Determinants and Impact of Training: The Case of SMEs in Jordan

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Abstract

While the literturte on SMEs performace foucused on the enabling external environement, little research focused on internal factors, mainly training. Moreover, most studies ignored enterprises that don't train their employees. This study addresses this issue and contributes to knowledge in two ways. First, it conceptualises training as a three stage process: in stage one, the manager decides whether to train employees or not. In stage two, mangers who decide to train their employees determine their demand for training measured by training expenditures. In stage three, training impact can be assessed. Secondly, the study identifies the detreminants of training and examines its impact on SMEs performance. The study found that manager's charatcteristics, enterprise's characteristics and other factors affect both the manager's decision in stage one and training expenditures. More importantly, the study found that training has a positive impact on SMEs' performance as measured by profits, revenues and employment growth.

Keywords: SMEs performance, Jordan, Heckit method, Training, Binary variables, Training expenditures

1. Introduction

Successful Small and Medium Enterprises (SMEs) play a unique role in social and economic development in both developed and developing countries. They are considered as a driving engine of economic growth, in addition to their role in the fight against poverty and unemployment (Holcombe, 1995; Khandker, 1998; Otero and Rhyne, 1994; Remenyi, 1991). Sustainability of such role requires sustainable success of SMEs. Constituents of SMEs' success vary among countries and sectors and can be classified into two groups: external and internal factors. The external factors include supporting economic, social and political environment, availability of funds and legislations and availability of active local and international institutions. The internal factors, on the other hand, depend mainly on training. They include entrepreneurship, employee skills, in addition to management (Magableh and AL-Mahrouq, 2006). However, in addition to training, other factors such as relevant education and experiences are needed to cope with work and environment changes (Bryan, 2006). Traditionally, training was not viewed as an activity that could help SMEs create "value" and successfully deal with competitive and environmental challenges. However, this view has changed. Enterprises that use innovative training practices are more likely to report better financial performance than their competitors who lack such training (Noe, 1998). Training also helps SMEs cope with the latest accounting systems, information technology, management concepts and production techniques (Jones, 2004). In this context, better estimation and understanding of the impact of training on SMEs performance is demanding and costly. However, numerous researchers have investigated the impact of training on SMEs performance (i.e., Bryan, 2006;

Hashim and Ahmad, 2006; Jones, 2004; Cosh *et. al*., 2004; Barry and Milner, 2002; Huang, 2001; Smith and Whittaker, 1999; Betcherman *et. al*., 1997; Marshall *et. al*., 1995; Jennings and Banfield 1993; and Collier *et. al*., 2003). These researchers found that training facilitates SMEs expansion and enhances profitability, productivity and competitive advantage. Others have investigated the problems affecting SMEs' involvement in training markets (i.e., Westhead, 1998; Kitching and Blackburn, 1999; Hunt and Hogan, 2005). They found that lack of time, high cost of training, low employee motivation, underestimation of training outcomes, part-time workers and high turnover rate are among the major problems. Despite the huge amount of literature that have analyzed the relationship between training and SMEs performance, there is a dearth of studies examining training in general and training in SMEs specifically in Jordan. For example, while Al-Wadi (2005), Mryan (1997), Magableh (2004) and Al-Mahrouq and AL-Jaber (2003) found that the lack of skills, low productivity, high turnover rate and lack of employees training are among the main problems facing SMEs development and slow down SMEs growth; the determinants and impact of training on SMEs performance have not been studied thoroughly. More importantly, studies that examined the impact of training on SMEs performance have a major limitation: they considered training to be a static one step process, while in reality training is a dynamic process that can be better modeled and estimated. Therefore, the impact of training can be measured for SMEs that have been involved in a training market, but not for those who lack access. In this view, training is modeled as a three stages process. In the first stage, the manager decides whether to train employees or not. Mangers who decide to train their employees enter the second stage in which they must determine their demand for training measured by training expenditures. The third stage is the stage in which training impact can be assessed. Importantly, this study doesn't ignore those who decided not to train their employees. Therefore, factors affecting their decision are examined. In this context, many questions arise. For example, what are the factors affecting SMEs' involvement in training markets? What are the factors that make SMEs less likely to train? For SMEs that decided to train, what are the factors that affect their demand for training? How does training expenditures affect SMEs performance?

There have not been studies that answered the preceding questions collectively. This is particularly true in Jordan. Most studies surveyed cover only one aspect of SMEs' training and performance and therefore answered one or two questions. For example, Jones (2005) examined factors affecting Australian manufacturing SMEs demand for training. He found that organizational change and the introduction of business improvement programs provide a reasonable explanation of the increased training in SMEs following each of the growth development pathways, and, over time. Reid and Harris (2002) studied SMEs spending on training in Northern Ireland. They argued that a range of human resource management functions, as well as workforce characteristics, the external environment, size and the impact of changes in ownership status are important determinants of training expenditure. They found that whether the enterprise is family owned and/or managed is a major factor in determining training budgets in SMEs. Moreover, they found that workforce characteristics other than shift working, ownership characteristics and external factors, and even to some extent size, were much less important than expected. Karmel and Cully (2009) analyzed the determinants of individual and employer demand for training in Australia. They pointed out that demand for training by individuals depends on the premium attached to skills, as well as the costs of the training. They also found that the demand for training by employers is driven by the need to acquire skilled labor and by business needs in most other cases. Finally, they found that the demand for training by employers is variable across industries and tends to be much higher for large enterprises than for small enterprises. Jin and Tsang (2001) estimated the determinants of on-the-job training and adult education, and their impact on technical proficiency. They found that enterprise decision on providing training to workers and individual decision on attending adult education influenced each other.

In spite of the diversity and relative abundance of studies conducted, little efforts have been devoted to fully analyze the determinants of training process before assessing its impact. This paper fills a gap in the filed of SMEs and training markets in Jordan since it conceptualizes training as a three stage process and then assesses its impact on SMEs performance. This paper aims to investigate the determinants of SMEs training decisions. Firstly, it examines the determinants of SMEs' involvement in employees training markets. Then, it estimates the determinants of their effective demand for training as measured by training expenditures and examines the impact of these expenditures on SMEs performance. Finally, the paper investigates the factors that affect SMEs decision not to enter employees training markets. The paper consists of five sections: section I presented the aims and rationale of the study. Section II presents the model framework of the training process. Section III discusses the survey. Sections IV and V present the estimation methods and estimation results respectively. Finally, Section V contains conclusions and recommendations.

2. Model Framework

An SME manager enters a training market as a demander, when he/she has a demand for employees training. A manager's involvement in a training market goes through three sequential stages. At the first stage, a manager has to

decide whether to enter an employees training market (whether to spend on employees training) or not. If the manager has a lack of effective demand for employees training, the training process in relation to this manager doesn't begin. Lack of effective demand can be due to lack of ability or/and willingness factors. But, if the manager decides to spend on employees training in the first stage, he/she has to decide on the amount of training expenditures in stage two. At stage three, in order to assess the rationality and effectiveness of his/her decision, the manager measures the impact of training expenditures on enterprise's performance. The following three equations represent the previous three stages.

Stage One: a manager decides whether to enter an employees training market and spend on employees training or not

Equation 1 relates the determinants to the probability of a manager spending on employees training:

$$\text{Prob (TRAIN)} = F(M, E, O) \quad (1)$$

where:

TRAIN : dummy (1 if the manager decides to spend on employees training, 0 otherwise).

M : vector of manager's characteristics that affect the decision whether to spend on employees training or not;

E : vector of enterprise characteristics that affect the manager's decision;

O : vector of other factors that affect the manager's decision

Stage Two: managers who decide to enter employees training markets and spend on employees training are required to determine their training expenditures:

Equation 2 is training demand equation of those who have decided to enter an employees training market and to spend on employees training:

$$TEXP = F(M, E, A, O) \quad (2)$$

Where:

TEXP : expenditures on employees training

M : vector of manager's characteristics that affect his/her training expenditures

E : vector of enterprise characteristics that affect training expenditures

A : vector of ability variables that affect training expenditures

O : vector of other factors that affect training expenditures

Stage Three: the manager measures the impact of training expenditures on enterprise performance

Equations (3, 4, 5) measure the impact of training expenditures on SMEs performance:

$$\text{Profits} = F(TTEXP, O) \quad (3)$$

$$\text{Revenues} = F(TTEXP, O) \quad (4)$$

$$\text{Employees} = F(TTEXP, O) \quad (5)$$

Where

Profits : enterprise annual total profits

Revenues : enterprise annual total revenues

Employees : number of workers

TTEXP : total of training expenditures

O : vector of other variables that affect the enterprise performance

The above equations are to be estimated using survey data collected at the regional level in Jordan.

3. The Survey

In 2009, a sample of 500 SMEs was surveyed at regional level using a questionnaire. The questionnaire consists of three sections. The first section covers the characteristics of the manager, while the second covers the enterprise characteristics. The last section focuses on SMEs training activities and their demand for training. The majority of the questionnaire items were close-ended questions. Table 1 shows, that the total number of questionnaires received

by the researchers were 418 (83.6%) out of which 320 (64%) are usable for analysis. The highest response rate was in the northern region (92%) and in the service sector (86.5%).

Insert Table 1 here

3.1 Respondents' (managers') socio-economic characteristics

The gender distribution of managers shows that 69.4% are males. The sex ratio of the sample is 2.26, which is higher than the countrywide ratio of 1.06. This reflects the fact that males are more involved in SMEs management. The age distribution of the managers shows that their ages ranged between 22 and 68 years with an average of 36.6 years. Particularly, 26.6% are less than 30 years old and 45.6% and 16.2% are among the (31-40) and (41-50) age groups. Only 1.2% of the managers are above 60 years. Among all managers, 60.3% hold a bachelor degree and 9.1% hold post graduate degrees, which may reflect the existence of managerial knowledge. About 62.5% of the managers are the owners of the businesses. Manager's years of experience ranged between 1 to 10 years with an average of 5.6 years. About 52.8% work in the same fields of study.

3.2 Enterprise's characteristics

About 80.3% of the surveyed enterprises are small, out of which 36.6% are industrial enterprises and 63.4% are services enterprises. About 63.1% are located in the central region, while 27.8% and 9.1% are located in the northern and southern regions respectively. With regards to life stage, 76.9% are in the operation stage, while 20.3% are in evaluation and expansion stage. Table 2 shows the percentage distribution of the SMEs according to their initial capital and average annual profits. It is worthy to mention that 73.5% have used external sources of fund (loans) during the start-up stage, while 26.5 used their own savings.

Insert Table 2 here

3.3 Demand for employees training and training expenditure

The third section of the questionnaire analyses the training activities of the surveyed SMEs. The results show that 54.7% and 56.9% of the SMEs' managers and owners have received one or more type of training respectively. On the other hand, 71.3% of the managers have entered a training market as a demander to train their employees, while 28.7% of the SMEs have not entered employees training markets in the last four years. Training expenditures in 2008 ranged between JD150 to JD15000, with an average of JD1577. The ratio of training expenditures to total operational cost has ranged from 1% to 34%, with an average of 5.5%. Total expenditures in the last four years ranged from 200 to 42000, with an average of JD3887. More than 82.5% spent less than the average. Among those SMEs who have entered employees training markets, 66.7% received vocational training, 82% technical training, and 56.6% administrative training. Table 3 shows in descending order the problems facing training activities in the SMEs sector, whereas Table 4 shows the impact of training on SMEs performance from the managers' perspectives in a descending order.

Insert Table 3 here

Insert Table 4 here

Finally, those who have not been involved in employees training market were asked to report the reasons for their decision. Table 5 shows the stated reasons and their mean values in a descending order. It shows that high cost of training, using inside training instead of external training and the absence of government support are among the main prohibitions to entering training markets. It is worth noting that the aforementioned factors related the ability to train rather than the willingness which may require further investigation in the future.

Insert Table 5 here

4. The Estimation Methods

Different estimation methods are used to estimate equations 1 to 5. The dependent variable in equation 1 is a binary variable that takes zero-one values, while those in equations 2 to 5 are quantitative variables. Accordingly, different estimation methods are used.

4.1 Binary Dependent Variables: PROBIT Models

It is not recommended to use the least squares estimation methods to estimate choice models for variety of reasons (Dutta and Magableh, 2006). The probability that an event occurs is non-linear and hence can be estimated by an estimation method called PROBIT. The PROBIT specifications are designed to analyze the qualitative data reflecting a choice between two alternatives. It provides a way of quantifying the relationship between the individual characteristics in addition to other explanatory variables and the probability of choosing an alternative. Estimating the PROBIT model is performed by maximizing the likelihood function with respect to all coefficients. The

maximization requires an iterative method, but in most cases the algorithm will operate smoothly, because the PROBIT model likelihood function is very well behaved (Hill *et. al*., 2001).

4.2 Sample selection bias: Heckit method

In equation 2, the value of the dependent variable is observed only for SMEs whose managers decided to train employees or spend on employees training in stage one, while it is not observed for those SMEs whose managers decided not to enter any employees training markets. Moreover, in equations 3, 4 and 5, the value of one of the independent variables (training expenditures) is observed only for SMEs whose managers have decided to train employees or spend on employees training in stage one, while it is not observed for those whose managers decided not to enter any training markets. Accordingly, for estimation purposes, SMEs whose managers decided not to train employees must be ignored, then the TOBIT method (Tobin,1958; Goldberger,1964; Maddala, 1977; Greene, 2000) is used to estimate equation 2 and the OLS method to estimate equations 3,4 and 5. However, the sample of SMEs whose managers have decided to train employees is not random and the observed data are selected by a systematic process, this approach is not recommended and the results are biased. In order to overcome such a problem, Heckman (1979) suggested an alternative estimation method, which has been known as *Heckit* method. According to this method, in order to estimate equations 2 to 5, two steps estimation is needed. In step 1, the PROBIT model of the decision equation or selection equation (equation 1) is estimated by maximum likelihood estimation method. For each observation in the selected sample, the value of the Inverse Mill's Ratio (IMR) is calculated and saved. In step 2, the IMR is added to the explanatory variables in equations 2 to 5. The IMR is obtained from the first step PROBIT estimation and accounts for the fact that the observed sample is not random. The statistical significance of the estimated coefficient of the IMR (often called the selectivity correction) tests for the presence of any selectivity bias and its sign indicates the direction of the bias. Insignificant effect of IMR on the dependent variables indicates that no sample selection bias exists. Thus, inclusion of IMR as an additional regressor or explanatory variable is meaningless and may affect efficiency. If the coefficient of the IMR is positive, then, there is a positive correlation between error terms obtained in the two steps of the *Heckit* method. In equation 2, for example, a positive sign of this parameter indicates that managers who are more likely to train their employees in stage one tend to spend larger amounts on employees training in stage two. On the other hand, a negative sign indicates that managers who are less likely to train their employees tend to spend smaller amounts on employees training. The EVIEWS software package is used to estimate equations 1 to 5.

5. The Estimation Results

In equation 1, managers' and SMEs' characteristics and other variables effect on the managers' decision whether to train employees and spend on employees training or not is examined. In equation 2, the effect of managers' characteristics, SMEs characteristics and enterprise ability to spend on employees training on the demand for employees training is examined. Finally, in equations 3 to 5, the impact of training expenditures and other variables on SMEs performance is examined. The main indicators used for performance are: annual profits, revenues and number of employees. Definitions of study variables are shown in Appendix 1.

5.1 Determinants of employees training in SMEs (stage one): PROBIT model

Equation 1 examines the effect of the explanatory variables on the manager's decision. These variables include: 1. the managers' characteristics such as age, level of education, years of experience and gender; 2. the SMEs characteristics such as: source of fund, life stage, average annual profits, sector and region of operation and number of employees; 3. other variables such as: number of part-time employees, whether the owner has been trained or not and whether the training needs have been determined or not. Appendix 2 shows the estimation results of the first stage PROBIT model. It shows that four variables have significant negative effect on the probability of employees training (at least 1% level). First, using external sources of fund and having loan payments make the manager less likely to train employees. SMEs that have interest and loan payments have financial pressure and relatively limited pool of resources and therefore, a reduced ability to spend on employees training. Secondly, SMEs that reported less average annual profits are less likely to train employees. This is straight forward since less profits means lower ability. Thirdly, managers of industrial SMEs are less likely to train employees. This is due to the nature employee selection criteria in these enterprises. At the selection stage, employees are either skilled or non skilled, therefore these SMEs choose those who have enough skills and lack need for training. A possible conjuncture is that the change in technology is slow and reduces the need for continuous training. Finally, SMEs that are managed by their owners are less likely to train employees. In this case owners may perceive training as a liability with little future return. This is especially true when employees are not highly motivated and there is a high turn over rates. Owner managers are more concerned with the absolute value of short term profits. This is in contrast to managers who are

not owners who may be not only interested in financial success but, also other aspects such as productivity, expansion and competitiveness.

On the other hand, the following variables were found to have a significant positive effect on the manager's decision (at least 10% level). First, increasing age within the 22 to 30, 31 to 40 and 41 to 50 age groups increases managers' tendency to train employees. To a certain extent, it seems that the older the managers are the more aware they become of the benefits of training. However, very old managers above 50 years seem not to share that view. This is because these managers belong to the old school that favors experience over education. Secondly, the higher is the level of managers' knowledge about training institutions the more likely they will train employees. This reflects the importance of the supply side of the training market. Managers may be busy, located in remote regions, passive and not know about training and therefore may not seek to train their employees. This puts the burden of educating and supporting SMEs' managers on governmental bodies that are concerned with SMEs. Thirdly, managers who have higher level of education, those who have longer years of experience, those who have received specialized training, those who perceive the beneficial impact of training at the personal and enterprise levels and those who have determined the training needs of their enterprises are more likely to train employees. This may reflect the manager's awareness toward the positive impact of employees training on the enterprise and employees performance. In addition, managers who periodically determine their employees training needs will have better performance control systems in their companies and more likely to link specific training needs to improvement in performance. Fourthly, with regards to the characteristics of the enterprise, it was found that medium enterprises and enterprises in the second life stage (operation stage) are more likely to train their employees. Medium enterprises tend to have financial resources and therefore an increased ability to train. In addition, medium enterprises face more competition and pressure to continuously increase the efficiency and effectiveness of their employees which creates an additional demand for employees training. Finally, the managers' gender, the region of operation and the number of part-time employees were found to have no significant effect on the probability of employees training.

5.2 Determinants of training expenditures (stage 2): Heckit model

The IMR is used as an additional regressor in equation 2. It has been calculated for each observation of the selected sample - those who decided to train their employees in stage one PROBIT model (Equation 1). The IMR coefficients are positive and significant, therefore sample selection bias does exist therefore including IMR as an additional regressor is relevant and increases efficiency. The positive sign of the coefficient implies that factors that make managers more likely to train their employees will also induce them to spend more on employees training. Equation 2 is estimated for the years 2005 and 2008 in order to control for the effect and validate the consistency of the explanatory variables. The results of the stage two that analyses the determinants of training expenditures are shown in appendix 3A and 3B.

Determinants of employees training in 2005:

The results in appendix 3A show two groups of explanatory factors: one that has significant positive effect on training expenditure and another that has a negative effect. It was found that older managers, male managers, managers with higher level of education and those who perceive training as beneficial tend to spend more on employees training. Whereas managers' with more years of experience, owners who manage their business and managers who have obtained specialized training are found to spend less on employees training. This can be explained by the fact that the more experienced the manager is the more skills and knowledge are transferred in-house which implied less external training expenditures.

With regards to the enterprise's characteristics, the results show that start-up capital, medium enterprises, enterprises located in the middle region and enterprises in the third life stage (expansion stage) are found to spend larger amounts on employees training. The higher training expenditures are driven by a higher demand. Higher start-up capital means that enterprises have the ability to allocate more resources for training. This is also true for medium enterprises since they tend to have higher capital and more employees. Moreover, since the majority of the training institutions are located in the middle region which results in higher supply and closer geographic proximity which lowers costs of training and induce more demand. Enterprises in the expansion stage necessarily incur more training expenditures since they need to increase effectiveness. On the other hand, older enterprises, industrial enterprises and enterprises in stage two (operation stage) spend smaller amounts on employees training. These can be explained by the fact that in-house training can become a substitute to external training. This is especially true in older enterprises since employees would have accumulated enough skills to pass them to their novice colleagues. In case of industrial enterprises, reliance on technology makes it easier to rely on in-house training. With regards to ability and other factors, the results show that having loan payments and paying more taxes results in lower expenditures on employees training. Whereas growing profits increase the managers' ability to spend more on employees training.

The results also show that the higher usage rate of part-time employees result in less spending on employees training. Finally, it was found that enterprises that require technical training spend more since this type of training relates to core business processes, adds more value and cost more.

Determinants of employees training in 2008:

In order to control for the effect and validate the consistency of the explanatory variables, equation 2 was estimated for 2008. As expected, effects of some variables remained unchanged, while others did change or became insignificant. For example, the age and gender of the manager, enterprise age, managers' years of experience, enterprises located in the middle region, manager's perception of training benefits, annual profits had the same effect on training expenditures. On the other hand, the coefficients of the number of part-time employees, enterprises in the expansion stage and enterprises requiring technical training remain significant but changed their signs. There have been new trends in the labor market globally and in Jordan such as the reliance on part-time labor which is cheaper and more fixable. The higher expenditures on technical training in 2005 meant that companies will spend less in future years. Finally, the remaining factors were found to have insignificant effect on training expenditures in 2008. It is worth noting that enterprises that spent more on employees training prior to 2008 spent less in 2008.

It is worthy to note that some of the explanatory variables were found to have an effect on managers' behavior in stage one and stage two, which accords with the sign and significance of the coefficient of the IMR in equation 2. For example, older managers, those with higher level of education, those who have positive perception of the benefits of training were found more likely to train employees and spend larger amounts on training. On the other, owners who manage their businesses are found to be less likely to train employees and they spend smaller amounts on training. Moreover, SMEs that have higher profits were found more likely to train and spend larger amounts on training. Whereas, SMEs that have current loan payment were found to be less likely to train and spend smaller amounts on training.

5.3 Impact of training expenditures (stage three): Heckit method

Equations 3 to 5 examine the impact of total training expenditure in the last fours years, source of fund and the managers' years of experience on SMEs performance as shown in appendices 4A, 4B and 4C. The annual profits, revenues and number of workers were use as performance indicators. The results show that total training expenditures in the previous four years have had a significant positive effect on enterprise' performance (at least at 1% level). The strongest impact was on revenues followed by profits and finally number of workers. Therefore, it can be safely argued that higher investment on employees as indicated by training expenditures improves the SMEs performance in the form of increases revenues, profits and number of employees. The results also show that manager's years of experience- which reflect his/her level of managerial skills and productivity- significantly positively affect the enterprise's profits and revenues (at least at 1% level), but has insignificant impact on the number of employees. Finally, accessing bank loan market was found to have a significant negative impact on enterprise's profits at 5% level, but it has no effect on its revenues and number of employees. The IMR coefficients are significant, therefore sample selected bias does exist and including IMR as an additional regressor is relevant and increases efficiency.

6. Conclusions and Recommendations

This paper aimed at examining the determinants and impact of employees training on SMEs performance in Jordan. In order to do so, the study conceptualized training activities as a three stage process. In stage one, the manager decides whether to train employees or not. If the manager decides to train then he/she determines how much to spend on employees training, and hence the demand for employees training is determined. The impact of training is assessed in the third stage. The study found that manager's characteristics (age, experience, education, perceptions, awareness and skills), enterprises characteristics (life stage, sector, size and profits) and other factors (source of fund and training needs) affect the manager's and SMEs involvement in employees training market (stage one). With regards to the determinants of demand for employees training (stage two), it was also found that manager's characteristics (age, experience, gender, education, perception and skills) enterprise's characteristics (start-up capital, age, sector, location, life stage, size and profits) and other factors (tax, type of training and source of fund) have an effect on training expenditures. Importantly, the study found that there are common factors that affect both manager's decision to enter employees training market (stage one) and the demand for training (stage two) which highlight the importance of studying training as a multistage process. Finally, the study found that training has a positive impact on SMEs' profits, revenues and size. Accordingly, the study has the following recommendations: first, since SMEs managers' perceptions and beliefs about benefits of training appears to be a major determinant of training, government and associated agencies concerned with SMEs in Jordan must target managers in order to increase their awareness of the presence and benefits of training. Secondly, government intervention should take

into consideration the inability of SMEs, in certain sectors, regions and life stages, to spend on training. For example, due to the concentration of training markets in the middle region, more efforts are needed in the south and north regions. That is to increase the outreach of training institutions. Finally, factors that negatively affect the SMEs involvement in employees training markets and their training expenditures must be considered. For example, since owner managers are less likely to enter employees training markets and they spend less on training, more efforts are needed to change their view of training from being a cost to being an investment that has long term effects on SMEs financial performance.

References

Al-Mahrouq, M. & Al-Jaber, T. (2003). The Required Economic Strategies and Monetary Policy for Small and Medium Enterprises funding. Paper prepared to the Sixth Islamic Annual Forum: The Role of Islamic Banks and Financial Institutions in Funding Small and Medium enterprises. Amman, Jordan.

Al-Wadi, M. (2005). Small –Scale Business Challenges, with Special Reference to their Role in the Development of Jordan. *Arab Management Journal*. 25 (1):1-43.

Barry, B & Milner, B. (2002). SMEs and Electronic Commerce: Departure from the Traditional Prioritization of Training. *Journal of European Industrial Training*. 26(7):316-326.

Betcherman, G., Leckie, N. & McMullen, K. (1997). *Developing Skills in the Canadian Workplace*. CPRN Study No. W02, Renouf Publishing, Ottawa.

Bryan. (2006). Training and Performance in Small Firms. *International Small Business Journal*. 24 (6):635-660.

Collier, W., Green, F., Peirson, J., & Wilkinson, D. (2004). Training and establishment survival. Working paper. University of Kent, Canterbury.

Cosh, A, Duncan, J, Hughes, A. (1998). Investment in Training and Small Firm Growth and Survival: An empirical analysis for the UK.1987-97, DFEE Publications Research. Report No.36, London.

Dutta, D. & Magableh, I. (2006). A socio-economic study of the borrowing process: the case of microentrepreneurs in Jordan. *Applied Economics*.38, P 1632.

Goldberger, A. (1964). *Econometric Theory*. New York: John Wiley and Sons.

Greene, W. H. (2000). *Econometric Analysis* (4th ed.). USA: Prentice Hall International, Inc.

Hashim, M. & Ahmad, S. (2006). An Assessment of Training Practices among Malaysian SMEs. *Advances in Global Business Research*. 3 (1)..

Heckman, J. (1979). Sample Selection Bias as a Specification Error. *Econometrica*. 47:153-161.

Hill, R. C., W. E. Griffiths and G. G. Judge. (2001). *Undergraduate Econometrics*. New York: John Wiley & Sons.

Holcombe, S. (1995). Managing to Empower: The Grameen's Bank Experience of Poverty Alleviation, London: Zed Press.

Huang, T. (2001). The Relation of Training Practices and Organizational Performance in Small and Medium Size Enterprises. *Education and Training*. 43(8/9): 437-444.

Hunt, I. and Hogan, D. (2005). Moving Small Companies Towards Next Generation Employability, Community of Practice (COP) Report, COP3.

Jennings, P.L. and Banfield, P. (1993). Improving Competence in Small Firms. Paper presented at the 16th National Small Firms Policy and Research Conference, Nottingham: The Nottingham Trent University.

Jin and Tsang. (2001). Determinants of On-the-job Training and Adult Education in Shenzhen, China, A paper presented at International Conference on Economics of Education Beijing University, Beijing, China, May 16-19.

Jones. (2004). Training, Development, and Business Growth: A study of Australian Manufacturing Small-Medium Sized Enterprises. *Asia Pacific Journal of Human Resources*. 42(1):96-121.

Jones, J. T. (2005). The Determinants of Training in Australian Manufacturing SMEs. *Education and Training*. 47(8-9): 605-615.

Karmel & Cully. (2009). The demand for training, a conference paper presented at the Skills Australia, Academy of Social Sciences seminar in Sydney.

Khandker, S., R. (1998). Fighting Poverty with Microfinance: Experience in Bangladesh. Washington, D.C: Oxford University Press for the World Bank.

Kitching, J., Blackburn, R. (2002). The Nature of Training and Motivation to Train in Small Firms, Small Business Research Centre, Kingston University, London.

Maddala, G. (1977). *Econometrics*. New York: McGraw-Hill.

Magableh, I & AL-Mahrouq, M. (2007). Small and Medium Enterprises (SMEs): Concepts, Characteristics, Importance, Merits and Obstacles, a paper prepared at Small Enterprises: an Effective Tool to Address Poverty Forum, Yarmouk University Jordan 29-31 July.

Magableh, I. (2009). Economics of Microfinance and SMEs in Jordan. VDM Verlag Dr. Muller Aktiengesellschaft & Co. KG.

Marshall, J., Alderman, N., Wong, C., Thwaites, A. (1993). The Impact of Government Assisted Management Training and Development on Small and Medium-Sized Enterprises, Britain, Environment and Planning, pp.331-48.

Mryyan, N. (1997). Labor Characteristics and Salary Determinants in the Informal Sector in the Urban Centres in Jordan. Dirasat, 24(2): 413-428.

Noe, R., A. (2002). Employee Training and Development (2nd Edition), Boston: Irwin/McGraw-Hill.

Otero, M. & Rhyne, E. (1994). The New Word of Microenterprise Finance. London: IT Publications.

Reid, Renee S. & Harris, Richard I. D. (2002). The Determinants of Training in SMEs in Northern Ireland, *Education and Training*. 44 (8-9): 443-450.

Remenyi, J. (1991). When Credit is Due. London: IT publications.

Smith, A. and Whittaker, J. (1999). Management Development in SMEs: What Needs to be Done?", *Journal of Small Business and Enterprise Development*. 5(2), 176-185.

Tobin, J. (1958). Estimation of Relationships for Limited Dependent Variables. *Econometrica*. 26, 24-36.

Westhead, P. (1998). Factors Associated with The Provision of Job Related Formal Training By Employers. *International Journal of Entrepreneurial Behavior and Research*. 4(3), 187-216.

Table 1. Response rate of the sample

Item	Central		Northern		Southern	
	Number and Percentage of Questionnaires Distributed					
	No.	%	No.	%	No.	%
Industrial Sector	134.0	26.800	38.0	7.600	18.0	3.600
Services Sector	220.0	44.000	57.0	11.400	33.0	6.600
	Number and Percentage of Questionnaires Received					
	No.	%	No.	%	No.	%
Industrial Sector	102.0	76.1	36.0	94.7	12.0	66.7
Services Sector	182.0	82.7	56.0	98.2	30.0	90.9
	Number and Percentage of Usable Responses					
	No.	%	No.	%	No.	%
Industrial Sector	76.0	56.7	36.0	94.7	9.0	50.0
Services Sector	126.0	57.3	53.0	93.0	20.0	60.6

Table 2. Initial investment and average annual profits

Item	Initial Investment	Average Annual Profits
Less than JD1000	23.4	4.4
JD1000-less than JD5000	56.9	20.9
JD5000-less than JD10000	4.7	26.6
JD10000-less than JD15000	13.1	10.6
JD 15000 and more	1.9	37.5

Table 3. Obstacles facing training activities in SMEs

Problems (1 for Yes and 0 for No)	Mean
Lack of adequate information	.91
Managers attitudes toward cost of training	.87
Financial constraints (financial ability)	.79
Lack of training needs assessment	.68
Administration (managers culture)	.51
High turnover rates	.46
The work environment is not encouraging	.40
The modest role of training institutions	.39
Lack of employees enthusiasm towards training	.33
The modest role of the government	.32

Tables 4. Impact of employees training

Item (0 no, 1 yes)	Mean
Enhance the enterprise performance	0.89
Decrease spoilage of goods	0.55
Enhance labor skills and productivity	0.89
enhance loyalty and reduce turnover rate	0.46
Enhance customer satisfaction	0.61
Ease problem solving process	0.84

Table 5. Reasons for not entering employees training markets

The Determinants of Training (1 for Yes and 0 for No)	Mean
High training cost	.96
We use inside training	.93
No government support and subsidies	.80
Location of training is far away	.63
Lack of adequate information	.56
Absence of training institutions	.55
Training not important or not feasible	.50
Lack of demand for training	.49
The workers are not encouraged	.37
I didn't think of this before	.34

Appendix 1: Definitions of Variables

Variable	Definition
AGE	: Age of manager;
AGE30	: Dummy (1 if manager's age is 30 years or less, 0 otherwise)
AGE31_40	: Dummy (1 if manager's age between (31-40) years, 0 otherwise)
AGE41_50	: Dummy (1 if manager's age between (41-50) years, 0 otherwise)
AGE51_60	: Dummy (1 if manager's age between (51-60) years, 0 otherwise)
AGES	: Age squared
AV.PROFITS	: Average annual profits
CAPITAL	: Capital
EAGE	: Enterprise's age (years of operation)
M.EXPER	: Manager's years of experience
GENDER	: Gender dummy variable (1 if male, 0 female)
IMR	: Inverse Mill's Ratio
ISEC	: Dummy (1 if industrial sector, 0 otherwise)
KNOW	: Knowledge dummy variable (1 if manager has enough knowledge, 0 otherwise)
LOAN	: Source of fund dummy variable (1 if bank loan, 0 otherwise)
LOED	: Number of years of formal education
MEDIUM	: Size of enterprise dummy variable (1 if medium, 0 otherwise)
MREG	: Region dummy variable (1 if Middle region, 0 otherwise)
OM	: Dummy (1 if the enterprise is managed by its owner, 0 otherwise
PART-TIME	: Number of part-time employees
PER	: Dummy (1 if the manager is aware of positive impact of training, 0 otherwise)
POFITS	: Annual Profits
STG2T	: Life stage dummy variable (1 if operation stage, 0 otherwise)
STG3T	: Life stage dummy variable (1 if expansion stage, 0 otherwise)
TAX	: Amount of taxes paid
T.T.EXP	: Total training expenditures (2004-2008)
TEXP	: Training expenditures
TM	: Dummy (1 if manager has been trained, 0 otherwise)
T.NEEDS	: Training needs dummy variable (1 if training needs are determined, 0 otherwise)
TOTT	: Type of training dummy variable (1 if technical training, 0 otherwise).

Appendix 2. Determinants of Training Employees

Variable	Coefficient	z-Statistic	Prob.
AGE30	5.196147*	2.793983	0.0052
AGE31_40	4.157430**	2.336418	0.0195
AGE41_50	4.142492**	2.206138	0.0274
AGE51_60	1.969552	1.166399	0.2435
LOAN	-1.044072*	-2.901664	0.0037
KNOW	0.704153***	1.888959	0.0589
STG2T	1.173776**	2.221898	0.0263
AV. PROFITS	-1.722951*	-4.188568	0.0000
PER	1.240099*	2.797208	0.0052
M.EXPER	1.401128*	3.434685	0.0006
ISEC	-8.935822*	-3.334515	0.0009
T.NEEDS	8.593656*	3.222603	0.0013
LOED	0.114069***	1.919957	0.0549
PART-TIME	0.239393	0.429206	0.6678
MEDIUM	1.056392**	2.243149	0.0249
TM	3.034607*	4.651719	0.0000
OM	-1.722951*	-4.188568	0.0000
MREG	0.683285	1.525122	0.1272
GENDER	0.148818	0.325603	0.6476
Log likelihood = -49.279	Observation N = 320.		

Notes: (*) Significant at 1% level, (**) significant at 5% level, and (***) significant at 10% level.

Appendix 3A: Determinants of training expenditures-2005

Variable	Coefficient	z-Statistic	Prob.
AGE	14.19744*	7.136119	0.0000
AGES	0.049711***	1.752433	0.0797
CAPITAL	0.000127*	2.685024	0.0073
EAGE	-2.126356*	-3.814261	0.0001
M.EXPER	-4.996561*	-5.332123	0.0000
GENDER	224.4203*	19.30098	0.0000
ISEC	-132.1932*	-11.80634	0.0000
LOAN	-159.9401*	-11.25511	0.0000
LOED	13.35996*	6.922062	0.0000
MEDIUM	143.1322*	8.251904	0.0000
MREG	135.1211*	10.81043	0.0000
OM	-268.3402*	-13.38703	0.0000
PER	561.1939*	50.84434	0.0000
PROFIT_1	0.017553*	65.69568	0.0000
PTIME	-189.8044*	-9.497817	0.0000
STG2T	-23.18567***	-1.948889	0.0513
STG3T	32.05350*	2.909167	0.0036
TAX	-0.008581*	-4.851700	0.0000
TM	-28.26725*	-2.108246	0.0350
TOTT	42.11149*	2.585889	0.0097
IMR	1.012989*	349.3281	0.0000
Log likelihood = -1069 Percentage predicted correctly =		Observation N = 228	

Notes: (*) Significant at 1% level, (**) significant at 5% level, and (***) significant at 10% level.

Appendix 3B: Determinants of training expenditures-2008

Variable	Coefficient	z-Statistic	Prob.
AGE	114.9490*	2.765453	0.0057
AGES	-1.159722**	-2.225888	0.0260
CAPITAL	0.000208	0.460588	0.6451
EAGE	-17.71808*	-3.294795	0.0010
M.EXPER	-16.52578***	-1.867006	0.0619
ISEC	-657.4536	-0.779003	0.4360
LOAN	86.58310	0.629709	0.5289
LOED	-1.750397	-0.095857	0.9236
MEDIUM	-244.4870	-1.530612	0.1259
MREG	642.7012*	3.166908	0.0015
PER	943.1363*	5.494746	0.0000
POFITS_1	0.031247*	5.481312	0.0000
PTIME	403.2224***	1.958169	0.0502
GENDER	393.6974*	3.269032	0.0011
STG2T	-238.2459	-1.493592	0.1353
STG3T	-376.9712*	-3.257493	0.0011
TAX	-0.001653	-0.085131	0.9322
TEXP_1	1.058139*	13.43419	0.0000
TEXP_2	-1.837134*	-6.565335	0.0000
TM	81.58376	0.639413	0.5226
TOTT	-493.2906*	-3.156220	0.0016
IMR	1.292038*	5.078149	0.0000
Log likelihood = -1667.924, Percentage predicted correctly =		Observation N = 228	

Notes: (*) Significant at 1% level, (**) significant at 5% level, and (***) significant at 10% level.

Appendix 4A. Impact of Training Expenditures on Profits

Variable	Coefficient	t-Statistic	Prob.
CONSTANT	-61177.50*	-3.598253	0.0004
M.EXPER	3397.409*	2.851482	0.0048
T.T.EXP	26.28206*	9.944093	0.0000
LOAN	-32284.77**	-1.830957	0.0684
IMR	-97.85268*	-9.157178	0.0000
R-squared	0.403764	Prob(F-statistic)	0.000000
Observations	228		

Notes: (*) Significant at 1% level, (**) significant at 5% level, and (***) significant at 10% level.