

Economic benefits of technical vocational education and training in the Kingdom of Eswatini: A case of the national handicraft training centre

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Abstract

This study estimates the economic benefits of the Government of Eswatini and its development partners' investment into the National Handicraft Training Centre (NHTC). Using NHTCs student database from 1995 to 2015, the study tracks graduates from the Centre to assess the demand and absorbability of their skills into the economy. Data on employment, self-employment status, and the level of skills upgrading with institutions of higher learning after graduating from the NHTC was collected. Employment earnings, self-employment, and part-time profits was collected to calculate their annual average incomes. The study finds that the NHTC return on investment calculated as the benefit-cost ratio of the graduates' incomes against the money spent on NHTC is 1: 4.66. This means for every E1 invested on NHTC, the economy generates E4.66 in the income generating activities of NHTC TVET graduates.

Keywords: Economic Benefits; Skills Utilisation; Youth Employment.

1. Introduction

Studies show that the perception that Technical Vocational Education and Training (TVET) is meant for the poor and the uneducated is unfounded and at best fictional (Sugar, 2014). In fact, TVET contributes to skills development for entrepreneurship and labour market absorption (United Nations Education Scientific and Cultural Organisation (UNESCO), 2014). The skills acquired from TVET are life long and serve people beyond the formal retirement age (Organisation for Economic Co-operation and Development (OECD), 2009). The economic benefits of TVET are numerous and include better wages for the employed, increased profits for the self-employed, and enable income generation through part-time skills utilisation (European Centre for the Development of Vocational Training (CEDEFOP), 2011). TVET also provides a stepping ladder in people's education by linking TVET graduates with institutions of higher learning for further studies, and with industries for practical work experiences and skills upgrades (CEDEFOP, 2011). The government benefits as well through increased skilled human workforce, increased tax revenues, and reduced unemployment rates (OECD, 2009). Other socioeconomic benefits from TVET include reduced crime rate as the youth are actively engaged in income generation activities which in turn contribute to their professional development and social standing (CEDEFOP, 2011). Technical Vocational Education and Training (TVET) in Eswatini can contribute to youth empowerment by equipping the youth with skills to access labour markets in the country and in the SADC region (Ministry of Economic Planning, 2006). TVET has an important role to play in the national development and poverty alleviation agenda, particularly in developing the practical talents of young people for economic growth and industrialisation.

According to the World Economic Forum, the key to economic growth lies in the talent, know-how, skills and capabilities of human capital. The Ministry of Education and Training; Ministry of Labour and Social Security; and the Ministry of Commerce, Industry and Trade are the key drivers of TVET in Eswatini. The country adopted the TVET Policy in 2010, using the Directorate of Industrial and Vocational Training, DIVT Act of 1982 as a guiding document. The Policy sets the guidelines for TVET implementation mechanisms. The Policy further gives direction on the types of activities each ministry is expected to implement. The goal of the TVET Policy is "To put in place a demand driven TVET system responsive to, and contributing to the realisation of the national, social and economic development strategies and objectives of the

Kingdom of Eswatini” (TVET Policy, 2010). The World Bank (2013) reports that 6881 trainees enrol in the different TVET Institutions in Eswatini per year. Out of the total number of enrolment, 36% enrol in public institutions, 48% enrol in private institutions, while 16% enrol in other institutions. One of the prominent public TVET institutions in the country is the National Handicraft Training Centre (NHTC). It forms part of the 70 TVET Institutions, (27 public institutions, 29 private and 14 NGOs) providing training in 6 areas of vocational training, consisting of Sewing, Computer skills, Fine Arts and Ceramics, Wood and Leather, Electrical and Plumbing, and Metal Works (Ministry of Commerce Performance Report, 2012).

An economic assessment of TVET in Eswatini is necessary to determine whether government and its development partners in TVET investments are benefiting the right kind of benefits to the economy. Very little information is available on the economic benefits of TVET in the Kingdom of Eswatini. In fact, this is the first study to investigate the economic benefits of TVET in the country. Conceivably, this has compromised the country’s ability to develop policies that support TVET appropriately and properly reward agents involved in TVET.

Through the establishment of the NHTC, the Government of Eswatini has on average allocating a budget of E3, 138,084 annually to the NHTC, while the Republic of China on Taiwan has been allocating an average of E7,011,892.00 annually. In view of the lucrative investments made by the government of Eswatini, and the Republic of China on Taiwan on the NHTC, the economic benefits of TVET remained undocumented given that no study has evaluated the return on investment/economic benefits that accrue to the economy through the graduates ‘absorption into the labour market, and in self-employment. Questions such as what is the economic benefit of TVET in Eswatini remain unanswered.

Studies focusing on TVET in Eswatini such as UNESCO (2013) and the World Bank (2013; 2010) do not spell out the economic benefits of TVET in the country. Rather, these studies focus on how TVET is governed and implemented in the country. The country needs information/knowledge on the economic benefits of TVET to develop a robust and impactful TVET system, to incite economic activity through technical and vocational skills development. With increased skills development, TVET can positively contribute towards employment creation and income generation activities and ultimately reduce the rife youth unemployment in the country which is at 51.6% (Ministry of Labour and Social Security, Labour Force Survey (LFS), 2013).

Findings of the study are aimed towards policy makers in Eswatini to contribute towards the development of TVET structures, funding and policies that will benefit the youth, and increase production and productivity of the economy. Kanwal (1976) projected that if one member of every Eswatini household of an average size of 10 members could take to craft work, 52,000 people could be gainfully employed almost immediately. He estimated that if each person could produce articles worth only E5 per month, the total earnings would be in the order of E3.12 million per year. Bearing in mind Kanwal's (1976) projections, the study investigates the economic benefits of TVET in the Swazi economy quantifying and qualifying some of the employment and income generation prospects of the NHTC graduates.

The study assesses the economic benefits of TVET in Eswatini using the National Handicraft Training Centre (NHTC) as a case study. Specifically, the study evaluates the return on investment of Government and Taiwan's investment on NHTC, and the benefits to the economy at large. To assess the benefits to the economy at large, the study (i) determines the extent to which NHTC graduates are using their TVET skills for self-employment, (ii) assesses the rate at which NHTC graduates are being absorbed by the formal labour market, (iii) assesses the rate of continuous studying after graduating at the NHTC, and (iv) quantifies whether Government's subvention and Taiwan's financial donation to NHTC are economically viable investments towards TVET development in the country.

2. Financing TVET in Eswatini

In 2015, the total education expenditure was E2.569 billion representing 4.89% of Eswatini's GDP that year. Of the education budget, the GoS allocated E54.479 million (2.12% of the education budget) to TVET under the Ministry of Education. NHTC, however, is one of 27 public TVET institutions in the country administered by the Ministry of Commerce, Industry and Trade (World Bank, 2014). The budget allocated to NHTC in 2015 as a percentage of the Ministry of Commerce budget was 2.75%.

The provision of TVET at NHTC dates back to 1974, when the centre was established to provide skills for self-employment of the youth who drop out of school (Ministry of Commerce Report, 2000). The mandate of NHTC was to create an enabling environment for the development and expansion of handicraft enterprises and producers (Ministry of Commerce Performance Report, 2000). The target group to absorb into the handicraft sector through skills development were school leavers or individuals that did not complete high school or qualify for tertiary education (Ministry of Commerce Performance Report, 2000).

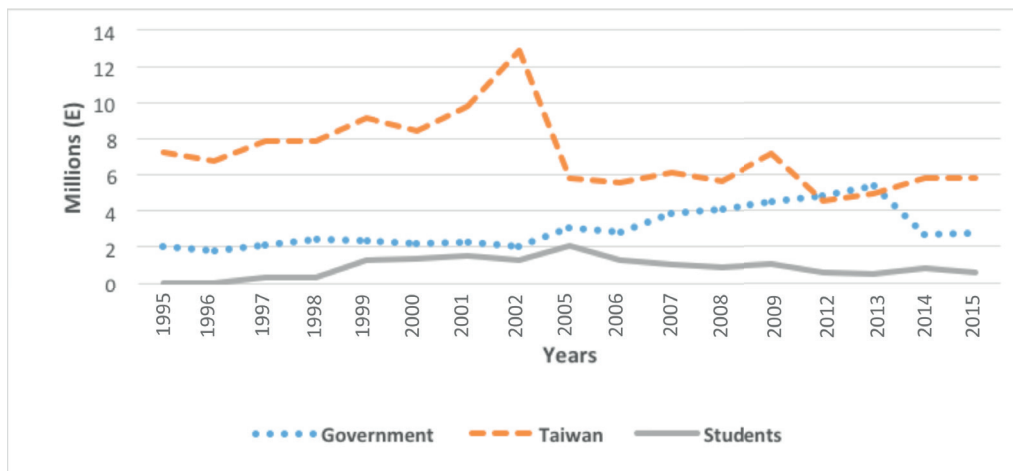
The specific objectives of NHTC are; (1) to help trainees utilise new techniques and to reserve and develop the Old Swazi Cultural Heritage; (2) to promote self-reliance in order to enable trainees to stand on their feet and to give training to others after completing the courses; (3) to use and join with the already existing extension work as a foundation to carry out an effective development; (4) to encourage handicraft activities in Eswatini; (5) to search for the local sources of useful materials in Handicraft; and (6) to demonstrate new designs and techniques in improving income generation (Ministry of Commerce Performance Report, 2000). The skills the youth acquire from NHTC improve their chances of employment or self-employment (Ministry of Commerce Performance Report, 2000).

The Government of Eswatini (GoS) together with the Republic of China on Taiwan established NHTC upon the realisation that over 7,000 young people reached the age of 15 years without basic education (Kanwal, 1976). At that time, about 3,500 pupils dropped out of school before they reached Grade Seven (Kanwal, 1976). Also, personal problems and circumstances compelled about 10,500, of which more than half were women to join subsistence agriculture. A majority of them remained at their homes without any source of income while others ended up giving in to marriages before the right time (Kanwal, 1976). The pressing need for maximising employment opportunities through employment and or self-employment oriented programmes therefore arose, for Swazis who dropped out of school and those who resided in the rural areas without any source of income (Kanwal, 1976). The country's beautiful scenery, the existence of a variety of materials, like wood, grass, leaves, fibre, clay and semi-precious stones made the production of handicrafts possible and became a significant driving factor to the tourism industry in Eswatini. All these materials, which are regarded as primary and secondary provide an outstanding basis for traditional and new handicrafts, which is seen as an integral part in its promotion.

Therefore, during the period under review, NHTC has been financed by the government of Eswatini, the Republic of China on Taiwan and Student's Contributions through tuition fees (Ministry of Commerce Performance Report, 2000). The financing of TVET by the Taiwanese government was inspired by the view that TVET was a priority for their development assistance at the time (Kanwal, 1976). The two Governments, Eswatini and the Republic of China on Taiwan signed a Memorandum of Agreement on Handicraft Technical Cooperation in 1973 for the purpose of cooperating through the centre to jointly develop the Handicraft Industry in Eswatini.

Finances at NHTC are used in procuring equipment for the courses offered, food provision and general day to day operations of the Centre. From 1974, when the centre was established to 1996, students were not charged tuition fees. Training was free since Taiwanese Government was fully funding the operations. Students were entitled to a monthly allowance of E30 or E110.96 in 2015 Lilangeni value. Over and above the allowances given to students, best performing students were awarded business equipment/tools in support of their entrepreneurship endeavours. In 1997, NHTC introduced a small tuition fee of E2762.00 charged to students (which was E800 using the value of the Lilangeni in 1997). This was done to instil a sense of commitment to the students in order to appreciate the skills acquired. Figure 1 below shows the Financing of NHTC by the Government, the Republic of China on Taiwan and Students' Contributions.

FIGURE 1: FINANCING OF NHTC BY THE GOVERNMENT OF ESWATINI, REPUBLIC OF CHINA ON TAIWAN AND STUDENTS' TUITION



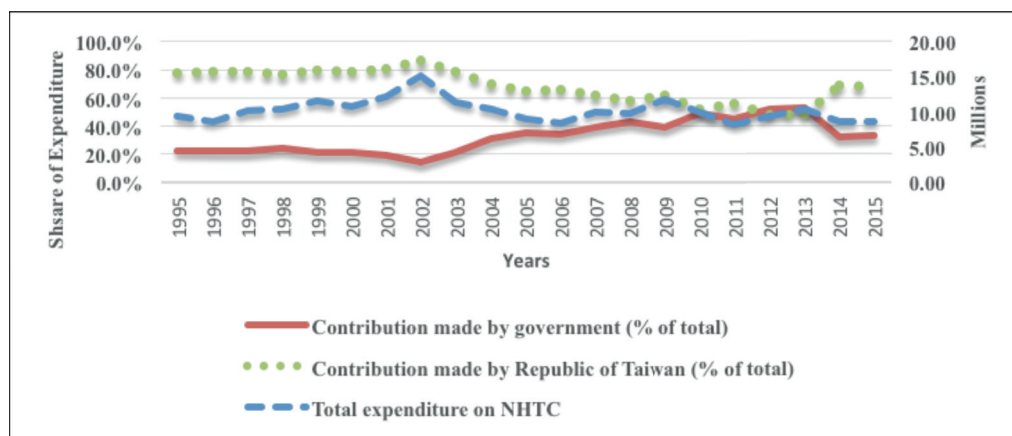
Source: Government Estimate Books, Republic of China on Taiwan Records, NHTC Records

Notes: The Figure shows 3 different time series; a percentage share of government’s contribution to NHTC, a percentage share of Taiwan’s contribution to NHTC, and student’s share of contributions to NHTC.

Figure 1 above presents the Government, Taiwan, and Students’ contribution to NHTC over the past 20 years. In the last 20 years, Real Funding for NHTC from the three sources of funding are expressed in 2015, Emalangeni (E) currency values. Government budget allocation increased from E2 million in 1996 to 5.4 million in 2013. In the 20-year period under review, Government has on average each year spent E3,138,084 on NHTC while Taiwan spent double of that amount each year, which on average is E7,011,892. The Government

funding topped up the budget allocated by the Republic of China on Taiwan. In 2006, the decrease was caused by freak drought experienced in the country, in 2011 the country experienced a fiscal crisis following the global financial crisis in 2008. In 2014, government funding to NHTC plummeted caused by economic stagnation emanating from the failure of the agriculture sector. Generally, the graph is showing an upward trend on government's expenditure on NHTC (1996-2013). It suggests that government is indeed committed to support TVET in Eswatini for skills development to enable youth employment creation, and for general poverty alleviation. Figure 2 below demonstrates the share of contributions (GoS and Taiwan) to NHTC over the twenty-year period.

FIGURE 2: SHARE OF CONTRIBUTION, BY GOVERNMENT OF ESWATINI AND REPUBLIC OF CHINA ON TAIWAN ON NHTC



Source: Government Estimate Books, Republic of China on Taiwan Records, NHTC Records

Notes: The Figure shows 3 different time series; a percentage share of government's contribution to NHTC, a percentage share of Taiwan's contribution to NHTC, and the total expenditure on NHTC from 1995 to 2015.

The Republic of China on Taiwan has been making a fixed annual donation of US\$500,000 to NHTC since inception of the Centre in 1974. The two Governments, Eswatini and the Republic of China on Taiwan signed a Memorandum of Agreement on Handicraft Technical Cooperation in 1974 for the purpose of cooperating through the centre to jointly develop the Handicraft Industry in Eswatini for employment creation among youth. The effect of both inflation and fluctuation in exchange rate is responsible for the observed pattern of the graph. The share of the Taiwanese government allocation to NHTC has been larger than the Government of Eswatini's share 69%: 31%. Regrettably, the Taiwanese government has pulled out its financial support from NHTC after

the expiry of the 40 years' agreement signed between the two Governments in 1974. The succession plan was that the Government of Eswatini would take over the funding of the centre through its annual Education budget allocations.

Students have been making marginal contributions of E698,204 on average over the 20-year period. The figure demonstrates that student's contributions to NHTC amounted to 6.44%. In 1995-1996, students were not charged tuition fees since the courses were fully sponsored by the Taiwanese Government. Charges were first effected in 1997 as a way of instilling commitment to the students to value the training received. In 2003 and 2004, 2010 and 2011, there were no classes conducted at NHTC since there were renovations taking place. It is observed in the figure that in 2005, after the completion of the renovations, the enrolment was higher when compared to 1998 and 2002, which shows that the youth were waiting in anticipation for the finalisation of the renovations. The tuition was also low (E5000) at the time. After the 2010/2011 renovations, the enrolment dropped because the tuition fee was increased to E8,000, which is a bit higher for students who cannot afford.

Worth noting with students' contributions is that they depend mostly on the charges for that particular year and the number of students enrolled. The more students enrolled, the more money accrued by the centre. Students' tuition fees are deposited in a special account administered by the Ministry of Commerce. Accessing the finances in this account requires following the government's procurement procedure, which compromises service delivery in view of the time taken to access it, which is between 2 to 3 months.

3. Methods

3.1. Data Collection

The study targeted 2,331 graduates who acquired skills from the different courses offered at NHTC covering the period 1995 to 2015. A sample of 648 graduates was drawn from the targeted population. All study units (former NHTC students) were contacted, however the success rate was 41% (267 of the target population). Therefore, data was collected from the 267 graduates of NHTC. The researchers designed a questionnaire to survey the graduates using telephone interviews. The questionnaire for data collection was adapted from a similar survey conducted by Australia's Samoa Qualifications Authority in 2014. The researchers adapted the questionnaire to collect data on student demographics before enrolment at NHTC, course enrolment, employment status and skills utilisation after graduation from NHTC, income from part-

time skills utilisation, full-time self-employment and formal employment, and further education and skills training beyond NHTC. Data reliability, and validity was done through meetings with the NHTC instructors after data collection.

Secondary data was collected from NHTC Records, Government Estimate Books, Ministry of Commerce Performance Reports, Ministry of Education Performance Reports, the National Development Strategy, the Sustainable Development Goals, African Union TVET Continental Strategy, World Bank's Report on the Assessment of Eswatini's TVET System to Improve Economic Growth. The Status of TVET in SADC Report, has been used to benchmark TVET delivery in Eswatini with three other countries in the SADC Region, namely, South Africa, Namibia and Botswana.

3.2. Data Analysis

The study employs a descriptive approach (tables, graphs and bar chart) to determine the demand for courses as well as the extent of skills utilisation after graduating from NHTC. Financial data illustrating Government and Taiwan's investment, and the students' tuition contributions to NHTC was deflated to 2015 value, and foreign currency (US\$) converted to local currency using the budget allocation by the Republic of China on Taiwan to NHTC over the period covered by the study (1995 – 2015).

To determine whether the financial investment on NHTC is economically worthwhile, the study calculates the benefit-cost ratio of the total financial investment on NHTC over the financial earnings of the NHTC graduates over the 20-year period (1995-2015). According to Griffin (2016) an analysis of the cost and benefits of TVET is important because it provides a basis for making decisions about investing in training, particularly for government, individuals and businesses. Schueler (2013) argues that developing a robust return on investment (ROI) requires an understanding of the specific TVET system context. An ROI that uses aggregated cost-benefit analysis has to be context specific with the costs and benefits restricted to the specific TVET environment. Schueler (2013) defines ROI within the TVET context as the measure of the monetary benefits obtained over a specific period of time in return of an investment in a training program. It calculates the extent to which the benefits of the training exceed the costs and the following models are usually used to calculate the ROI; Cost Benefit Analysis (CBA); Internal Rate of Return (IRR); Net Present Value (NPV); Return on Expectation (ROE), and Social Return on Investment (SROI).

This study estimates the benefit-cost ratio (BCR) of the NHTC TVET investment as the equivalent money value of the benefits and costs associated with the trainings offered by NHTC. The BCR was selected on the basis that it was found appropriate to calculate the benefits accrued by the NHTC graduates to the economy compared to the twenty-year level of funding. The ratio provides information on income generated based on every E1 invested on NHTC. Due to limited data, the variables of the benefit-cost ratio are restricted to the income or stated earnings of the NHTC graduates as the benefit of the NHTC investment and the total money spent on NHTC as the cost of the investment. While the skills acquired by the NHTC graduates have an equivalent monetary value including the positive externalities induced by their economic activities, the study focuses on the money spent on NHTC to that minimally, the income generating activities of the graduates should at least amount to the total money invested on NHTC for this TVET programme to be deemed economically worthwhile.

$$NHTC\ BCR = \frac{Income\ generated\ by\ NHTC\ Graduates\ (1995 - 2015)}{Total\ NHTC\ Costs\ (1995 - 2015)} \quad (1)$$

The equation means that the Benefit Cost Ratio of NHTC is calculated by adding up the income generated by the NHTC Graduates enrolled between 1995-2015 over the total NHTC costs incurred by the government of Eswatini and the Republic of China on Taiwan.

4. Results and Discussion

4.1. Descriptive Statistics

Table 1 below presents summary statistics of the survey respondents of former graduates of NHTC. The Table shows an almost even proportion of gender categories. The mean age in the sample is 32.8 years and a relatively bigger portion (62.2%) of the sample was found to be single. The minimum age at enrolment is 20 years, average age is 32.6, maximum is 61 years and the standard deviation is 6.626. In terms of geographical origin, Manzini has a bigger proportion (42.3%) of the respondents followed by Hhohho with 36.7% and Lubombo and Shiselweni comprise 10.9% and 10.1%, respectively. Table 1 also presents a biographical sketch of the respondents (particularly their pre-enrolment characteristics). A majority of the respondents, 64% got funding for tuition from family or friend, 31% self-sponsored their training, 2.6% sponsored by other sponsors, 0.4% sponsored by private companies, 2.6% sponsored by the constituencies they come from, 0.7% applied for loans, and only 0.4% attended

TABLE 1: DESCRIPTIVE STATISTICS AND OTHER BIOGRAPHICAL SKETCH OF THE SAMPLE (1995 – 2015)

Socio-economic and pre-enrollment characteristics	Statistics
Respondents' age (mean)	32.8
Respondents' sex (% of sample)	
Female	50.9
Male	49.1
Marital status (% of sample)	
Single	62.2
Married	37.8
Region (% of sample)	
Manzini	42.3
Hhohho	36.7
Lubombo	10.9
Shiselweni	10.1
Education level at enrollment (% of sample)	
Primary	3.7
Secondary	9.7
High school	86.5
Age at enrollment (years)	
Minimum	20
Average	32.6
Maximum	61
Standard Deviation	6.626
Occupation before enrolling to NHTC (% of sample)	
Schooling	15.0
Employed	29.6
Self employed	10.1
Nothing	44.9
Farming	0.4
Sponsor (% of sample)	
Free	0.4
Self	31.1
Company	0.4
Family or friend	62.2
Loan	2.6
Government or Inkhundla	0.7
Other sponsors	2.6
Type of Programme (% of sample)	
Full-time	75.7
Part-time	1.1
Outreach	23.2

Source: Authors' own representation using Survey Data

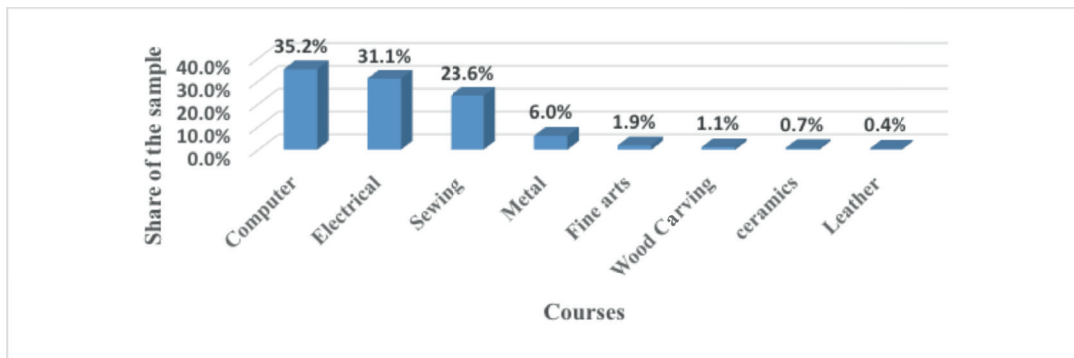
Notes: Age at enrolment: Maximum 72 years, attended the outreach program offered at the constituencies.

the training when it was still free. It is evident from the Table that, among other things, the sample is not a representative of those learners who enrolled when the training was still offered for free (between 1976 and 1996).

4.2. Course Demand, by Sex Category at NHTC

Figure 3 and Figure 4 present demand for courses offered by NHTC. Figure 3 presents total demand per course offered while Figure 4 disaggregates demand by sex. A large proportion of the respondents (32.2%) were enrolled in Computers, followed by Electrical (31.1%) and Sewing (23.6%). Figure 4 shows that the Computer course is dominated by females while Electrical and Metalwork is dominated by males. On the extreme, Sewing is solely demanded by females (23.6%) whereas Fine Art (1.9%), Wood Carving (1.1%) and Leather (0.4%) are solely demanded by males. This shows that the enrolment patterns follow traditional stereotypes and norms. Additionally, even though Government and the Republic of China on Taiwan established NHTC to be the cornerstone of Handicraft training in the country, the Centre is only producing computer skills, electricians and seamstresses. The crafts, particularly ceramics, leather, wood carving and metalwork, are lagging behind in enrolment.

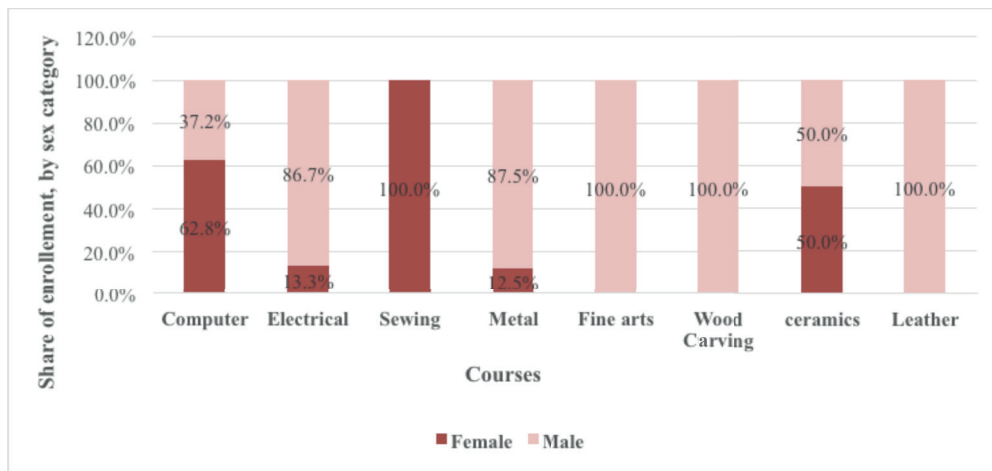
FIGURE 3: DEMAND FOR COURSES OFFERED BY NHTC



Source: Authors' own representation using survey data

Notes: The figure shows that the demand for Computer skills is higher, when compared to electrical skills and sewing. This indicates that NHTC is producing IT, Electrical and Sewing Artisans more than metal, Fine Arts, Wood Carving, Ceramics and Leather Artisans.

FIGURE 4: DEMAND, BY SEX CATEGORY, FOR COURSES OFFERED BY NHTC



Source: Authors' own representation using survey data

Notes: The figure shows that the demand for computers and sewing amongst females is high as females dominate the two courses. Only a few females 3.3% were observed in electrical and 12.5% in metal. Males dominated five courses, metal, fine arts, wood carving and leather. However, the demand for ceramics is similar for both sexes as there is an equal share of both males and females.

4.3. Skills Utilisation Completion of Training NHTC

Figure 5 and Figure 6 below present skills utilisation after completion of studies at NHTC. The former aggregates skills utilisation, while the later presents disaggregated skills utilisation, by sex category. From Figure 5, it is evident that a vast majority (73.1%) of graduates are involved in productive economic activities, and only 26.2% of the sample reported to be unemployed while 0.4% continued with studying. This suggests that the absorption capacity of NHTC graduates in the labour market is high, the courses offered are relevant to the economy, and that TVET closes the unemployment gap between high and low educated youth. It further suggests that with the availability of capital to support the establishment of businesses, the number of the unemployed youth may decrease as more may consider engaging in self-employment (25.5% of the sample are self-employed after training from NHTC).

FIGURE 5: SKILLS UTILISATION AFTER COMPLETION OF STUDIES AT NHTC



Source: Authors’ own representation using survey data

Notes: The figure shows that 47.6% are employed, 25.5% self-employed, 0.4% continued with studying, whilst 26.2% are unemployed.

When disaggregating skills utilisation data by sex (Figure 6 below), it is apparent that none of the sampled females continued with studying after graduating at NHTC. It also appears that there is an equal chance for both males and females to become self-employed. Unemployment is slightly higher among females (55.7%) compared to males (44.3%).

FIGURE 6: SKILLS UTILISATION, BY SEX CATEGORY



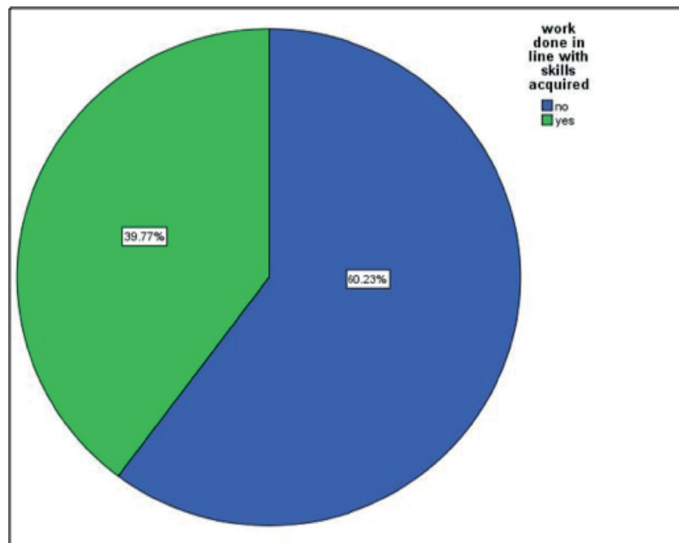
Source: Authors’ own representation using survey data

Notes: The figure shows that only males continue with studies (100%), 51.2% males are employed more than females, 48.8%). Both sexes are equally self-employed at 50%. With regard to unemployment, females are affected by unemployment, (55.7% more than males (44.3%).

Considering that one of the NHTC’s mandate is to encourage entrepreneurship within the crafts industry, the level of enrolment in craftwork, and the level of self-employment (25.5%) compared to formal employment (47.6%) is low.

Furthermore, only 27% of those in productive employment after NHTC use their acquired skills for part-time profit making. It suggests that the training curriculum needs to shape trainees' attitudes towards self-employment and emphasise full utilisation of their skills beyond their normal fulltime working hours. Indeed, Figure 7 below shows that only 39.77% of the graduates are actively using their TVET skills in their jobs or are employed in work relevant to the skills acquired at NHTC, while 60.23% are not using their TVET skills or employed in jobs irrelevant to the skills acquired. Reasons given for irrelevant jobs to acquired skills include inability to find jobs relevant to their skills (22%), lack of resources to start their own businesses (22%), some of the graduates did not have any valid reason for engaging in jobs relevant to their skills (12%) while some of the students (4%) did not grade test. Others cite different problems, including, lack of customers, misplaced certificates, found new jobs, and upgrading certificates. Though all productive forms of employment are commendable, less than 40% of the graduates are using their TVET skills after graduation, and less than 30% have started their businesses to take advantage of the skills acquired at NHTC. Moreover, only 10% of the graduates are involved in the handicraft sector after graduating from NHTC.

FIGURE 7: SKILLS UTILISATION ON ACQUIRED EMPLOYMENT



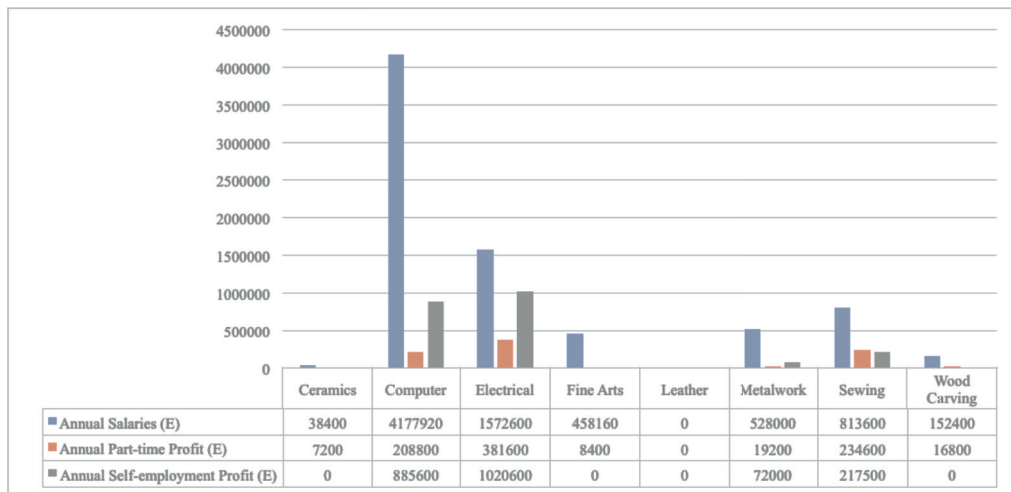
Source: Authors' own representation using survey data

Notes: The figure shows that 39.77% is employed in companies where the acquired skills at NHTC are relevant, while 60.23%, is employed in companies irrelevant to the skills acquired at NHTC.

4.4. Economic Benefits of NHTC to Eswatini's Economy

The results show that graduates are involved in income generating activities in the form of self-employment, part-time skills utilisation, and fulltime formal employment. Figure 8 below shows the total annual earnings of the sample graduates in 2015 while Figure 10 shows the average earnings apportioned to each course offered at NHTC. From the sample graduates, total earnings in 2015 were benchmarked at E10,813,380. Figure 8 below shows the earnings of the graduates according to their trained skills. Annual earnings from part-time skills utilisation amounted to E876,660 with an average of E11,845.60 per graduate; earnings from full-time self-employment amounted to E2,195,700 with an average annual income E32,289.70 per graduate that started own business; and earnings from formal employment were the highest amounting to E7,741,080 with average annual income per graduate of E62,935.60. Electrical Engineering graduates derived the highest earnings taking up 48.8% and 27.5% of the total earnings respectively. In contrast, Leather, Ceramics, and Wood Carving graduates made the least earnings contributing 0%, 0.4% and 1.6% respectively to the total earnings.

FIGURE 8: TOTAL ANNUAL EARNINGS BY TVET COURSE (1995 – 2015)

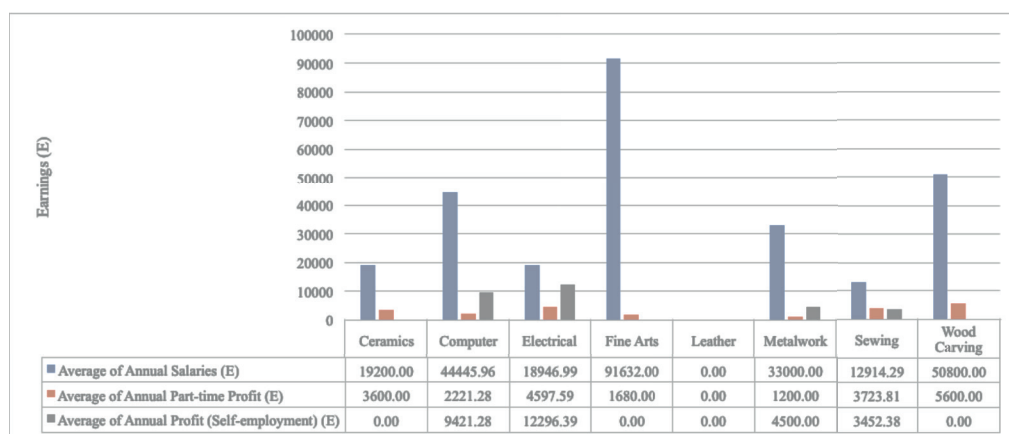


Source: Authors' own representation using survey data

Analysis of the earnings according to participating graduates within each course, Figure 9 reveals that Fine Arts graduate earn the highest salaries with annual average earnings of E91,632, followed by Wood Carving (E50,800),

Computer trained graduates (E44,446), and Metal Work graduates at E33,000 on average per year. In terms of part-time skills utilisation, Wood Carving (E5,600), Electrical (E4,598), Sewing (E3,724) and Ceramics (E3,600) graduates made the most annual income per graduate. Though enrolment into the crafts such as ceramics, wood carving, leather and metal work is low, the individual incomes from part-time skills utilisation suggest that there are solid opportunities for income generating activities within the handicraft sector that need to be taken up by the NHTC trainees and graduates. For income derived through full-time self-employment, electricians and computer trained graduates are making annual profits per graduates of E12,296 and E9,421 respectively. Others that make money from starting their own businesses are the Metalwork and Sewing graduates.

FIGURE 9: AVERAGE ANNUAL EARNINGS BY TVET COURSE (1995 – 2015)



Source: Authors' own representation using survey data

Notes: The Figure shows the average earnings of the graduates after graduation from NHTC in 2015 Lilangeni value.

4.5. Economic Benefits of NHTC to Eswatini's Economy

This section calculates the BCR using the benefit and costs induced by the NHTC over the twenty-year period (1995-2015). The study uses the employment statistics of the 267 graduates contacted in 2015 to project the benefit-cost ratio (BCR) over the twenty-year period, 1995-2015, using the total enrolment of 2331 graduates at NHTC. Table 2 below reveals that to train 2313 graduates the total financial resources or money spent on NHTC amounts to E243.8 million in

the period under review or E105,414.30 per NHTC graduate. The Government of Eswatini contributed E81.9 million (33.6%), student tuition contributed to E14.7 million (6%), whilst the Republic of China on Taiwan contributed a larger share of 147.2 million (60.4%). Excluding the cost of the NHTC facilities (E16,011,548), NHTC has been training students at an average cost of E98,492 per trainee per year. To compare the income generated by the NHTC graduates, Table 2 shows that the estimated total income generated by the NHTC graduates amounts to E1.135 billion over the twenty-year period in 2015 Lilangeni value. Formal employment salaries generated E812.6 million (71.6%), income from self-employment generated E230.5 million (20.3%), and income from part-time skills utilisation generated E92.0 million (8.1%). Minimally on average each year, a graduate from NHTC can generate E24,539 into the economy.

The income generated (E1.135 billion) by the employment activities of the NHTC graduates exceeds the money spent on NHTC (243.8 million) over the twenty-year period. Specifically, the benefit-cost ratio equals 1: 4.66 (see NHTC BCR below from Equation (1)) which means for every E1 spent (by GoS, Taiwan and student tuition) on NHTC, E4.66 is generated in the economy in the form of income generating activities of the NHTC graduates. Since, the ratio of benefits to costs is greater than one (1), NHTC is an economically viable investment that generates more money than the money spent on it. In fact, the benefit-cost ratio is an underestimate because the study does not quantify all the economic activities induced by the skills acquired by the NHTC graduates. The mere existence of NHTC provides employment to the instructors and administrators of the Centre. The skills acquired by the graduates will be of service to the economy in the productive lifetime of the graduates. Businesses created by the graduates transfer skills acquired at NHTC to the employees of these new businesses, and the creation of businesses increases aggregate production in the economy.

Most importantly, the skills developed by NHTC contribute to the socioeconomic development of the youth in Eswatini. The TVET skills remove the barrier to enter the job market in the country and increase business and employment opportunities for other young people. With productive employment induced by the TVET skills, certainly contributes towards reduction in crime rate as the youth are actively engaged in income generation activities which in turn contribute to their professional development and social standing as CEDEFOP (2011) suggested. Table 3 suggests that TVET income benefits seem to be a game of numbers, the more students enrolled and trained, the more income benefits accrue to the economy.

The 4.66 benefit cost ratio that accrues to the Government of Eswatini on its investment on NHTC is high. With more funding directed to NHTC and similar TVET institutions, the Government of Eswatini can realise economic returns comparable to those realised by the United Kingdom TVET system of £16 – 20 for every £1 invested.

TABLE 2: GOVERNMENT OF ESWATINI, TAIWAN AND STUDENT COST ON NHTC (1995-2015)

YEAR	COSTS ON NHTC				TOTAL NHTC INVESTMENT COST (E)
	Capital (Land, Buildings & Renovations)	Government Subvention to NHTC (E)	Taiwan Contribution to NHTC (E)	Student Contributions (E)	
1995	4 302 209.10	2 047 633.56	7 194 751.40	0	13 544 594.06
1996		1 868 317.89	6 745 375.10	0	22 158 287.05
1997		2 172 953.09	7 869 534.00	303 383.30	32 504 157.44
1998		2 465 726.81	7 869 414.70	312 766.00	43 152 064.95
1999		2 409 273.74	9 106 486.40	1 247 772.80	55 915 597.89
2000		2 251 085.01	8 457 629.00	1 341 948	67 966 259.90
2001		2 348 068.93	9 805 230.20	1 532 364	81 651 923.03
2002		2 098 547.19	12 870 226.80	1 277 638	97 898 335.02
2003		2 421 607.25	8 931 903.60	0	109 251 845.88
2004		3 139 540.05	7 197 963.90	0	119 589 349.82
2005		3 140 404.96	5 815 198.00	2 068 705	130 613 657.78
2006		2 861 444.12	5 577 291.20	1 255 814	140 308 207.10
2007		3 879 019.94	6 142 499.80	1 008 223.00	151 337 949.84
2008		4 141 818.18	5 651 515.20	839 930.40	161 971 213.62
2009		4 504 598.75	7 180 250.70	1 065 047.00	174 721 110.07
2010	6 615 000.36	4 758 944.40	5 132 565.30	0	191 227 620.13
2011	5 094 339.53	3 649 135.33	4 569 304.20	0	204 540 399.19
2012		4 840 946.38	4 544 611.90	558 620.70	214 484 578.17
2013		5 372 806.35	4 953 393.50	503 483.60	225 314 261.62
2014		2 707 382.09	5 812 848.60	778 604.60	234 613 096.91
2015		2 820 512.00	5 821 750.00	568 000	243 823 358.91
TOTALS	E 16 011 548.99	E 65 899 766.02	E 147 249 743.50	E 14 662 300.40	E 243 823 358.91

Source: Authors' own representation using survey data

TABLE 3: STUDENT ENROLMENT AND INCOME FROM NHTC GRADUATES (1995 – 2015)

Year	BENEFITS					
	Students enrolled	Trained students	Formal salaries (E)	Self-employment income (E)	Part-time skills utilisation income (E)	Total Generated INCOME (E)
1995	49	0	-	-	-	-
1996	110	49	1 420 647.64	402 956.18	160 874.16	1 984 477.98
1997	110	159	4 609 856.63	1 307 551.69	522 020.22	8 423 906.52
1998	123	269	7 799 065.62	2 212 147.19	883 166.29	19 318 285.62
1999	166	392	11 365 181.12	3 223 649.44	1 286 993.26	35 194 109.44
2000	200	558	16 177 987.42	4 588 766.29	1 831 995.51	57 792 858.65
2001	242	758	21 976 549.21	6 233 485.39	2 488 624.72	88 491 517.98
2002	226	1000	28 992 808.99	8 223 595.51	3 283 146.07	128 991 068.54
2003	0	1226	35 545 183.82	10 082 128.09	4 025 137.08	178 643 517.53
2004	0	1226	35 545 183.82	10 082 128.09	4 025 137.08	228 295 966.52
2005	213	1226	35 545 183.82	10 082 128.09	4 025 137.08	277 948 415.51
2006	136	1439	41 720 652.13	11 833 753.93	4 724 447.19	336 227 268.76
2007	118	1575	45 663 674.16	12 952 162.92	5 170 955.06	400 014 060.90
2008	118	1693	49 084 825.62	13 922 547.19	5 558 366.29	468 579 800.00
2009	151	1811	52 505 977.08	14 892 931.46	5 945 777.53	541 924 486.07
2010	0	1962	56 883 891.24	16 134 694.38	6 441 532.58	621 384 604.27
2011	0	1962	56 883 891.24	16 134 694.38	6 441 532.58	700 844 722.47
2012	96	1962	56 883 891.24	16 134 694.38	6 441 532.58	780 304 840.67
2013	91	2058	59 667 200.90	16 924 159.55	6 756 714.61	863 652 915.73
2014	93	2149	62 305 546.52	17 672 506.74	7 055 480.90	950 686 449.89
2015	71	2242	65 001 877.75	18 437 301.12	7 360 813.48	1 041 486 442.25
TOTALS	2313	2313	E 67 060 367.19	E 19 021 176.40	E7 593 916.85	E1 135 161 902.70

Source: Authors' own representation using survey data

From equation (1) in the methods sections, the BCR is calculated from the total income earnings of the graduates and cost on NHTC as follows;

$$NHTC\ BCR = \frac{Income\ generated\ by\ NHTC\ Graduates\ (1995 - 2015)}{Total\ NHTC\ Costs\ (1995 - 2015)}$$

$$NHTC\ BCR = \frac{\mathbf{E243,823,358.91}}{\mathbf{E1,135,161,902.70}} \quad (2)$$

Therefore, NHTC BCR (1995-2015) = 4.66.

5. Conclusion and Recommendations

5.1. Conclusion

The purpose of the study was to investigate the economic benefits of TVET to the economy of Eswatini. The study traced the graduates of NHTC as a case study to (i) determine the extent to which graduates use the skills acquired for self-employment; (ii) to assess the rate of absorption of NHTC graduates in the labor market; (iii) to assess the rate of continuous upgrading of skills with other training centers; and (iv) to calculate the economic return of Government of Eswatini and Taiwan's Investment on NHTC to the economy.

The study has indicated that the economic benefits of TVET to the graduates include; absorption in the labor market, self-employment opportunities, upgrading of skills with higher institutions of learning and part-time profits for those in fulltime employment.

The study finds that about 47.6% of the graduates are absorbed into formal employment into the various sectors of the economy whilst a quarter (25.5%) of the graduates create their own jobs, however, 39.77% acquired employment relevant to their skills, while 60.23% acquired employment irrelevant to their skills, while 0.4% continued with their studies. Employment is high among men (51.2% than females (48.8%) and both genders are equally self-employed. The unemployment rate among the NHTC graduates is 26.2% which is lower than the official 28.1% unemployment rate in Eswatini. When calculating the economic return of TVET to the economy of Eswatini, the study finds that on average, for every E1 spent on NHTC over a 20-year period, the economy in Eswatini generated E4.66 in direct income earnings from NHTC graduates. This means for every E1 spent on NHTC, the graduates generate E4.66 in personal income within the Swazi economy. NHTC is an economically worthwhile investment, and with more funding to absorb more students, the Centre has a potential to significantly curb the rate of youth unemployment in the country.

The study uncovers that over the 20-year period, the Taiwanese government has been allocating funding worth over E7 million per year, however, in 2015, this funding ended after 41 years of continuous financial support. The withdrawal of the Taiwanese government has left a huge operational gap at NHTC in view of the amount that was allocated which contributed to the timeous procuring of training equipment and materials and recruitment of instructors resulting to effective service delivery. As it is presently, NHTC relies solely on Government annual budget allocation and a sustainable financing model needs to be developed if the center should continue churning out outputs to the economy.

5.2. Recommendations

Consequently, the study recommends the following for NHTC:

- The Centre has a mandate to develop skills for the handicraft sector, therefore it should develop an internal strategy to rekindle interest in the ceramics, wood carving, metalwork and leather courses.
- Formulate a handicraft sector policy to enhance and give direction to development of economic activities and the skills required to serve the handicraft sector.
- Computers, Electrical and Sewing skills are in higher demand, hence, NHTC should consider strengthening these courses in capacity, content and in establishing linkages with industry for graduate apprenticeship and self-employment opportunities.
- Forge partnerships with financial institutions or government instruments such as the Youth Fund to support graduates with financial resources to start their own businesses in order to push the graduate unemployment rate (26.2%) further down.
- NHTC should consider marketing the courses nationally to attract all levels of school leavers as per mandate (primary, secondary and high school) as the study has shown that there is a limited number of primary and secondary school leavers among the trainees.
- Invite private sector and institutions of higher learning to present to trainees on available opportunities for business and upgrading of skills and as well as to instill entrepreneurship and business acumen among trainees.
- Market NHTC internationally to attract development partners to financially support the Centre given that the financial sponsorship of the Republic of China on Taiwan elapsed in 2015, which was contributing double of Government's spending on NHTC.
- The Government of Eswatini should consider increasing funding to NHTC as a means of closing the financial gap created through the elapsing of the 40-year financial support by the Republic of China on Taiwan. Minimally, the GoS should match Taiwan's funding of US\$ 500,000 each year.
- Conduct tracer surveys every 3-5 years to enable accurate impact assessment of the NHTC to the economy.
- Establish links with financial institutions that can provide study loans and other sponsorships for NHTC trainees.

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