, according to Forrier and Sels (2013) the following variables are often included when measuring employability: family situation (i.e. employment of parents, number of siblings) and school attended.

Statistical analysis

To test the model and the corresponding hypotheses, the statistical analysis was performed using IBM SPSS Statistics 24. First, the raw data were downloaded and some variables were transformed where needed for the analysis. This included: residence, transformed from open-ended into rural area or city, number of siblings, recoded into four groups (only child, from 1 to 3, from 4 to 6 and more than 7), and gender recoded into 1=male and 2=female. Moreover, to estimate the effects of participating in TVET on employability directly as well as indirectly through motivation for LLL, the variable was recoded as follows: TVET control group coded 0 (X=0) and TVET participants coded 1 (X=1). Afterwards, the factor scores of the items forming each scale were automatically created as part of the factor analysis by selecting the option "save as variables". No items in any of the scales was worded negatively so there was no need to reverse-code them. Preliminary data screening was performed to check for possible errors and to explore the distribution of scores on continuous variables in terms of normality. The Kolmogorov-Smirnov index was found to be statistically significant for all the scales, suggesting violation of the assumption of normality. As further confirmation, all the histograms showed a non-normal distribution of the scores; the shape resembled a negatively skewed distribution, with most of the scores located on the right end side of the graph (see appendix E for a detailed overview of the graphs). According to Pallant (2013), this is quite common in larger samples and in variables used in social science. Despite the non-normal distribution of the scores, it has been decided to use parametric statistic. In fact, there is ample evidence that regression analysis is an

adequate robust statistical technique which can be used also in case of problems of non-normality given that the violation of this assumption generally does not cause serious distortions (Bohrnstedt & Carter, 1971).

Additionally, box plots were used to check the data for outliers. The scores marked as outliers were checked but none of them has been deleted since they were deemed real values. An inspection of the scatter plot of the relation between motivation for LLL and perceived self-perceived employability showed a linear positive distribution of the two variables, with a cluster of dots located on the upper right side of the graph (See appendix F).

Testing the hypothesis

Conditional Process Analysis (CPA) for SPSS by Hayes (2013) was used to quantify and examine the direct and indirect effect in the conceptual model. The software PROCESS Macro of Hayes (2013) was downloaded online and installed in SPSS. CPA uses premade templates to calculate the different effects, these premade templates are converted into statistical models. The template used for this study is the simple mediation model number four (see Appendix G). CPA was considered convenient as the procedure implements bootstrap sampling when testing effects and Sobel test for interference of indirect effect. Moreover, the process of bootstrapping does not require an assumption of the normality of the indirect effect, allowing to draw more accurate conclusions (Hayes, 2012).
To inspect a possible causal effect of the independent variable on the dependent variable, the factor scores of the retrospective scales of the mediation and of the outcome variables have been included in the analysis controlling for retrospective scores. A paired-samples t-test was conducted to evaluate the impact of TVET on participant's scores on motivation for LLL and employability before and after the training (by using the retrospective measures). There was a statistically significant increase in motivation for LLL scores from Time 1 (M = 3.88, SD = 0.73) to Time 2 (M = 4.17, SD = 0.50), t (183) = -7.32, $p < .001$ (two-tailed). The mean increase in motivation for LLL scores was – 0.29 with a

95% confidence interval ranging from – 0.37 to – 0.21. Contrary, there was a statistically significant decrease in self-perceived employability scores from Time 1 (M = 5.22, SD = 1.24) to Time 2 (M = 4.10, SD = 0.61), t (217) = 16.40, $p < .001$ (two-tailed). The mean decrease in self-perceived employability scores was 1.11 with a 95% confidence interval ranging from 0.98 to – 1.25.

The variable employability has been measured with two different indicators, one categorical measuring objective employability, and one continuous measuring self-perceived employability. Given the different nature of the items these have been analysed differently. Model four has been performed only for measuring self-perceived employability. The categorical variable indicating the employment status (employed/unemployed) was supposed to be analysed through logistic regression. However, the descriptive analysis revealed that most the subjects reported to be unemployed (90.3%, N=224). Therefore, no logistic regression has been performed to test the odds of getting a job for subject who followed TVET, compared to the control group of subjects. In fact, according to Peduzzi, Concato, Kemper, Holford, and Feinstein (1996) a low number of events per variable in logistic regression can lead to major problems. Consequently, it was decided to use only the scale measuring self-perceived employability as an indicator of employability. For the same reason, the control variable requesting the employment status of parents was not included in the analysis considered that most the sample (90% N=224) reported having at least one parent employed.

Results

The means, standard deviations, reliability and correlations among all variables that are central in this study and control variables are presented in Table 2. The table shows that having participated or not in TVET is not significantly correlated to self-perceived employability and motivation for LLL (respectively $r = .013$, $r =. 015$). As hypothesized, motivation for LLL is significantly correlated to self-perceived employability ($r = .283$, $p = <.001$). As expected, the control variable which measured motivation for LLL retrospectively shows a robust and significant correlation with motivation for LLL

(*r* = .674, *p*= <.*001*) and is positively and significantly correlated with retrospective self-perceived employability (*r* =.473, *p*= <.*001*) and self-perceived employability (*r* = .363, *p*= <.*001*). Finally, retrospective self-perceived employability is positively and significantly correlated with all the concepts except TVET (*r* = -.008). With regards to the control variables, TVET shows a positive and significant correlation with the school attended and the level of education. Moreover, the level of education is positively and significantly correlated to Motivation for LLL and, obviously in this sample, with the variable age.

Hypothesis testing

As aforementioned, conditional process analysis (CPA) was used to analyse the conceptual model using the template four (Hayes, 2013). The analysis examined weather TVET predicts self-perceived employability and weather motivation for LLL mediates this relationship. Table 3 reports the results. Contrary to what hypothesized, the findings indicate that TVET does not significantly predict self-perceived employability (c'_i: *B* = .021, *p* =.81). The findings indicate that TVET does not significantly predict motivation for LLL (a_i: *B*=-.025, *p* = .74) rejecting the H2: "*TVET has a direct positive relation with motivation for lifelong learning"*. Conversely, motivation for LLL appeared to affect significantly self-perceived employability (b_i: *B* =.316, *p* < .001). Moreover, the table 4 shows the direct and indirect effects of TVET on employability. As aforementioned, participating in TVET does not have a direct effect on self-perceived employability. Lastly, table 5 shows that the overall model is not significant.

Table 2.
Correlation Matrix (pairwise exclusion)

Measures	N	M	SD	1	2	3	4	5	6	7	8	9	
1. TVET [participants]	-	-	-	1									
2. Motivation for LLL	216	4.13	0.55	.015	1								
3. Self-Perceived Employability	229	4.10	0.61	.013	.283**	1							
4. Retrospective Motivation for LLL	204	3.86	0.73	.030	.674**	.363**	1						
5. Retrospective Self-Perceived employability	236	5.22	1.25	-.008	.209**	.593**	.473**	1					
6. Age	246	18.32	2.64	.141*	.129	.105	.097	.073	1				
7. Gender [women]	-	-	-	-.001	.057	.060	.108	.097	-.152*	1			
8. Level of education	-	-	-	.162*	.136**	.041	.127	.042	.621**	-.062	1		
9. School attended	-	-	-	.212**	.129	.041	.037	.067	.365**	.005	.071	1	
10. Number of Siblings	-	-	-	-.049	.083	.065	.004	.012	.083	.107	.078	.030	1

Note: * = $p < .05$ (2-tailed), ** = $p <. 01$ (2-tailed)
TVET= Technical and Vocational Education and Training

Table 3.
Model coefficients for statistical model: the effect of TVET [participants] on self-perceived Employability and via Motivation for LLL.

		Consequent						
		M (Motivation for LLL)				Y (Self-Perceived Employability)		
Antecedent		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*
X (TVET [participants])	a_i	-0.025	0.079	.749	c'_i	0.021	0.086	.810
M (Motivation for LLL)		---	---	---	b_i	0.316	0.076	<.001
Constant	i_1	4.154	0.063	<.001	i_2	2.809	0.323	<.001
		R^2 =0.005 F(1.200) =0.102, *p*=.749				R^2 =0.0801 F(2.199)=8.664, *p<.001*		

Table 4.
Direct effect of TVET [participants] on self-perceived employability

		Consequent Y (Self-perceived Employability)			
Antecedent		Coeff.	*SE*	*t*	*p*
X (TVET [participants])	*c'*	0.0206	0.0858	0.2405	.8102

Table 5.
Indirect effect of TVET [participants] on Self-Perceived Employability, via Motivation for LLL

		Consequent Y (Self-Perceived Employability)			
Antecedent		Coeff.	*SE*	*LL 95% CI*	*UL 95% CI*
X (TVET [participants]) via M (Motivation for LLL)	a_i*b_i	-0,0081	0.0249	-0.0611	0.0415

The graph in Figure 2 illustrates the effect sizes of the variables of interest.

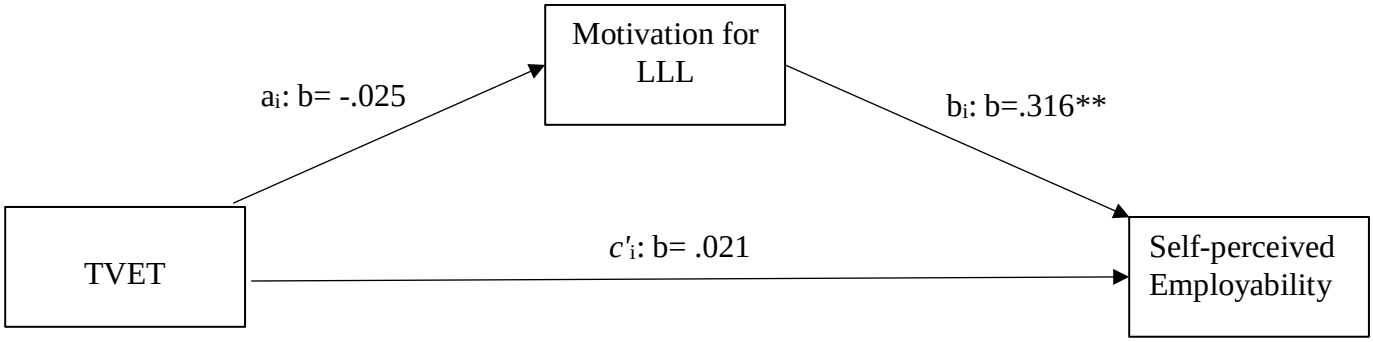

Figure 2. Conceptual model including the effect sizes.

To examine the effects of the control variables gender, level of education, number of siblings, school attended, and the two retrospective variables of the scales motivation for LLL and employability, one additional analysis was performed. Beside two retrospective measures of subjective employability and motivation for LLL, the only other control variable that was found significant was the school attended on motivation for LLL (p<.01). The relationship between motivation for LLL and employability remained significant (p<.01) even with the addition of the control variables in the model.

Additional analysis

Although the research was set up to examine a mediation effect of motivation for LLL between TVET and employability, it was decided to investigate the relationship further. The template number one (Hayes, 2013) was run to test a possible moderation effect of TVET on the relationship between motivation for LLL and subjective employability. The analysis revealed that the interactions among TVET and motivation for LLL was found to be not significant, meaning that the participation in TVET did not affect the relationship between motivation for LLL and employability. Tables 5 in Appendix H report the results of this additional regression.

Discussion

The present study investigated the topic of youth unemployment in Uganda. Technical and vocational education and training (TVET), which is one of the practices widely used to tackle the unemployment issue, has been assessed to verify if this can be considered an effective tool to overcome this issue. A literature review concerning TVET, revealed two main streams: one positive about its developmental potentials (Ajufof, 2013; Hughes, 2005; McGrath, 2012; Nilsson, 2010; Powell, 2012: Tripney et al., 2013), and one sceptic about its effectiveness on economic the development (Abrokwa, 1995; Foster, 1966; Oketch, 2009; Psacharopoulos, 1997). An extensive literature research revealed the lack of empirical data of both these stances. Therefore, the present study has tried to fill this gap in the literature, providing new empirical evidence in the TVET area. This research sought to examine the extent to which TVET affects employability and to test if motivation for LLL mediates this relationship. More specifically, the following research question was explored: *to what extent TVET enhances the employability of young students and is this relationship mediated by motivation for lifelong learning?*

To answer this research question, this study examined survey data from a sample of 249 Ugandan youth using Conditional Process Analysis of Hayes (2013). The results of this study did not provide support for the view that TVET has an influence on employability and on motivation for LLL, contradicting the hypothesis 1 and 2. Conversely, the analysis revealed a direct and positive relation between motivation for LLL and self-perceived employability, confirming hypothesis 3. Finally, the overall mediation model did not find empirical confirmation, meaning that TVET does not seem to be a mediator of the relationship between TVET and employability, contradicting the hypothesis 4.

A central premise of the assumption that TVET has a direct impact on the employability of attendees was the fact that one of the primary aims of this type of hands-on trainings is enhance the employability of trainees through the acquisition of employable skills. The Human Capital Theory was

used as theoretical framework to explain this relationship. According to this theory, training is one of the most important investments in human capital and participation in training programs leads to an increase in skills (human capital) (Fleischhauer, 2007). However, the findings of the present study support the scholars' viewpoint which expressed scepticism about the effectiveness of TVET on employability. In fact, TVET was found to have no direct influence on self-perceived employability. This result seems to indicate that there are other more important factors influencing self-perceived employability, and that other confounding factors might have influenced the effectiveness of TVET in the specific context analysed. The finding that TVET was not related to perceived employability could be explained by the fact that we only considered the participation in the training and not the quality of it. In fact, is crucial that vocational education and training systems are consistent with the current needs of the labour market and that TVET systems are modernized and complemented with phases of practical work experience (e.g. with internships) (Biavaschi et al., 2012). The TVET analysed in this research can be categorized as an informal type of training with limited resources, which involved little constancy in the course offered and this might have limited its effectiveness. A research conducted by Wittekind, Raeder, and Grote (2010), found the following factors to be significant predictors of self-perceived employability: education, support for career and skill development, current level of job-related skills, and willingness to change jobs. Therefore, one possible explanation for this not significant result, may be that too little attention was paid in the TVET analysed in the current study to factors like support for career and skill development, and current level of job-related skills.

In line with the first finding, also the second hypothesis stating that TVET has a direct impact on motivation for LLL was denied. As above-mentioned in the theoretical framework, to make individuals become lifelong learners the content domains should be personally accepted as meaningful and relevant to the learner (McCombs, 1991). Therefore, it might be that the content offered in the trainings was not in line with the ambitions of the participants and for this reason it did not trigger their

motivation to learn. A research conducted by Major, Turner, and Fletcher (2006) found individual traits such as proactive personality, openness, extraversion, and conscientiousness, be predictors of motivation to learn. Therefore, this finding strengthens the assumption that motivation to learn it is more influenced by individual factors rather than environmental factors.

As expected, motivation for LLL was found to be significantly and positively related to employability. This finding suggests that participants with a higher motivation to learn perceive their propensity and willingness to acquire new knowledge as an asset, and therefore they feel to have more career possibilities compare to those with low motivation to learn. This reasoning is in line with the findings of a research conducted by Tomlinson (2007). The author found individual factors such as motivation and personal disposition rather than structural factors (e.g. gender, class and ethnicity) as significant variables to influence employability. Moreover, this finding confirms what stated by Harvey, Locke and Morey (2002): willingness to learn and reflection on learning are two of the prerequisites to develop employability.

Lastly, the overall model was found to be not significant. This result is closely related to the fact that TVET was found not significantly related to Motivation for LLL, which implies that no mediation effect can be found in the overall model.

Limitations and Suggestions for Future Research

The present study has several limitations that need to be acknowledged when interpreting the findings. This research was conducted with the use of a cross-sectional design, meaning that data were gathered at one specific point in time. Consequently, the results cannot be interpreted as evidence of possible causality (Warner, 2012). However, the use of retrospective scales in the present study has limited the disadvantage of the cross-sectional data collection. In future studies is recommended the use of longitudinal designs to inspect whether the relationships between the concepts of this study change over time. Moreover, the use of a convenience sample limits the generalizability potential of the results

and thus lowers its external validity. This means that the sample might not be representative of the population of interest. For future research, it is strongly recommended to use probability sampling to have a higher representativeness of the population.

In addition, it was not possible to collect data from an equal number of employed and unemployed participants. Most the respondents were still attending high school when data were collected, consequently it was not possible to verify how many of them were employed after participating in the training. For this reason, the objective measure of employability could not be measured and this has limited the scope of this concept. Moreover, the scale used to measure self-perceived employability had to be adapted to the population of interest, which might have lower its reliability. In future researches, it is recommended the use validated scales and, as aforementioned, choose the participants with a probability sample. In addition, not all participants seemed to have a clear understanding of the meaning of the questionnaire, in fact during data collection several questionnaires had been discarded since subjects ticked in many items all the possible choices, from strongly disagree to strongly agree, meaning that they did not understand the purpose of a questionnaire and the meaning of the questions. Therefore, it is advised to future researchers conducting a study in Uganda to use a qualitative approach to obtain more insightful results.

Beside these methodological limitations, other barriers must be mentioned. Further research is needed to investigate the extent to which the findings of the present study can be generalized to other TVET institutions and/or to other countries. CIP Uganda is a non-formal type of TVET who suffers from limited financial resources and no formal support from institutions. These bound its action to one-day trainings with little possibility of having a long-term learning relationship with participants. Additional studies examining formal and non-formal types of TVET are needed, in order to allow an inspection of the effectiveness of these two types of TVET interventions. It might be that collecting data from a different TVET organization would have led to different findings. Future research is needed to

compare formal and non-formal types of TVET to assess their (possible) different impact on employability. This would demonstrate if the organizational structure of TVET influences its outputs and its effectiveness. One possible research question might be the following: to what extent does formal TVET enhance the employability of its participants compared to non-formal TVET?

In addition, the finding of the present study assessed the impact of TVET on the self-perceived dimension of employability without taking into account more objective measures such as employment ratio after participating in TVET or employers' perception of the employability of TVET participants. Including additional dimensions of the concept would provide a better overview of how employability can be enhanced by TVET. Past research provides several hints regarding possible influencing factors of employability. For example, McQuaid and Lindsay (2005) developed a holistic framework for analyzing employability which is built around individual factors, personal circumstances and external factors. Future research would benefit from including these factors in their theoretical framework to assess their respective impact on employability.

Ultimately, the significant positive relationship found in the present study between motivation for LLL and employability highlights the importance of understanding what are the triggering factors that enhance individual's motivation for LLL. Further research in this area would allow TVET policy makers to pay attention to the most relevant elements which influence the motivation of the learners and this focus would ultimately improve the effectiveness of TVET. For example, would be relevant to understand if the motivation for learning is higher in formal settings rather than in informal one. In fact, previous research has supported the idea that the learning context has a direct influence on employability (Froehlich, Beausaert, & Segers, 2015).

Practical Implications

As already mentioned in this paper, skills development and TVET are becoming increasingly important on the international and national policy agenda. Despite the political attention that is being given to

TVET, the literature on the topic lacks agreement on the relevance and effectiveness of TVET in developing countries. According to Hagos Baraki and van Kemenade (2013), TVET research to date has tended to focus on whether TVET in developing countries is relevant or effective without adequately indicating what mechanisms working under what context lead to an effective TVET. The present study confirms this viewpoint. It is of crucial importance that advocates of TVET support their assumptions with up to date data, demonstrating what the factors are and the conditions required for TVET to have success. This research has shown that a non-formal and isolated form of TVET does not prove to be effective on short term. Therefore, it is recommended to investigate both the efficiency and long-term efficacy of TVET before investing resources in these types of programs.

Conclusion

Youth unemployment in Uganda is a complex matter which must be analysed under different viewpoints. The present study tried to examine the impact of one of the policies widely adopted to tackle it (TVET) on the employability of young Ugandans and on their motivation for LLL. The result of this study did not find evidence of its effectiveness on employability and on Motivation for LLL. The little resources invested in the TVET analysed might have been the reason of these disappointing findings. To defeat unemployment is necessary a joint effort from the public and private sector to ensure that isolated realities like CIP succeed in their aim.

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Appendix A: Cover Letter Questionnaire

Subject: Completing questionnaire for research

Dear Sir/Madam,

For my study Human Resource Studies at Tilburg University (The Netherlands), I am executing a scientific research. I chose to examine Vocational Education and Training and related concepts.

Data collection is necessary to investigate the fabove-mentioned subject. Therefore, I created a questionnaire. My request to you is to complete this questionnaire. Filling in the questionnaire will take about 15 minutes of your time. The completion of the questionnaire will be entirely anonymous and will only be used for scientific purposes.

If you have any questions, you can contact me.

Thank you in advance for your cooperation.

Yours Sincerely,

Silvia Cusumano

Appendix B: Questionnaire

1. Gender:

   Male ☐

   Female ☐

2. Age: ____ years

3. In which town/village do you live? _____

4. Level of education

   Primary Education ☐
   Ordinary Level Secondary ☐
   Advanced Level Secondary ☐
   Vocational / Technical ☐
   University bachelor degree ☐
   University master degree ☐_____

5. How many hours per week do you work for pay? _____

6. How many hours per week do you work as a volunteer? _____

7. Is at least one of your parents employed?

   Yes ☐
   No ☐

8. Do you have any Children?

   Yes ☐
   No ☐

9. Number of siblings ____

10. Name of the Secondary School attended _____

11. I attended one of the free of charge trainings offered by Career Imagination Program (CIP) in my school:

    Yes ☐
    No ☐

    If you DID NOT attend CIP go to question n. 15

12. Select which type of CIP training and specify the name of the training:

    Skills training clinics ☐ _____

    Mentorship program ☐ _____

    Both skills training and mentorship program ☐ _____

13. I obtained a certificate from CIP.

    Yes ☐ the following certificate _____

    No ☐

14. Duration of the CIP training in hours: _____

The following questions are designed to gather data on learning preferences and attitudes towards learning. After reading each item, please indicate the degree to which you feel that statement is true of you. There are no right or wrong answers. Please read each choice carefully and choose the response which best expresses your feeling.

There is no time limit for the questionnaire. Try not to spend too much time on any one item; however, your first reaction to the question will usually be the most accurate.

Responses

1 = Almost never true of me; I hardly ever feel this way.

2 = Not often true of me; I feel this way less than half the time.

3 = Sometimes true of me; I feel this way about half the time.

4 = Usually true of me; I feel this way more than half the time.

5 = Almost always true of me; there are very few times when I don't feel this way.

15. I know what I want to learn.
16. If there is something I want to learn, I can figure out a way to learn it.
17. I love to learn.
18. In a learning experience, I prefer to take part in deciding what will be learned and how.
19. I can tell whether I'm learning something well or not.
20. There are so many things I want to learn that I wish there were more hours in a day.
21. If there is something I have decided to learn, I can find time for it, no matter how busy I am.
22. I learn because I am committed to my present/future career. (Original item: I learn because I am committed to my career)

23. I have a passion for learning.
24. I would like to learn to be the best I can be in my chosen field.
25. I have a vision of where I want to be in my work in ten years, even if I am not sure of how to accomplish my vision.
26. I learn new skills in order to keep my/acquire a job. (original item: I learn new skills in order to keep my job.)
27. I learn because I need to in order to achieve my career goals.
28. I learn when I have specific goals and objectives.

Now please think about how you would have rate the same questions 3 months ago.

29. Three months ago I knew what I wanted to learn.
30. Three months ago if there was something I wanted to learn, I could figure out a way to learn it.
31. Three months ago I loved to learn.
32. Three months ago in a learning experience, I preferred to take part in deciding what would be learned and how.
33. Three months ago I could tell whether I was learning something well or not.
34. Three months ago there were so many things I wanted to learn that I wished there were more hours in a day.
35. Three months ago if there was something I had decided to learn, I could find time for it, no matter how busy I was.
36. Three months ago I learned because I was committed to my future career.
37. Three months ago I had a passion for learning.
38. Three months ago I would have liked to learn to be the best I could be in my chosen field.
39. Three months ago I had a vision of where I wanted to be in my work in ten years, even if was not sure of how to accomplish my vision.
40. Three months ago I learned new skills in order to keep my/acquire a job.
41. Three months ago I learned because I needed to in order to achieve my career goals.
42. Three months ago I learned when I had specific goals and objectives.

The following questions are designed to gather data on employment.

43. I have been employed over the last six months.

Yes ☐ No ☐

Response scale

1 = Strongly Disagree

2 = Disagree

3 = Neither Agree nor Disagree

4 = Agree

5 = Strongly Agree

Answer to question n. 44 only if you have an employment

44. The employment that I have got is linked to the skills acquired in the months before the employment.
45. I think I will get an employment within six months after my diploma.
46. I can easily find out about opportunities in my chosen field.
47. The skills and abilities that I possess are what employers are looking for.
48. I feel I could get any job as long as my skills and experience are reasonably relevant.
49. I am generally confident of success in job interviews and selection events.
50. My personal networks help me in my present/future career. (original item: My personal networks in this organization help me in my career).
51. The skills I have gained in high school are transferable to my present/future career. (original item: The skills I have gained in my present job are transferable to other occupations outside this organization)

Now please think about how you would have rate the last six questions 3 months ago.

52. Three months ago I could easily find out about opportunities in my chosen field.
53. Three months ago the skills and abilities that I possessed were what employers were looking for.
54. Three months ago I felt I could get any job as long as my skills and experience were reasonably relevant.
55. Three months ago I was generally confident of success in job interviews and selection events.

56. Three months ago I considered the skills I had gained in high school were transferable to my future career.
57. Three months ago I considered that my personal networks could help me in my future career.

Appendix C: Pattern Matrix Motivation for LLL Scale

Pattern Matrix[a]

	Component			
	1	2	3	4
I would like to learn to be the best I can be in my chosen field.	.766			
I have a passion for learning.	.643			
I love to learn.	.643	.366		
There are so many things I want to learn that I wish there were more hours in a day.	.594	-.384		
I have a vision of where I want to be in my work in ten years, even if I am not sure of how to accomplish my vision.	.397			
I know what I want to learn.		.757		
I can tell whether I'm learning something well or not.		.522		
If there is something I have decided to learn, I can find time for it, no matter how busy I am.			.739	
I learn because I am committed to my present/future career.			.734	
If there is something I want to learn, I can figure out a way to learn it.			.672	
I learn because I need to in order to achieve my career goals.			.532	
I learn new skills in order to keep my/acquire a job.			.480	
In a learning experience, I prefer to take part in deciding what will be learned and how.				.816
I learn when I have specific goals and objectives.				.768

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 14 iterations.

Appendix D: Component Matrix Self-Perceived Employability Scale

Component Matrix[a]

	Component 1
I am generally confident of success in job interviews and selection events.	.676
The skills and abilities that I possess are what employers are looking for.	.667
I feel I could get any job as long as my skills and experience are reasonably relevant.	.659
The skills I have gained in high school are transferable to my present/future career.	.628
I can easily find out about opportunities in my chosen field.	.607
My personal networks help me in my present/future career.	.538

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Appendix E: Histograms of the Scales

Figure 2.
Histogram of the distribution of the scores of the Motivation for LLL scale.

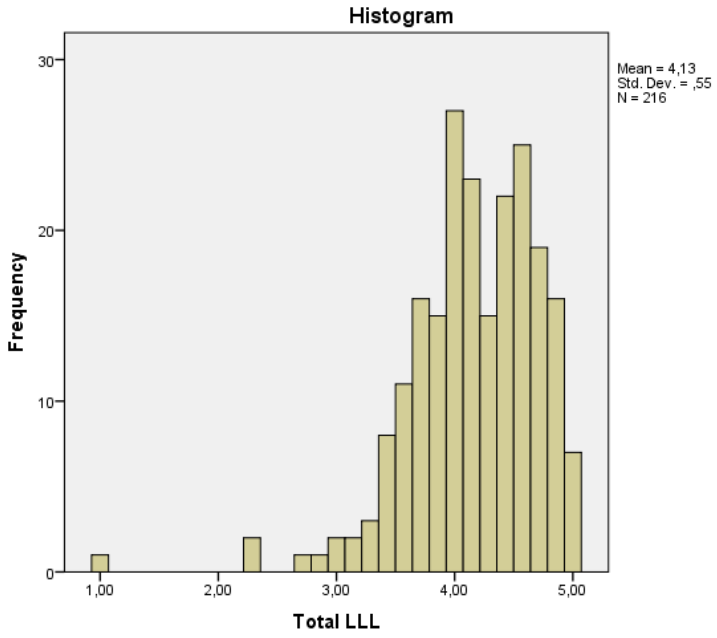


Figure 3.
Histogram of the distribution of the scores of the subjective employability scale.

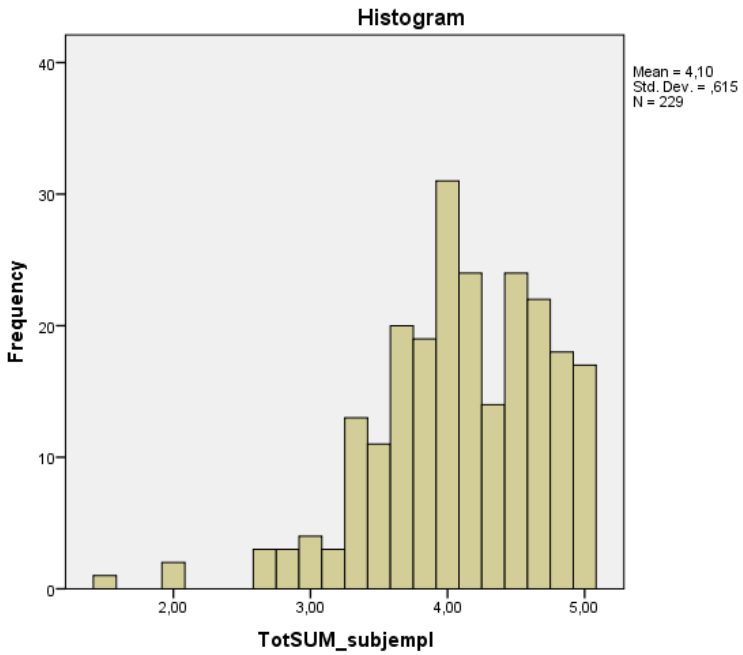


Figure 4.

Histogram of the distribution of the objective employability scores.

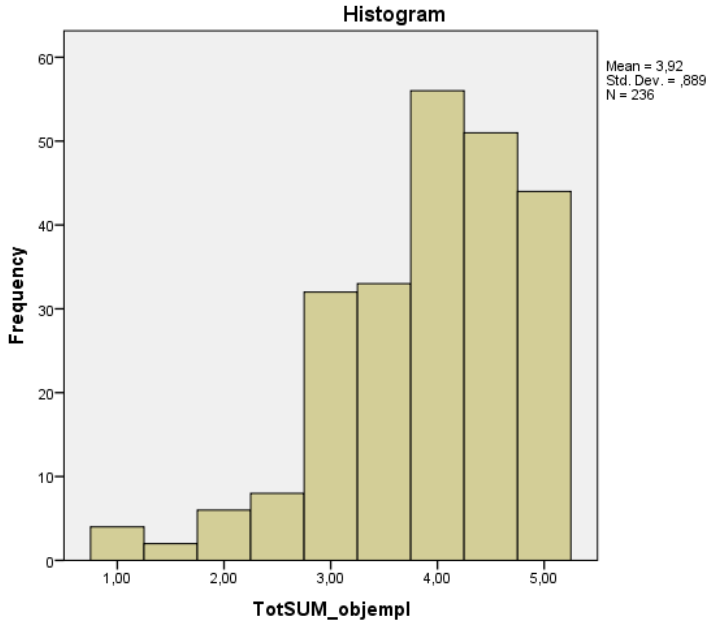


Figure 5.

Histogram of the distribution of the scores of the Retrospective Motivation for LLL scale.

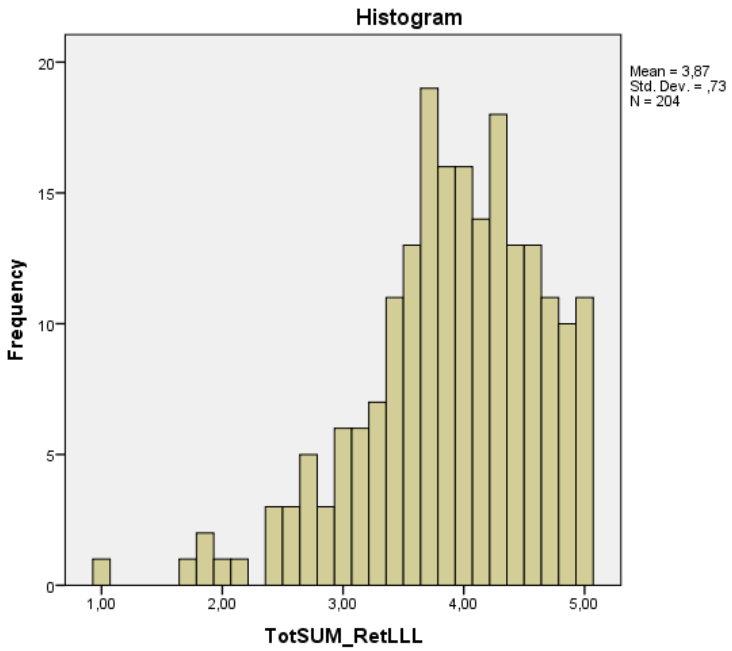
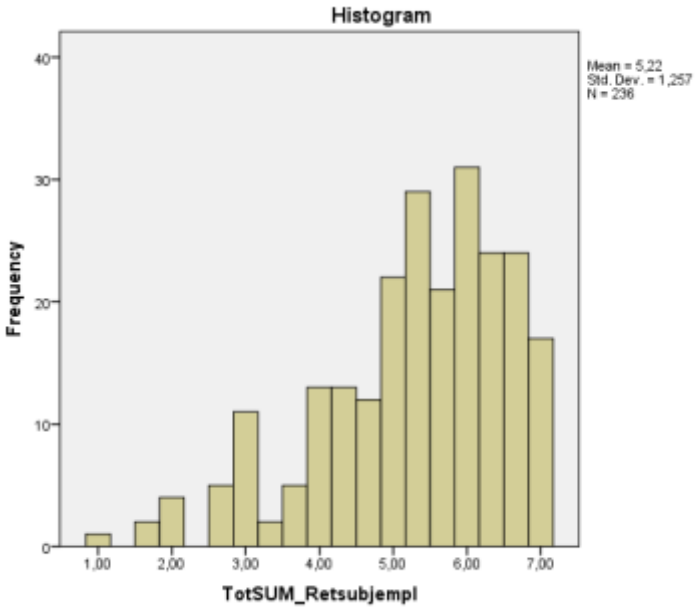
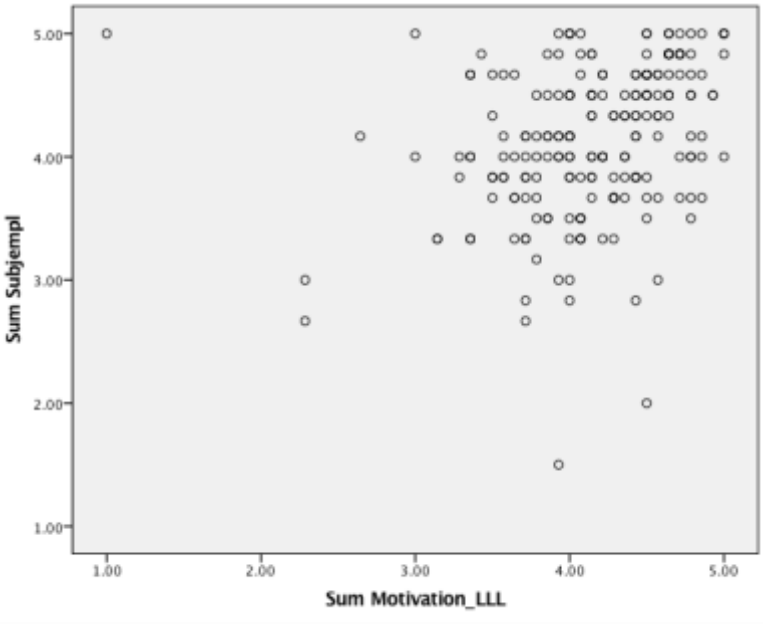


Figure 6.
Histogram of the distribution of the scores of the Retrospective self-perceived employability scale.



Appendix F: Scatter Plot

Figure 7
Scatter plot of the relationship between Motivation for LLL and Subjective employability.

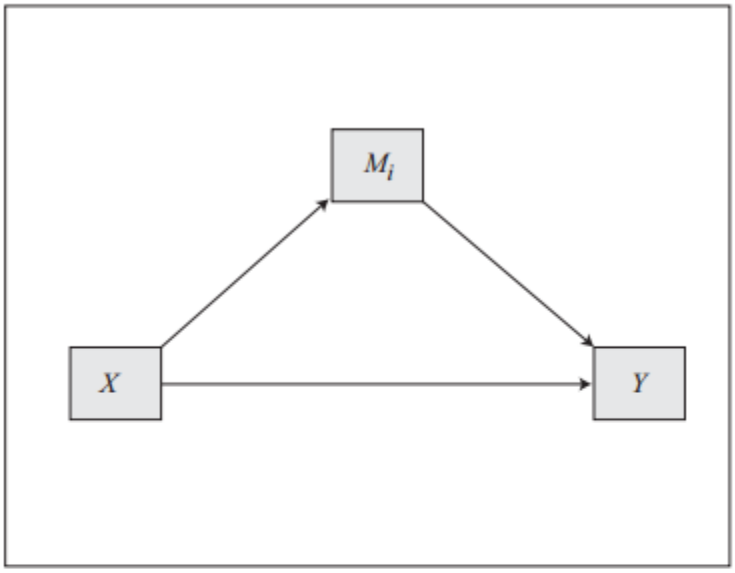

Sum Subjempl
5.00
4.00
3.00
2.00
1.00
1.00
2.00
3.00
4.00
5.00
Sum Motivation_LLL

Appendix G: Hayes Templates

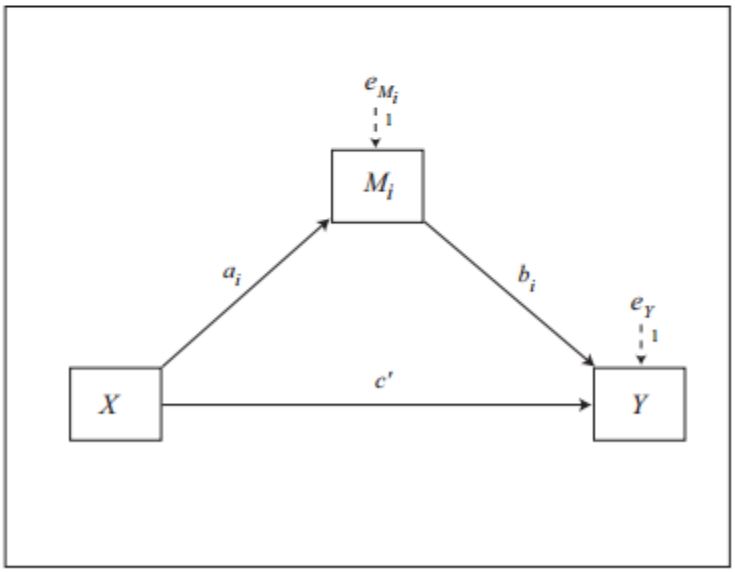
Premade template 4: simple mediation model
Andrew F. Hayes (2013)

Model 4

Conceptual Diagram



Statistical Diagram

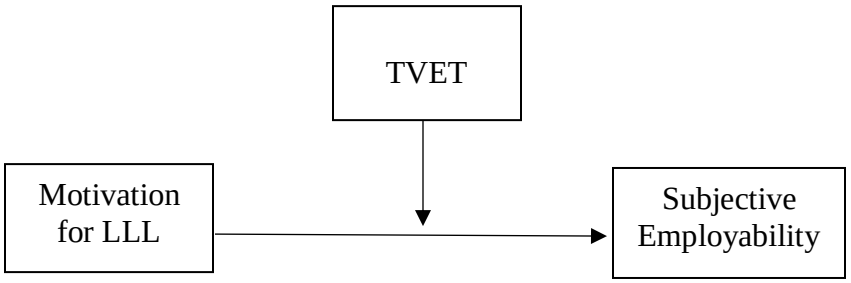


Indirect effect of X on Y through M_i = $a_i b_i$
Direct effect of X on Y = c'

*Model 4 allows up to 10 mediators operating in parallel

Appendix H: Moderation Analysis

Conceptual Model testing moderation (Y):



Statistical model

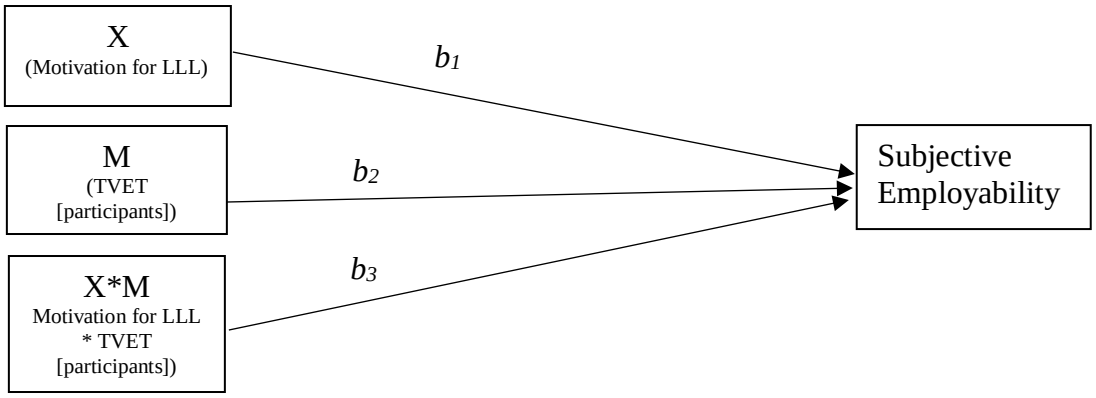


Table 5.
Model Summary for the statistical model testing the directed effect of motivation for LLL on Subjective Employability moderated by TVET [participants].

	Consequent Y (Subjective Employability)					
Antecedent	Coeff.	*SE*	*t*	*p*	LL 95% CI	UL 95% CI
Constant	4.1323	0.0425	97.28	<.001	4.0486	4.2161
M (TVET [participant])	0.0214	0.0823	0.2601	.795	-0.1409	0.1837
X (Motivation for LLL)	0.3271	0.1267	2.5817	<.01	0.0772	0.5769
Int_1	-0.825	0.2391	-0.3452	0.73	-0.5539	0.3889
	Model Summary			R^2 increase due to interaction		
	R^2=0.081			R^2chng=0.001		
	F(3,198)=2.821, *p*=<.05			F(1,198)=0.119, *p*=.730		