The Effect of Industry Extension Services Packages on the Performance of Small and Micro Enterprises in Dessie, South Wollo and Oromia Zones of Eastern Amhara

Mulugeta Chane Wube

Management Lecturer, College of Business and Economics

Wollo University, Dessie, Ethiopia

Abstract

This descriptive study is designed to analyze the effect of industry extension service packages on the performance of Micro and Small Enterprises in Dessie, South Wollo and Oromia Special zones. For the study MSEs engaged in government priority sectors of manufacturing, construction and urban agriculture and are on operation for more than two years were purposely selected. The total population of the study was 646 MSEs operators from which 248 samples were selected using proportional stratified and simple random sampling techniques. In collecting the required data, questionnaire, interviews and focus group discussions were the main instruments used. The analysis was made using SPSS version 20 on 227 fully responded questionnaires. The results of the analysis show that industry extension service supports provided by TVET trainers to MSEs is not adequate in all the four dimensions: technical, technology, Kaizen and entrepreneurship. Moreover, overall performance of MSEs surveyed was found to be very low. The study reached to the conclusion that the effect of the industry extension service provided to MSEs in improving their performance is inadequate. It is suggested that industry extension services should not be provided by TVET trainers as supplementary task to their education and training missions. It should be given by fulltime experts having the required skill, knowledge and attitude in all the four dimensions of industry extension services.

Keywords: Industry extension, MSEs, TVET trainers, Technical support, technological support, Kaizen support, Entrepreneurial support

1. Introduction

Micro and Small Enterprises (MSEs) are increasingly recognized as an important driver of economic growth, productivity, innovation and employment, and are widely accepted as a key aspect of economic dynamism (UNDP, 2016).MSEs, which account for over 90% of enterprises in all countries, are an important source of output and employment. They employ 33% of formal sector workers in low-income countries and 62% of such workers in high-income countries. Because poor countries have large informal economies, dominated by micro-businesses, the MSEs portion of total employment is much higher (ILO, 2006).

According to Micro and Small Enterprises Development Strategy of Ethiopia, designed to ensure the sustainability of the development achieved in all economic sectors of the country, the main focus of the government is creating job opportunities through MSEs development, to reduce unemployment and alleviate poverty and enhancing MSEs to be base for industrial development in the country (Ethiopian MSEs Strategy, 2011).The strategy emphasized that industry extension service package incorporating four segments: technical, technology, kaizen and entrepreneurship is believed to be pillars so as to upgrade MSEs in to medium level enterprises in the process of transforming the country from agriculture led to industrialization. The service provision started since 2011 to all MSEs focusing on selective developmental sectors mainly manufacturing, urban agriculture, construction and agro processing.

1.1 Statement of the Problem

Industry extension service in Ethiopia is provided by instructors of TVET colleges. The services are designed to make MSEs competent enough in the domestic and international market through production of quality and competitive products that can substitute imports. However as the annual reports of the regional TVED bureau clearly show, the extension service is not successful enough to enable MSEs generate sustainable job opportunity and income attributed to different internal and external factors (ANRS TVED Report, 2018).

Federal Ethiopian technical and vocational education and training agency has 55 years (2002 -2057) plan for the success of Ethiopia Renaissance envisioning middle income Ethiopia. To achieve this plan, industry extension service is taken as the key tool and the pillar of the plan. For this, due attention is given by government of Ethiopia to industry extension provided to MSEs (Ethiopian TVET agency, 2014).

The finding of Birhanu (2014) in assessing industry extension service practices in Addis Ababa indicates that kaizen implementation has a relatively better success among the industry extension service packages, but there had been challenges which emanated from various sources. To mention some, gaps in knowledge of executives, trainers and employees, negative attitude towards the kaizen implementation, lack of knowledge and skills of MSEs operators, gaps in available infrastructures and material resources, and gaps in the capacity and capabilities of the management body are identified as significant factors for poor kaizen implementation.

Similarly, Fita (2014) found that despite the fact that industry extension service is already

started in all TVET institutions, equal attention is not given to all the packages. Kaizen is found to be the most implemented package among the four industry extension services. According to his finding, the industry extension service is not provided in accordance with the standards due to lack competent service providers.

These researchers tried to investigate the challenges and opportunities of MSEs performance growth in relation to lack of finance, lack of working premise, lack of access to markets and lack of access to land. What makes this research different is that it will focus on industry extension service and its effect on the performance MSEs.

The issue of industry extension is adapted from the extension programs of health and agriculture. Remarkable results have been recorded in the extension services of health and agriculture (WHO, 2010). However, from the very begging, industry extension services are facing tremendous challenges. The impact of the service on the performance of MSEs is not researched in detail beyond simple monitoring and evaluations made by the respective heads.

Hence this study is designed to assess the impact of industry extension service packages on the performance of MSEs and investigate practices and challenges the service provision.

1.2 Basic Research Questions

Do Kaizen supports affect the performance of MSEs in Dessie,South Wollo and Oromia special zone?

Do technology supports affect the performance of MSEs in Dessie,South Wollo and Oromia special zone?

Do technical supports affect the performance of MSEs in Dessie,South Wollo and Oromia special zone?

Do Entrepreneurship supports affect the performance of MSEs in Dessie, South Wollo and Oromia special zone?

1.3 Hypothesis

Ha1: There is a statistically significant relationship between kaizen support and MSEs performance

Ha2: There is a statistically significant relationship between technology support and MSEs performance

Ha3: There is a statistically significant relationship between technical support and MSEs performance

Ha4: There is a statistically significant relationship between entrepreneurship support and MSEs performance.

1.4 Objectives

1.4.1 General Objectives

Generally, the study is designed to assess the impact of industry extension service packages to the performance of MSEs in Dessie town, South Wollo, Dessie and Oromia Zones.

1.4.2 Specific Objectives

Specifically, it is intended to assess:

The impact of Kaizen support to the performance of MSEs in Dessie, South Wollo and Oromia special zone.

The impact technology support to the performance of MSEs in Dessie, South Wollo and Oromia special zone.

The impact of technical support to the performance of MSEs in Dessie, South Wollo and Oromia special zone.

The impact Entrepreneurship support to the performance of MSEs in Dessie, South Wollo and Oromia special zone.

1.5 Operation Definition

Micro enterprise: enterprises under the industry sector (manufacturing, construction and mining) that operate with 5 people including the owner and/or their total asset is not exceeding Birr 100,000 and under service sector (retailer, transport, hotel and Tourism, ICT and maintenance service) with 5 persons including the owner of the enterprise and/or the values of total asset is not exceeding Birr 50,000 (FDRE MSEs strategy,2011)

Small enterprises: enterprises under the industrial sectors (manufacturing, construction and mining) that operates with 6-30 persons and/or with a paid up capital of total asset Birr 100,000(one hundred thousand) and not exceeding Birr 1.5 million and Service sector (retailer, transport, hotel and Tourism, ICT and maintenance service) that operates with 6-30 persons or/and total asset, or a paid up capital is with Birr 50,001 and not exceeding Birr 500,000. (FDRE MSEs strategy,2011)

Manufacturing sector-sectors that include textile and garment, leather and leather products, food processing and beverage, metal works and engineering wood works including furniture and ornaments service, and Agro-processing

Agricultural sectors-refer to the main sub sectors of crop production, animal production, natural resource conservation.

Construction sectors: sectors incorporating building material, traditional mining works, Cobble stone, infrastructure sub contract and prestigious goods

2. Review of Related Literature

2.1 The Concept Industry Extension Service

According to Fita (2014) industry extension service elements consist of entrepreneurship, kaizen, technological and technical competency. The mechanism of dissemination of the service is mainly through in-company training, consultation and through group discussions with enterprises engaged in the same sector. The beneficiaries of the industry extension service are selected based on interest, evaluation of individual demand and physical observation and evaluation of the enterprises' working premises (MSEs strategy, 2011).

According to the Industry Extension service directive (TVET Agency, 2011), intervention areas for implementation of industry extension service program are technical support, entrepreneurial support, technological support and quality and Productivity support /Kaizen.

2.2 Industry Extension Packages

2.2.1 Technical (Skill) Support

According to Fita (2014) technical support involves identifying the technical gap and preparing a manual that can fill the gap of MSEs operators. The technical gap identification is done going to the enterprises working place and observing following the principles of Value chain. After the TVET trainer identified the gap using gap identification matrix, he/she will prepare the training manual that can fill the gaps identified.

2.2.2 Entrepreneurship Support

Entrepreneurship refers to an individual's ability to turn ideas into action (Hisrich, 2003). Entrepreneurship is therefore a key competence that helps people to be more creative and self- confident in whatever they undertake. Entrepreneurship skill is very vital in running business activities assuming moderate risks and to become successful in ones areas of operation. The training package of entrepreneurial for MSEs includes training on how to create a business network, business development service, development of business and expansion, and management of business opportunities (TVET Agency, 2008)

According to Fita (2011) entrepreneurship support means business related support giving to MSEs in order to make them competent and competitive enough in the local and international market.

2.2.3 Technology Supports

According to Eliud M. and Peter N.(2005) technology is a resource that can only be useful if adapted by firms to improve their efficiency and factor productivity. For MSEs a technology which is more of labor intensive, low-skill spheres and that can use local materials and resources is recommended. Eliud M. and Peter. (2005) also added that technology development involves the design of new machinery, equipment, production processes, materials and the methods of organizing production.

2.2.4 Kaizen Support

According to Imai(1986)Kaizen is a process of continual understanding by an organization to improve its business activities and processes with the goal to always improve quality of products and services so that the organization can meet full customer satisfaction. Kaizen is a Japanese word means change for the better which can easily be interpreted as continuous improvement (Imai, 1986).The kaizen process utilizes various tools and methods to make the problem visible, and then uses formal root cause analysis and other means to identify and correct the problem at the source. The result of implementing kaizen is to bring rapid improvement through lower costs, higher quality, and better products or service attributes that customer recognize Berhanu (2014).

2.3 Conceptual Framework
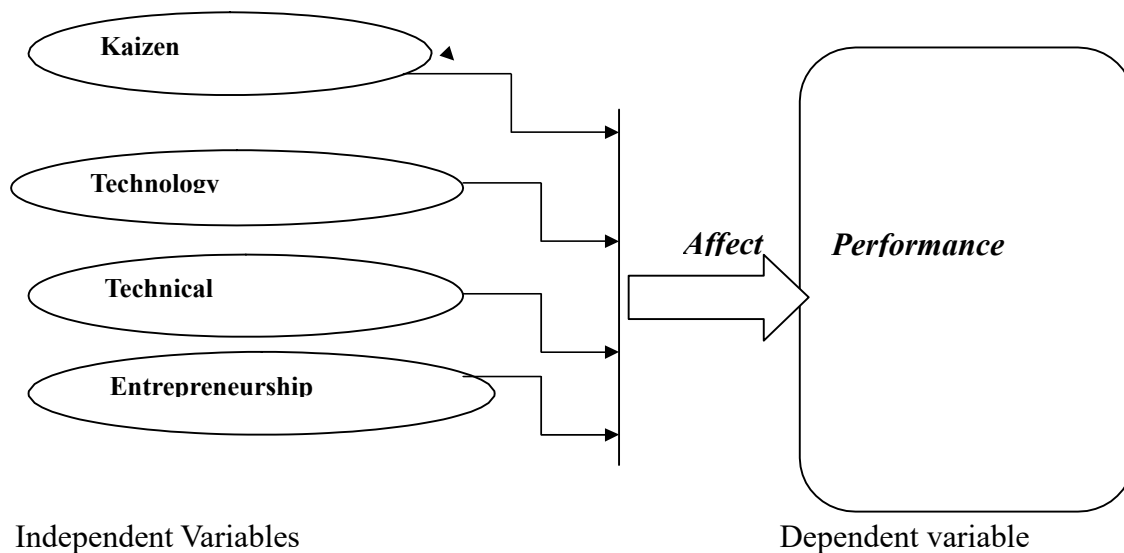
(Industry Extension Service Packages)

Independent Variables   Dependent variable

Figure 1. Conceptual framework (own model)

3. Methods and Materials

A descriptive research and explanatory design is used for the study since this design is vital to get reliable facts and current information on industry extension service packages and explain the effect of the package on the performance of MSEs.

3.1 Sources and Instruments of Data collection

The researcher used both primary and secondary sources of data. The primary data were obtained using questioners collected from MSEs operators and interview held with TVET trainers, deans and vice-deans, TVED office industry extension experts in South Wollo and Oromia Zone. While the secondary data were obtained from different journal, strategies, proclamations, books and reports.

3.2 Target Population, Sample and Sampling techniques

According to South Wollo and Oromia Zones TVED Office data, there are 646 registered and active MSEs operators on operation for more than two years (201 manufacturing, 216 construction and 229 urban agriculture).In selecting the sample, a proportional stratified sampling technique, taking the sectors as strata, was used and the sample size is determined by Yamai(1967) formula as:

$$n = \frac{N}{1 + Ne^2}$$ N=Population, n=sample, e=error level

$$= \frac{646}{1+646(0.05)2}$$

$$=248$$

Table 1. Number of total and sample MSEs operators for the study by sector

Sectors	Total no of operators (N)	Sample in %	No. of Sample of operators(n)
Manufacturing	201	38%	76
Construction	216	38%	83
Agriculture	229	38%	88
Total	646	38%	248

4. Data Analysis and Presentation

Statistical Package for Social Science (SPSS) version 20 was used to analyze the data. Descriptive statistics (percentages, table, mean and standard deviation) were used for data analysis. Besides, the regression and correlation analysis were used to measure the effect of industry extension service packages on MSEs performance.

4.1 Validity and Reliability of Data

The questionnaire was evaluated by senior and experienced researchers to ensure that they are good and easy to understand and fulfills content validity. The questionnaires were distributed to adequate number of respondents to make inference about the population to secure external validity so that was possible to generalize about the population based on the sample. The languages will be evaluated by English language teachers and the measurement was checked by measurement and evaluation experts.

A pilot test was undertaken to 50 sample respondents to get comments or improvement

suggestions from the respondents. Based on the feedback of the respondent, the required adjustments were made. Moreover the reliability of the instrument used was checked using Crombac alpha value of 86.1%. According to Haire et al., (2005) the reliability coefficient more than or equal to 70 % ($\alpha \geq 0.7$) is acceptable.

4.2 Analysis and Discussion of Results

4.2.1 Technical Support

Zaidatol and Bagheri (2009) summarized that mean values of less than 3.39 is low,3.4 to 3.79 is moderate and greater than 3.8 is high in using 5 likert scales. The following descriptive analysis is made based on this assumption.

Table 2. Technical support given to MSEs

	N	Mean	Std. Deviation
Enable me to identify technical gaps	227	2.3128	1.35802
Helped me in filling the gaps identified	227	2.1775	1.33952
Got trainings to upgrade my technical skills	227	1.6811	1.09259
Improved machine operation capability	227	1.7899	.94130
improved machine maintenance capability	227	1.8427	1.01375
Helped me to Know Scientific application of Work	227	2.3115	1.05564
Reduce task Redundancy	227	2.1044	.93836
Improve task simplicity	227	1.8956	1.07464
Improve efficiency	227	1.7912	1.15594
Grand Mean		2.0563	

The individual and rand mean values in table to clearly show that technical supports given to MSE's operators are not adequate enough.

4.2.2 Technology Support

The mean and standard deviation values in table 3 below reveals that technological supports provided to operators of MSEs are very low. The individual and grand mean (2.04) Values justifies it very well.

Table 4. Technological supports given to MSEs

	N	Mean	Std. Deviation
Enable me to adapt new technology	227	2.2643	1.34714
Helped me to implement new designs	227	2.2775	1.33952
Helped me to apply problem solving technologies	227	1.8811	1.09259
Helped me to copy new technologies	227	1.8899	.94130
Enable me to apply a new organizational structure	227	1.9427	1.01375
Helped me to invent new technologies	227	2.2115	1.05564
Enable me to compete technologically	227	2.0044	.93836
Enable to select feasible technologies	227	1.9692	1.01053
Enable me to substitute technologies to be imported	227	1.9471	1.07951
Grand Mean		2.043078	

4.2.3 Kaizen Support

Table 5. Kaizen supports given to MSEs

	N	Mean	Std. Deviation
Helped me to apply work place safety	227	2.3084	1.36066
Helped me to apply housekeeping rules	227	2.2775	1.33952
Helped me to sort necessary and unnecessary items in the workplace	227	1.7611	1.09259
Supported me in ordering items in a scientific manner	227	1.8799	.94130
Helped me in reducing workplace wastes	227	1.9527	1.01375
Enable me to give priority to quality	227	2.1215	1.05564
Helped me to bring continuous improvements in life	227	2.0144	.93836
Helped to do value adding activities	227	1.9780	1.05363
Helped me to apply an integrated and cooperative work culture	227	1.9592	1.12648
Grand Mean		2.051411	

Table 5 above reveals that kaizen supports provided to MSEs in the study areas is not adequate enough to bring remarkable results in the areas. The individual and grand mean values are real indicators for this.

4.2.4 Entrepreneurship Support

The entrepreneurial support provided to MSE's operators through TVET trainers is not satisfactory as the mean values in table 5 clearly justifies.

Table 5. Entrepereneurial supports

	N	Mean	Std. Deviation
Enable to continually record my costs and revenues	227	1.8987	.97461
Enable to keep a separate record of current and fixed assets	227	1.9471	.96708
Enable to open a separate business bank account	227	2.0529	1.23976
Enable to record inventories	227	2.1101	1.15645
Enable to record credit customers	227	1.8943	.94883
Enable to know my profit and loss	227	1.9515	.87862
Enable to know my tax liabilities ahead	227	1.9383	.95272
Enable to keep financial source documents	227	2.0529	.90075
Enable to know my cash flows	227	2.0220	.90449
Enable to know the enterprises assets, liabilities and capitals	227	1.9207	.93736
Enable me to apply personal entrepreneurial competencies(PECs)	227	1.8811	1.04286
Grand Mean		1.969964	

4.2.5 Performance of MSEs

The overall performance of MSEs as measured by 8 parameters in table 6 clearly shows that it is extremely low. The mean values in the table clearly indicate that MSEs have a very poor performance.

Table 6. Performance of MSEs

	N	Mean	Std. Deviation
Improved Sales Growth	227	2.1675	1.33952
Improved Market Share	227	1.8911	1.09259
Helped to enter to New Market	227	1.7892	.94130
Helped to develop New Product	227	1.8527	1.01375
Increased Number of Employees	227	2.2215	1.05564
Improved Profitability	227	2.0144	.93836
Improved Capital investment	227	1.9680	1.03669
Improved Productivity	227	1.9580	1.10688
Grand Mean		2.020388	

4.3 Effect of Industry extension service packages on Performance of MSEs

The study tried to measure the relationship between industry extension support packages and performance of MSEs. The correlation values in table 7 reveals that technical supports (p=0.8), technological supports (0.789), Kaizen supports (p=0.894) are strongly correlated with performance. This implies that supports given in the areas of technical, technological and Kaizen can bring remarkable results on performance of MSEs. Table 7 similarly shows that even though it is not as strong as others Entrepreneurial supports (p=0.267) are correlated with MSEs performance.

Table 7. Correlation values

		Technical	Technology	Kaizen	Performance	Entrepreneurship
Technical	Pearson Correlation	1	.800**	.789**	.894**	.267**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	227	227	227	227	227
Technology	Pearson Correlation	.800**	1	.740**	.814**	.163*
	Sig. (2-tailed)	.000		.000	.000	.014
	N	227	227	227	227	227
Kaizen	Pearson Correlation	.789**	.740**	1	.797**	.258**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	227	227	227	227	227
Performance	Pearson Correlation	.894**	.814**	.797**	1	.292**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	227	227	227	227	227
Entrepreneurship	Pearson Correlation	.267**	.163*	.258**	.292**	1
	Sig. (2-tailed)	.000	.014	.000	.000	
	N	227	227	227	227	227

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.4 Regression Analysis

The study revealed that the dependent variable(Performance of MSEs) is 83.8% explained by the four industry extension support packages(independent variables: Technical, Technology, Kaizen and Entrepreneurial supports).As the adjusted R square in table 8 show, the remaining 17.2% in performance of MSEs is determined by other factors not explained here.

4.4.1 Model Specification

The regression equation of this study was generally built around two sets of variables, namely the dependent variable (performance of MSEs) and the independent variables the four industry extension packages (Kaizen, technology, technical and entrepreneurship).

Where:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

$$Y = 1.269 + 0.4 X_1 + 0.195 X_2 + 0.139 X_3 + 0.045 X_4$$

Y is the dependent variable (performance of MSEs). X1 is kaizen Support

X2 is technology support X3 is Technical support

X4 is Entrepreneurial support

β1, β2, β3, β4, β5 are the coefficients associated with each independent variable

Table 8. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.917a	.841	.838	1.40298

a. Predictors: (Constant), Entrepreneurship, Technology, Kaizen, Technical

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.269	.524		2.422	.016
Technical	.400	.037	.560	10.833	.000
1 Technology	.195	.039	.232	4.944	.000
Kaizen	.139	.038	.168	3.653	.000
Entrepreneurship	.045	.021	.061	2.188	.030

a. Dependent Variable: Performance

5. Conclusions

The industry extension service support packages provided to operators of MSEs is found to be very low in all the four aspects. The technical, technological, kaizen and entrepreneurship supports given to MSEs are not satisfactory. This poor supports provided by TVET trainers to MSE's operators did not brought improvements performance of MSEs.

Therefore, it is possible to reach to the conclusion that industry extension service supports provided through TVET trainers to MSEs are not bringing adequate changes in the performance of MSEs and the overall effect of the service packages to the performance of MSEs is very poor.

6. Recommendations and Suggestions

It is possible to know in the study that 50% of the task of TVET trainers is providing an industry extension service to MSEs in addition to their education and training service in their respective colleges. Furthermore, all the four packages: technical, technology, kaizen and

entrepreneurship supports are expected to be delivered by each trainer regardless of his/her occupation. This creates not only an overload on trainers but also incompetence in one or more of the packages. Therefore, it is suggested that regular industry extension service providers are assigned to provide the service rather than using TVET trainers who have duties of training students. Moreover it is recommended that support packages provided to MSEs should be scientifically researched to know the real gaps of MSEs. Besides continually training and development programs should be arranged to service providers: TVET trainers or others so as to update themselves to the changing needs of MSEs.

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