

# **EFFICIENCY AND EFFECTIVENESS OF PALESTINIAN VOCATIONAL EDUCATION AND TRAINING**

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## Abstract

Due to the importance of human resource development in Palestine, the issue of matching the supply of and demand for VET graduates has become very crucial. As the gap between supply and demand is widening, both sides VET institutes and employers in the private sector are called upon to narrow the gap between these sectors. It is illogical that only 10% of employees with fourteen years of schooling are employed in the economic sector, excluding health and education. The choice of joining VET Institutes or academic education at the age of 18 has been found to be totally determined by economic and financial factors. Students seek to acquire several skills and competencies in due time. As long as the determination of the income and salary depends on the graduates productivity, he/she will acquire sufficient skills and competences as proxies for his /her productivity. These measures could empower and increase the competitiveness of VET graduates in skilled labor markets. On the other hand, private sector should intensify investments in the potential productive and service sub sectors that could lead to job creation.

## ملخص

أصبحت قضية مطابقة العرض والطلب على خريجي التعليم والتدريب المهني حاسمة جدا نظرا لأهمية تنمية الموارد البشرية في فلسطين. وبتوسع الفجوة بين العرض والطلب، ندعو كل من معاهد التعليم والتدريب المهني وأصحاب العمل في القطاع الخاص إلى تضيق الفجوة بين هذه القطاعات فمن غير المنطقي أن يتم توظيف 10 ٪ فقط من العاملين والحاصلين على أربعة عشر عاما من التعليم في القطاع الاقتصادي ، باستثناء الصحة والتعليم. لقد وجدنا أن العوامل الاقتصادية والمالية هي العوامل المحددة أساسا لخيار الانضمام الى التعليم والتدريب المهني أو معاهد التعليم الأكاديمي في سن ال 18. الطلاب يسعون إلى اكتساب مهارات وكفاءات عدة في الوقت المناسب. وطالما أن تحديد الدخل والراتب يعتمد على إنتاجية الخريجين، فإن اكتساب المهارات والكفاءات سيكون في المستوى الكافي للعمل لزيادة الإنتاجية. ويمكن لهذه التدابير تمكين وزيادة القدرة التنافسية لخريجي التعليم والتدريب المهني في أسواق العمالة الماهرة. ومن ناحية أخرى ، ينبغي على القطاع الخاص أن يكتف من الاستثمارات في القطاعات الفرعية المحتملة الإنتاجية والخدمية التي يمكن أن تؤدي إلى خلق فرص العمل.

## 1. Introduction

In recent years, vocational education and training (VET) has received considerable attention from economists and policy makers in both developed and developing countries. In fact, VET has provided an alternative for students who are generally classified as below the required level of achievement in terms of qualification at age 18, and for high school drop-outs. VET has also offered a different opportunity for university students to develop skills and competencies that are required for their integration into the labor market. In this regard, many governments have reshaped VET institutions in order to make them more efficient and effective [Neuman and Ziderman, 2003].

In industrialized countries and also in many developing countries, the structure of secondary education associates VET with both scientific and art streams. This fundamental change in the educational system has resulted from changes in the division of labor markets segmenting the workforce into unskilled, semiskilled, skilled, technicians and professionals. In fact, as demand for goods and services increases, the utilization of certain levels of labor will also increase, and it is concurrently linked to information and communication technologies [Bishop and Mane, 2004].

The development of VET is usually carried out in collaboration with secondary schools and higher education institutions such as community and technical colleges. The function and performance at these educational levels are evaluated according to their efficiencies and effectiveness. Massive spending on primary education should develop skills and qualifications that are required to reduce unemployment and poverty. Therefore, reforming the secondary school system will provide young people with specific skills for immediate employment. Consequently, distribution of employed persons by years of schooling becomes concentrated between 13 and 20 years of age. In developing countries, 65% of employed laborers have had at least 10 years of schooling.

On the other hand, VET requires intensive investments to be effective and efficient. The German system of vocational education is considered a successful model [Linder, 1998]. In Germany, investment in VET comes from both government and employers. This particular partnership between the private sector and government is characterized as follows:

1. Learning is complemented by theoretical education in vocational schools. Having an apprentice job is a prerequisite for the right to attend the school.
2. Certificates that demonstrate successful apprenticeships are valuable sources of information for future employers.

It is anticipated that employees will be positively affected when they learn by doing, particularly when wage determination depends on their productivity. VET offers the same value added as furthering academic education. In other words, there is an insignificant difference between young students who decide to further academic education and those who opt for vocational and training programs if educational standards at the general schooling stage are sufficiently high. Moenjok and Worswick (2003) found that vocational education provided higher wages for those who preferred VET to furthering academic education. Based on these results, public and private investments should be directed to VET rather than to traditional schools. Such investments would improve access to VET and would eventually raise the performance of production sectors like agriculture, industry and construction. Furthermore, research into this issue is needed, especially when investments on traditional schooling exceed spending and investment in vocational schooling.

## 2. Statement of the Problem

Over the past decade, the number of students enrolled in vocational school as well as technical and community colleges has increased. However, the proportion of students in vocational schools to the total number of students in traditional and vocational schools remained constant at 3%. On the other hand, students registered in community and technical colleges accounted for only 10% of the total number of students enrolled in higher education institutions [Ministry of Higher Education, Statistical Yearbook, 2008].

Based on those annual reports, the following indicators outline the situation of VET in the West Bank and Gaza Strip (WBGs).

1. The importance of VET compared to higher academic education is still limited. The Palestinian society still prefers traditional academic education to VET. A high proportion of the students enrolled in VET are marginal students with low grade point average (GPA) at secondary high school. This indication is coupled with the fact that VET entrants have generally lower qualifications at the age of 18. Therefore, it becomes obvious that success in VET requires sufficient and high educational standards at schooling stage.
2. There is a lack of consistency between VET graduates and market needs due to the following factors:
  - Training programs available to students at vocational schools and technical colleges have been evaluated as ineffective. Thus, graduates are deprived of certain upgraded skills and qualifications that are necessary for their integration into the labor market [Hammash, 2000].
  - Vocational and technical training programs are still limited to certain areas. Leading industries such as plastic, marble and stone still depend on foreign technicians and experts. In addition, VET opportunities for women are still highly restricted. Females with 15 years of schooling and above present only 17% of the total number of students who graduate from VET schools and institutes.
3. As a result, the proportion of technicians and graduates from VET institutes does not exceed 10% of the total labor force employed in various economic sectors. This proportion is very low compared to neighboring markets [El-Jafari, 2004].
4. On the other hand, the mechanism of the labor market is directly affected by wage and price levels in Israel. Wages paid to employees who graduate from universities are controlled by a local civil services law. However, wages offered to technicians, skilled and semi-skilled laborers are based on their level in the Israeli labor market. Therefore, it is not surprising that the Palestinian economy has suffered from low productivity which hampered its competitiveness in the local market as well as in export markets [Makhool and Atyani, 2004].
5. Vocational secondary school enrollment accounts for only 5% of total secondary enrollment. Also, the curriculum of vocational schools is still restricted to three major economic sectors: industry, agriculture and commerce.
6. Currently, women are not enrolled in industrial training programs. Occupations such as plumbing, carpentry, electrical installation, chemical technology mechanics and electronics are still restricted to men.
7. The role of the private sector in VET is minimal, which in turn necessitate an ongoing government role to ensure having an adequate number of VET graduates with the necessary qualifications. The role of the private sector in financing VET can be enhanced by:

- Including assessments of employer and private training capacity in investment analysis.
- Supporting appropriate systems for accreditation and inspection of private training institutions.
- Financing technical assistance programs that build professional training capacity in both public and private enterprises.

The proceeding discussion points to a few shortcomings of VET in Palestine. Identification of the causes and consequences is essential for VET improvements.

### **3. Main Features of VET and the Palestinian Labor Market**

This section presents the main indicators regarding VET graduates in the Palestinian labor market. These indicators, outlined below, are based on the Palestinian Central Bureau of Statistics (PCBS) surveys conducted over the period 1995–2005.

1. The surveys indicate that 76.3% of VET graduates are labor force participants. The rate of labor force participation is 90% for male graduates and 38% for female graduates for the period 2000–2008. However, the participation rate of female graduates from VET community colleges and institutes is approximately 43% in the West Bank, which is 6% higher than that in Gaza Strip.
2. Unemployment rates are highest among VET graduates between 20 and 29 years of age. The rates are 39% and 52% in the WBGS respectively. Male unemployment rates (31%) are lower than female unemployment rates (58%). The distribution of unemployed VET graduates by locality is 45% in camps, 32% in urban centers and rest in rural areas. Also, unemployment rates are highest (31%) for graduates specializing in teaching professions.
3. Around 60% of VET graduates are employed by the private sector, mainly in technical, clerical, and specialized jobs. This situation in the WBGS is relatively similar to that in other Arab countries [Al Heeti and Brock, 1997]. On the other hand, approximately 9% of Palestinian workers employed in Israel hold an associate diploma and are employed mainly in the Israeli construction sector.
4. The average daily wage rate for VET graduates in the West Bank private sectors is \$30. This is only 80% of the average daily wage rate for graduates who hold a bachelor degree. Furthermore, wages received by VET graduates in the Gaza Strip are 20% lower than those received by their counterparts in the West Bank.
5. By the end of 2005, the total number of graduates from VET institutions and community colleges accounted for 38% of the total number of graduates in the WBGS. The PCBS surveys conducted in the first quarter of 2006 indicated that the total number of graduates in the WBGS were 182,000 and 114,000 respectively.
6. While one-third of VET graduates are specialized in commercial and business programs, only 20% are medical, engineering, and computer programs graduates. On the other hand, graduates who work in teaching professions account for only 7% of the total graduates from VET institutions.
7. Most VET graduates in the WBGS are specialized in business and finance (over 60%), followed by engineering and computer professionals (30%). Around 80% of those are females. Females constitute 40% of total VET graduates specializing in business, engineering and computer. Graduates from home economics, nursing and social work, arts and crafts, academics, educational and medical professions comprise only 20%. Female graduates from those specialties account for more than 50%. On the whole, female

graduates from VET institutes and community colleges account for more than 60% of the total graduates from those institutions.

#### **4. Objectives**

This study aims to identify the factors that influence high school graduates' choice between VET and general education. Thus, this study focuses on identifying the major factors that could improve the efficiency and effectiveness of VET in Palestine. In fact, this study aims to evaluate the demand for VET after students have completed high school on the one hand, and labor market demand for graduates from VET institutes on the other hand. To accomplish this objective, the following issues are addressed:

- Mechanisms required to promote the demand for VET at higher education levels.
- The role of the private sector in investing in the infrastructure required to hire graduates from VET institutes.
- Policies that could balance the demand for vocational and academic education after secondary schooling and consequently, the role of VET in providing the economy with needed skills and qualifications to improve labor productivity.
- Recommended policies that would increase employability in various economic sectors for graduates from vocational institutes and community and technical colleges.

The results of this research would be of benefit to the Ministry of Education and Higher Education in formulating policies and strategies. The current size of higher education will be evaluated in terms of the number of universities, community and technical colleges as well as disciplines in VET institutes and the number of enrolled students, admissions and graduates. This will be carried out to determine whether investment in VET and traditional education at school and college levels should be targeted to serve domestic and/or external employment needs. Also, local community colleges, technical colleges, vocational education and universities could make use of the outcomes of this study to rationalize their strategies and policies. In addition, planners at higher education institutes and policy makers in private sectors as well as NGOs and academics are addressed in this study to recognize the new patterns in labor demand. Consequently, VET and higher education institutions may become aware of labor market conditions.

#### **5. Methodology**

An economic model is used to analyze the expected impact of bridging the gap between supply of graduates from VET institutes and the demand of the skilled labor market in the WBGS. Cross sectional data is used to estimate the model. Based on the estimates, factors behind the determination of enrollment in VET institutes and higher academic institutions are discussed and analyzed. Qualitative projections are conducted to restructure the VET system according to local market needs. Consequently, the supply of VET would change, subject to changes in local labor market. In this situation, the output of vocational education is treated as demand driven in relation to the types of needed skills. This approach is expected to be appropriate for critical issues concerning the Palestinian higher education system and labor market.

Cross-sectional data is gathered on VET graduates who are already employed by private sector institutions. Also, other data is gathered based on social and academic variables related to students' enrollment in VET institutes and colleges. On the other hand, data on skills and competencies applied by the private sectors to employ graduates from VET institutes and colleges is collected.

Based on the above analysis, two questionnaires were designed to gather primary data on:

1. Variables related to students' decision to enroll in VET institutes, universities and university colleges.
2. Variables related to decisions that make employers in the private sector opt to employ graduates from vocational schools and colleges.

Questionnaires employed in this study are presented as appendices in this study, in both Arabic and English. Arabic questionnaires were distributed to gather the primary data, and English questionnaires were translated from the Arabic ones.

## 6. Specifications of the Model

In this study, specifications of the equations are based on the domestic labor supply–demand model. In this regard, a high school graduate makes his/her decision to enroll in vocational education or in academic education depending on the salary that he/she expected to receive and other monetary incentives offered to him/her by employers in the private sector. Also, a graduate's decision to enroll in VET or in general education is also expected to be determined by his/her interest to acquire academic qualifications, computer and language skills and training before graduation. Therefore, the duration of the waiting period for a graduate from graduation (in months) until he/she finds a job will be affected by his/her academic qualifications and financial incentives offered by the private sector. Thus, joining VET institutes or higher academic education depends mainly on the academic qualification, skills and abilities that are acquired after graduation for employability [Fallon and Verry, 1988; Ehernberg and Smith, 1994].

From the demand side, an employer in the private sector makes a decision to hire a certain graduate in an applied profession by assessing the graduate's expected productivity. In general, skills and qualifications are considered proxy indicators for measuring the expected productivity of the graduate when he/she becomes an employee. Consequently, the monthly or annual salary paid is based on productivity.

Based on the above discussion, three equations are specified to represent the factors that could enhance the efficiency of the labor market for VET education, through specification of the demand for and supply of the VET graduates in labor markets. [Khan and Ali 1998; Jones, 1993].

The decision made by a high school graduate to join either vocational institutes or general academic education can be presented by the following probit models.

$$Y_i = f(ACDV_i; SOC_i; ECON_i), \quad (1)$$

where  $Y_i$  is a qualitative variable representing the decision of the  $i^{\text{th}}$  student to enroll in vocational education. It takes the value of one for vocational education, and zero otherwise (general education at university college or/and university). After graduation from secondary high school, students can choose between two streams of education, academic or vocational. Students may choose to join academic education at community colleges (two years), university college or university (four years).

$ACDV_i$  is a vector of academic variables expected to have impact on a student's decision to join either vocational or general (academic) education. It includes: GPA at high school, academic diploma, pursuing graduate studies, transfer student, language skills, computer skills, etc. The value of each explanatory variable in equations (1) to (3) ranges between zero and five. If the value equals five, the academic factor has full effect on the student's decision to join VET. In contrast, if the value equals zero, the academic factor has minimal effect on the student's decision to join VET.

$SOC_i$  is a vector of social factors that stand behind the student's decision to join vocational education or academic education. They include parents' satisfaction, parents' or friends' encouragements.

$ECON_i$  represents a set of economic factors that stand behind the student decision to join vocational education or academic education. They include: expected salary after graduation, finding a job after graduation.

A key variable (unobservable) is the expected rate of return or expected wages and salaries to choose either general education or vocational education. In order to consider this, the expected salaries are included in the probit choice equation. Tansel (2002) and Daoud (2005) used a multinomial logit model to determine school choices in Turkey. Their findings indicate that the return on vocational education is higher than in the case of general education when observed characteristics are controlled. In this study, the analysis focuses on the enrolment decision made by a high school graduate to see how he/she perceives the decision made a few years ago after he/she becomes employed after graduation from VET institutes or from higher education institutes. Therefore, unemployed graduates and those who have not chosen schooling at VET or general higher education are excluded.

The following equation is utilized to determine factors behind jobs sought by new graduates from the VET and universities in labor market. It is treated as a supply equation for graduates representing the expected behavior of the graduate who finds an offer of employment in the market, whether it is consistent with his/her specialization and type of education or not.

$$WP_i = f(ACDV_i; SOC; ECON_i), \quad (2)$$

Where:

$WP_{ij}$  =The waiting period (in months) of the  $i$ 'th graduate who seeks the  $j$ 'th job which is consistent with the her/his specialization of education.

$ACDV_i$ ,  $SOC_i$  and  $ECON_i$  are as defined above.

Equation (2) explains how the explanatory variables that are expected to affect the waiting period. The waiting period implies the number of months from graduation until a graduate gets the job.  $ACDV_i$  presents the list of qualifications, skills and competences to identify and quantify any variations in the waiting period (number of months) from graduation until finding employment.

The private sector's demand for VET or higher academic institute graduates depends on the qualifications obtained by each. They include experience, training, language skills and communication skills. On the other hand, academic factors are covered by the following variables: GPA, training, passing interview and employment tests and specialization in applied fields. Social factors include gender, social status and others. Therefore, the decision made by the private sector to employ a graduate from vocational education or academic education can be presented as follows:

$$X_{ij} = f(ACDV_i; SOC_i; Skills, \dots), \quad (3)$$

where

$X_{ij}$  represents the decision made by the  $i^{th}$  sector to employ the  $j^{th}$  graduate, it takes the value of one if the  $i^{th}$  sector employs a graduate from VET, and zero otherwise.

$ACDV_i$ ;  $SOC_i$  are as defined above.

$Skills$  represents a categorical variable which is taken into account by employers in the  $i^{th}$  sector to employ the  $j^{th}$  graduate. It includes computer skills, experience and language skills.

Following estimating procedures applied by Moenjak and Worswick (2003)—and using Macintosh (2006)—models 1, 2 and 3 are estimated using the OLS method (other procedures, such as maximum likelihood and correction for self selection, can be used). The selectivity bias is tested to establish whether or not there is a bias, and if so, whether it is an upward bias (reservation hypothesis) or downward bias (crowding hypothesis) (Nicaise, 2001). Limited dependent variable models and estimates of multiple regression coefficients are analyzed and the hypothesis as to which factors are more relevant than others in selecting the estimation procedure is tested.

## **7. Sample Characteristics**

The data used is taken from two questionnaires. The first questionnaire was distributed among employers in the private sector. The second was distributed among graduates from VET institutes (14 years of education) and university colleges and universities. The business sector's sample distribution (presented in Table 1) largely confirms and complies with expectations. The sample (N=490) indicates a response rate of 98%. The field workers who gathered the data from the business sector are highly trained and qualified. The questionnaires were handed to businesspeople. After 48 hours, field workers revisited businesspeople to collect the questionnaires. Although gathering data was relatively expensive with respect to the average cost rate, the approach followed by the field workers to get back the questionnaires was very rewarding.

Table 1 indicates that 95% of the employers in the Palestinian private sector are males. Secondary data published by PCBS reveals that educated women's participation and employment in the private sector is approximately less than 10% [PCBS, 2006]. Also, 65% of the employers hold at least a bachelor's degree. This indicator could explain the responsiveness rate of sample members to filling out the questionnaire. In addition, most of the employers are young; around 60% of them are between 25 and 45 years. In addition, these indicators reveal that private sector is to be engaged in higher education. Therefore, it is expected that the demand for VET graduates will be increased as far as the employers in the private sector hold higher qualifications.

On the other hand, construction, industry, health and education are the major private sectors to hire graduates from higher academic and VET institutions. They account for 80% of the sample respondents. In contrast, agriculture, banking, telecommunication and IT show more interests in hiring graduates from local academic and VET institutes. Only 14% of the sample respondents came from those sectors. However, these indicators need further investigation.

The second survey was collected from a sample of employed young graduates from VET institutes and university colleges and universities over the past eight years. In this study, we focused on employed graduates from Palestinian higher academic education and VET institutions since the year 2000. Table 3 shows that Palestinian graduates from VET and academic institutions are employed in three major sectors: health, banking and finance and trade services. More than 50 % of Palestinian graduates are employed in these sectors. However, about 20% of Palestinian graduates are employed in production sectors: agriculture, IT and industry.

Despite the severe economic situation in the West Bank, the private sector continues to be the main employer, absorbing more than 50% of total graduates. Additionally, 72% of VET and academic institutes' graduates receive an income of less than \$10,000 annually. Furthermore, around 25% of VET graduates on average usually find a job after graduation.

## **8. Empirical Results**

In this section, the empirical results of the estimated equations are presented and discussed. The estimated equation of the individual's educational decision is discussed first. Then, the

waiting period equation is analyzed. Finally, the estimated demand equations for graduates from VET institutes and universities and university colleges by the private sector are analyzed. Based on the estimated equations, policy implications are presented to improve the efficiency and effectiveness between the demand for higher education by high school graduates and market needs—mainly those of the private sector.

### ***8.1 Estimation procedures***

Given that primary data utilized to estimate the model, the first consideration for the estimation procedure is the statistical specification of the equations and the selection of the appropriate estimation technique. The specified model is a single equation. Probit maximum likelihood estimation procedures are used to estimate equations 1 and 3. On the other hand, equation 2 is estimated using OLS. The use of these estimation procedures for each independent equation provides consistent and unbiased parameter estimates [Griffiths, Hill, and Judge, 1993].

Significant and insignificant coefficients of the estimated equations are presented in Tables 5 to 7. Coefficient estimates, standard errors and  $R^2$  are included to show the degree of significance of each estimated equation. As most of the equations' explanatory and endogenous variables are qualitative, the coefficient estimates measure the degree or level of impact of each explanatory variable with respect to the endogenous variable on the one hand and with respect to other explanatory variables in each estimated equation on the other.

### ***8.2 The estimates of the individual's education decision***

Table 5 indicates that the GPA, possessing computer and language skills (English), the willingness to major in a specific field and university accreditation are the major factors behind enrollments in VET institutes. Also, receiving a high salary, market needs and high rates of unemployment among graduates in other fields of specializations are the most important factors behind the persistent decline in joining and attending VET institutes. The coefficient estimates appear with the correct signs and are greater than the standard error of estimates.

However, social and political factors appear to be very crucial in determining the allocation of high school graduates between VET institutes and academic education. Parental educational attainment and encouragements are the major socioeconomic variables behind choosing to join academic education. However, uncompetitive factors such as favoritism and political affiliation have a more significant impact on enrollment in academic education than enrollment in VET. It is obvious that a high GPA reduces the probability of joining VET institutes. Most of the coefficient estimates appear to have negative signs. On the other hand, computer skills and training are additional variables that reduce the waiting period to employment by the private sector.

### ***8.3 The estimated equation of the waiting period***

Table 6 indicates that expected salary, financial incentives, qualifications and favoritism are the major factors behind minimizing the waiting period for new graduates employed in occupations that are consistent with their fields of specialization. On the other hand, computer skills and training are additional variables behind reducing the waiting period for graduates employed in applied and practical professions.

The waiting period is associated with the following variables: expected salary, qualifications, language skills, training and uncompetitive factors such as favoritism and political affiliation.

In general, the waiting period equation for VET graduates is more specified than that of individual's decision to enroll in VET institutes. In fact, competitive factors such as computer and language skills, training, experience and economic factors reveal that the capacity of the

job market in absorbing new graduates is very limited. In contrast, supply of graduates from VET is determined by a few factors. Consequently, while 80% of university graduates are absorbed by the private sector, only 50% of VET graduates are employed by the private sector.

In Table 6, computer skills, experience and qualifications are the most significant factors behind minimizing the waiting period for graduates employed in occupations relevant to their fields of specialization. Mainly, graduates who seek jobs relevant to their fields of study acquire additional skills and abilities compared to their counterparts who are employed in occupations irrelevant to their fields of study. Therefore, it is not surprising to find that many employed and unemployed graduates join training programs to acquire computer and language skills. On the other hand, uncompetitive factors such as favoritism, political affiliation and personal contacts play a significant role in employing new graduates in jobs that are irrelevant to their fields of study.

VET graduates who seek employment in occupations inconsistent with the fields of specialization depend on a few factors to reduce the waiting period compared to those factors considered by university graduates. For instance, VET graduates depend on training and financial incentives to be employed in occupations that are irrelevant to their fields of study. Graduates seek jobs inconsistent with their fields of study in the private sector to earn higher wages and financial incentives.

#### ***8.4 The estimates of demand equation***

While field of specialization is the most important factor that is being considered in the employment of university graduates, GPA, experience, interviews are next in importance, (see Table 7). In addition, accreditation, experience in computer and language skills and training are highly considered by employers in the Palestinian private sector when they hire university graduates. In contrast, those skills are taken into account when employers make decisions to hire new VET graduates.

The estimated results signify that employment opportunities are highly restricted to private sector when it employs university graduates compared to those from VET institutes. In fact, employers in private sector consider skills and competencies when they assess the quality of new graduates before they are hired. In addition, those criteria are applied by employers to differentiate between the qualities of graduates from local academic institutes and those who graduate from international institutions.

#### ***8.5 Policy implications***

Empirical results indicate that VET is underestimated compared to academic education. In the West Bank, VET institutes are not considered successful in improving labor market performance. Many VET graduates are unemployed because they do not find employment in related jobs. Therefore, it is not surprising to find a significant difference in a high school graduate's choice between academic education and VET. Most of the academic, economic, and social factors appear to drive high school graduates to choose academic education over VET and it is quite obvious that academic education is high school graduates' favored choice.

In general, wages paid to VET graduates are less than those paid to university and academic graduates. Consequently, it is not surprising to find a persistent and continuous demand for academic education but not for VET. It seems that employment in the private sector depends mainly on skills and competences acquired by graduates of academic higher education. In this regard, one could conclude that the qualifications of VET institutes graduates are lower than those of higher academic institutes which may in turn explain why high unemployment rates are observed among VET graduates. In fact, high school graduates who join VET are generally from the lower end of the achievements scale in terms of GPA. In general, the

private sector tends to favor higher academic education graduates to VET graduates in terms of return (income or salary) and employment.

On the other hand, it becomes obvious that other social and academic factors play a role as moderating variables. Since most of the respondents have indicated that economic and financial factors were main drivers for their enrollment at higher academic institutes and universities, other social and academic factors were moderating variables. This means that enrollment in higher education has been viewed as the last resort to improve the standard of living of the Palestinian people. In order to balance enrollment between academic institutes (as universities) and VET institutes, a number of issues need to be considered by the private sector and the Palestinian institutions of higher education. Both need to work together to incentivize students to join vocational institutions in order to redress the existing imbalance. Following are some guidelines:

1. Administrations of higher education institutions should tap into the expertise of private sector leaders to develop academic courses and programs for VET institutes. The feedback from employed graduates can identify the skills and abilities that required by the local job market.
2. Absorbing the growing numbers of graduates depends not only on the subjects studied or possession of skills and academic qualifications, but also on the ability of the private sectors to create jobs. This necessitates intensive private investment at a rate parallel to the growth in the work force, particularly in fields that require certain types and qualities of graduates. On the other hand, VET institutes are requested to introduce measures to determine subjects of study according to economic factors such as the cost of education, expected income after graduation and available vacancies. Students would then enroll in fields that would guarantee them acceptable, well-paid job, while specializations that are not required by society would eventually disappear. However, social factors are still the major determinant for students' enrollment in a certain field of study, which is considered a product for consumption.
3. VET should provide high quality graduates of different levels fields to meet the needs of the economy. The relevant bodies must look for incentives to encourage students to join higher education institutions in order to redress the existing imbalance in the distribution of students joining higher academic institutions. In addition, the economic sectors should increase the absorptive capacity in employing VET graduated to increase total productivity. Yet, around 10% of employees in the private sector hold academic degrees for 14 years of schooling and above. Therefore, equally important, professional criteria must be highly respected in private sector employment; it should be on the basis of job requirements and specifications.
4. University graduates should not be employed in jobs that require VET qualifications. Employers in the private sectors consider several criteria to hire graduate from VET and or/universities. Many graduates who acquire computer and language skills, and join several training programs work in fields unrelated to their own specialization yet they receive higher salaries than those without university qualifications. Therefore, any economic development must spring from an enhanced quality of higher education, which will be reflected in an increased economic productivity and greater graduate absorption into the labor market. Moreover, intensification of investments in the potential productive and service sub sectors that could lead to job creation.
5. Success in VET could be improved if educational standards at VET institutes are sufficiently high. In fact, students who enroll at VET institutes are academically less successful than those students who join higher academic institutes (university). Therefore, qualifications of the students who join VET institutes could be achieved through further education and training since they are essential in the search for employment. In addition,

enhancing the capability of students enrolled at VET institutes would give them the opportunity to pursue academic education at universities in the future.

Due to the importance of human resource development in Palestine, the issue of matching the supply of and demand for VET graduates becomes crucial. As the gap between supply and demand for VET graduates widens, both sides—VET institutes and private sector employers—are called upon to narrow the gap. It is illogical that only 10% of employees with fourteen years of schooling are employed in the economic sector, excluding health and education. Therefore, private sector should increase its demand for VET graduates to improve the productivity of the economy.

## **9. Conclusion**

This paper provides evidence on the role of vocational skills and competences in the performance and functioning of Palestine's skilled labor market. Due to the importance of human resource development in Palestine, the issue of matching the supply of and demand for VET graduates becomes crucial. As the gap between supply and demand for VET graduates widens, both sides—VET institutes and private sector employers—are called upon to narrow the gap.

While enrollment in academic institutes is subject to certain academic, social, economic and financial factors, the expected incomes for graduates of academic institutes are much higher than those for graduates of VET institutes. Consequently, the waiting period for VET graduates is much longer than the waiting period of higher academic institutes graduates.

The choice of joining VET Institutes or academic education at the age of 18 is found to be mostly determined by economic and financial factors. Throughout the study period, students of both academic institutes and VET institutes seek to acquire several skills and competencies in due time. As long as the determination of the income and salary depends on the graduate's productivity, he/she will acquire sufficient skills and competences as proxies for his/her productivity.

These results call on several parties such as VET institutes to upgrade their curricula to increase the competitiveness of VET graduates in skilled labor markets. On the other hand, the private sector is called upon to increase investments in production and services sub-sectors, which may in turn lead to job creation.

Success in VET could be improved if educational standards at VET institutes are sufficiently high. Currently, students enrolling in VET institutes are less academically ranked than those students who join higher academic institutes. Therefore, qualifications of the students who join VET institutes need to be raised through further education and training essential, to make VET graduates more employable. In addition, enhancing the capability of VET students would give them the opportunity to pursue higher academic education.

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**Table 1: Sample Characteristics of Business People in Palestinian Private Sector**

No.	Variables	Categories	#	%
1	Gender	Male	478	96.7
		Female	12	3.3
2	Age	25-35	70	14.3
		45-36	218	44.5
		Greater than 45	148	30.2
3	Qualifications	Community College or less	134	27.5
		B.sc	319	65.1
		M.A, M.S	34	6.9
		PhD	2	0.5

**Table 2: Distribution of Business Sectors who Employ Graduates From VET Institutes and Universities**

Sectors	%	#
Agriculture and Food Processing	3.3	16
Industry	30	147
Construction	10	49
Education	22	108
Health	18	88
Banking	7	34
Telecom	2	10
IT	2	10
Other Services	5.7	28

**Table 3: Distribution of Employed Graduates from VET Institute and Universities**

Economic sector	%	#
Manufacturing	4.9	19
Agriculture	6	24
Telecommunication and information	8.5	34
Real estates	8	32
Education	8.7	35
Health	21.4	84
Wholesale and retail services	5.5	21
Banking and finance	15	59
Legal service	5	20
Trade services	17	67
		395

**Table 4: Distribution of Employed Graduates from VET Institutes and Universities with Respect to Income**

Income in U.S \$	%	#
Less than 400	26.3	104
600-700	24.1	95
700-800	22.1	78
900-1000	9.5	37
1000-1100	6	24
1200-1400	5	20
1400-1600	4	16
More than 1600	3	12
		<b>395</b>

**Table 5: PROBIT Maximum Likelihood Estimation of the Decision to Enroll at VET Institutes or at Higher Academic Institution**

Variable	Estimated Coefficient	Standard Error of Estimate	Significant at
Constant	-7.4	1.7	*
Grade point average (GPA) at high school	-0.06	0.019	*
Obtaining computer skills	-0.24	0.14	***
Obtaining language skills	-0.02	0.013	***
Accreditation of the VET institutes	0.82	0.09	*
Obtaining high salary	-0.23	0.14	***
Unemployment rate	-0.02	0.013	**
Parental education	-0.18	0.13	***
Parental encouragement	-0.036	0.021	**
Obtaining employability	-0.008	0.003	**
Political affiliation	-0.17	0.104	**
Vacancies ( market needs)	-0.32	0.13	*
High school stream	-0.73	0.15	*
Insufficient qualification to majoring in other fields	0.57	0.13	*
This specialization is highly demanded by market	-0.26	0.13	**
Self- development	-0.20	0.109	**
Cost of schooling	0.21	0.14	***
Enrolling in sophisticated field	-0.24	0.14	***
Duration of waiting period	-0.5	0.35	**
Enrollments in graduate studies	-0.06	0.024	**
R <sup>2</sup> = 0.47, * significant at 1%			
** significant at 5%			
*** significant at 10%			

**Table 6: The Estimated Maximum Likelihood of the Waiting Period Equation**

<b>Variable</b>	<b>Estimated Coefficient</b>	<b>Standard Error of Estimate</b>	<b>Significant at</b>
Constant	5.25	3.5	**
Grade point average (GPA)	-0.39	0.026	***
Consistency between field of specialization and market needs	-0.22	0.1	**
The Accreditation of the VET	-0.065	0.05	***
Acquiring training before graduation	-0.013	0.06	
Acquiring training after graduation	-0.077	0.05	***
Passing ability tests	-0.10	0.07	**
Passing verbal test	-0.33	0.18	***
Acquiring computer skills	-0.10	0.07	***
Acquiring English skills	-0.05	0.025	**
Personal contacts	-0.052	0.03	***
Political favoritism	-0.013	0.015	
VET support	-0.099	0.11	***
Specialized in applied profession	-0.09	0.6	**
Communication skills	-0.104	0.08	***
Recommended by relatives	-0.026	0.029	

R<sup>2</sup>= 0.47, \* significant at 1%  
\*\* significant at 5%  
\*\*\* significant at 10%

**Table 7: PROBIT Maximum Likelihood Estimation of the Decision to Employ VET and Higher Academic Education Graduates**

Variable	Estimated Coefficient	Standard Error of Estimate	Significant at
Constant	13.18	4.25	*
Grade point average (GPA)	-0.029	0.039	**
Experience	-0.58	0.23	*
Attending trainings before graduation	-0.34	0.25	***
Attending trainings after graduation	-0.02	0.0019	**
Acquiring computer skills	-0.07	0.029	**
Acquiring English skills	0.19	0.02	*
Communication skills with employees	-0.07	0.021	*
Contacting skills with public	-0.68	0.25	*
Passing employment test	-0.31	0.18	**
Passing interview test	-0.61	0.29	*
Family, relative support	-0.01	0.08	
Political favoritism	-0.033	0.23	
Recommended by relative	-0.43	0.27	**
Place of work near place of residential			
The ID of employee (Jerusalem)			
Specialized in applied field			
Accreditation of the VET institute	0.04	0.27	
Gender (male)	-0.35	0.19	**
Social status	-0.38	0.26	***
Age	-0.38	0.24	***
Located area (city/ village)	-0.08	0.09	
Academic qualification of the employer	-0.26	0.23	***
The sub-sector of employment	0.04	0.014	*
Consistency between vacancies with graduate specialization	-0.02	0.003	**
Accreditation of higher of the academic institute	-0.37	0.16	**

R<sup>2</sup>= 0.47, \* significant at 1%  
\*\* significant at 5%  
\*\*\* significant at 10%

## Appendices

### **Questionnaire I On: Efficiency and Effectiveness of Palestinian Vocational Education and Training January- April 2009**

#### **Dear Participant**

The questionnaire is being distributed to identify and assess the factors behind enrolment in Vocational and Technical Institutes or /and General Higher Education. Your responses to the questionnaire are confidential they will be used only for conducting the research to meet the objectives.

You are kindly requested to complete the questionnaire at your earliest convenience. Thank you very much for your collaboration

#### **Please Highlight or Tick Answers That Are Applicable**

#### **Section I: General Information**

Q1. Sex:  male  Female

Q2. Age:  20-30,  31-35,  36-40,

Q3. Location of Residency:  City,  Village,  Camp

Q4. Monthly Salary:  Less than 2000NIS,  2001-3000,  
 3001-4000,  greater than 4001

Q5. Level of Education:  Intermediate Diploma,  B.sc  M.A.

Q6. Waiting Period:

Q7. Type of High School:  Arts,  Scientific,  Commerce.

**Section II:**

**Show the Importance of the Following Factors behind your Decision to Enroll in Vocational and Training Institutes or in General Higher Education:**

#	Item	Very Important	important	Neutral	Less important	Unimportant
1	Grade point average (GPA) at high school					
2	Obtaining computer skills					
3	Obtaining language skills					
4	Accreditation of the VET institutes					
5	Obtaining high salary					
6	Unemployment rate					
7	Parental education					
8	Parental encouragement					
9	Obtaining employability					
10	Political affiliation					
11	Vacancies ( market needs)					
12	High school stream					
13	Insufficient qualification to majoring in other fields					
14	This specialization is highly demanded by market					
15	Self- development					
16	Cost of schooling					
17	Enrolling in sophisticated field					
18	Duration of waiting period					
19	Enrollments in graduate studies					

**Section III:**

**Determine the Degree of Importance of the Following Factors behind Reducing the Length of Waiting Period**

#		<b>Highly Important</b>	<b>Important</b>	<b>Neutral</b>	<b>Less Important</b>	<b>Not Important</b>
1	Grade point average (GPA)					
2	Consistency between field of specialization and market needs					
3	The accreditation of the vet					
4	Acquiring training before graduation					
5	Acquiring training after graduation					
6	Passing ability tests					
7	Passing verbal test					
8	Acquiring computer skills					
9	Acquiring English skills					
10	Personal contacts					
11	Political favoritism					
12	VET support					
13	Specialized in applied profession					
14	Communication skills					
15	Recommended by relatives					

## **Questionnaire II On: Efficiency and Effectiveness of Palestinian Vocational Education and Training January-February 2009**

### **Dear Participant**

The questionnaire is being distributed to identify and assess the factors behind the employer decision to hire graduates from Vocational and Technical Education or from General Higher Education. 1. Your responses to the questionnaire are confidential they will be used only for conducting the research to meet the objectives.

You are kindly requested to complete the questionnaire at your earliest convenience. Thank you very much for your collaboration

### **Please Highlight or Tick Answers That Are Applicable**

#### **Section I: General Information**

Q1. Age:  20-29,     30-40,     41-50,     Above

Q2. Sex:  Male,     Female

Q3. Marital Status:  Single,     Married

Q4. Involved in the economic activities:

Manufacturing,     Agriculture and Food Processing     Trade Services

Construction,     Health,     Education

Q5. Number of year experience:

Q6. Number of employees:

Q7. Number of employees specialized in vocational and technical professions:

Q8. specialization in production:

Final products.  intermediate and raw material,     both.

Q9. Establishment date:

**Section II: Show the Degree of Significance of the Following Criteria when your Institution Applied them to Hire VET Graduates.**

#	Incentives	Very Unimportant	Unimportant	Less important	Important	Very important
1	Grade point average (GPA)					
2	Experience					
3	Attending trainings before graduation					
4	Attending trainings after graduation					
5	Acquiring computer skills					
6	Acquiring English skills					
7	Communication skills with employees					
8	Contacting skills with public					
9	Passing employment test					
10	Passing interview test					
11	Family, relative support					
12	Political favoritism					
13	Recommended by relative					
14	Place of work near place of residential					
15	The ID of employee (Jerusalem)					
16	Specialized in applied field					
17	Accreditation of the VET institute					
18	Gender (male)					
19	Social status					
20	Age					
21	Located area (city/ village)					
22	Academic qualification of the employer					
23	The sub-sector of employment					
24	Consistency between vacancies with graduate specialization					
25	Accreditation of higher of the academic institute					