

Strengthening Innovation and Information Technology Capabilities in Vocational Schools as Human Resources Development (HRD) Enter Point for Increasing SMEs Performance

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ABSTRACT

The purpose of this research is to show whether it is necessary to strengthen the capabilities of the innovation and informatics technology among vocational school students who will later become human resources enter points that can improve the performance of the Small Medium Enterprise (SME) industry in the digital era. We know that the Small and Medium Enterprises (SMEs) industry is one of the pillars of Indonesia's economic development that spearheads job creators, and Vocational graduates are expected to be the driving force for the achievement of SME optimal performance. This research relied on quantitative explanatory with survey method; its sample involved 176 out of 758 merchants (the total population) in Pasar Glodok Jakarta. All data were analyzed using descriptive and regression analysis with the SPSS program. The results showed that: a) the ability innovating and the information technology of SME entrepreneurs is the dominant factor determining the achievement of optimal SME performance, with a correlation value = 0.79.5 or 0.8 (strong correlation); b) Model predicts the achievement of the business performance of SME entrepreneurs: $Y = 0.529 + 0.341 X_1 + 0.527 X_2$; c) Innovation and information technology skills contribute to the performance attainment of SME entrepreneurs in the research site by 63.2%; d) Innovation and information technology capabilities are the capabilities needed by SMEs human resources in achieving optimal business performance; e) it is necessary to strengthen the ability of innovation & information technology since school (especially Vocational schools) in a sustainable manner which will become the key point of SMEs industry's human resources as an effort to bring closer the concept of link & match between Educational Institutions and industry.

Keywords: *business performance, information technology capabilities, innovation capabilities, SMEs*

1. INTRODUCTION

Vocational Education (SMK & Polytechnic/ Diploma) is education that prepares people to have certain skills to be ready to work in various industries/job markets. Vocational Education graduates are often considered by the industry / labor market not to meet the criteria needed to work (not ready for work yet). According to the Minister of Manpower Ida Fauziyah [1] referring to BPS Indonesia in 2020 that the data on the open unemployment rate in Indonesia derived from vocational graduates is still quite high, reaching 13.55%; This shows that there is no link and match between vocational education, industry and the

labor market. Changes in the average curriculum in educational institutions are carried out every 3 (three) years, on the other hand, the changes in the competence requirements (hard and soft skills) of vocational graduates for work change very quickly (perhaps every 6 months or every year). This link and match gap is what causes the high unemployment rate of vocational education graduates.

The concept of link and match in general, implies the need to describe the competence of graduates needed in the future job market by educational institutions. These competencies can be used as a medium to increase the relevance of educational institution graduates to the needs of workers in the industrial work and the labor

market. By displaying/publishing various industrial research results (SMEs) about the required competencies, it can provide input for strengthening any competencies from vocational education graduates needed by industry (SMEs) as entry point of human resources driving Indonesia's economic growth.

1.1. Small Medium Enterprises (SMEs) Industry

Business in an era of very dynamic environmental change requires business people who are responsive and responsive to all rapid changes, such as the digital era, dynamic environmental changes, such as the case of the Covid 19 pandemic that generally collapsed almost all instruments of human life activities without exception activities in business. In today's digital landscape, small and medium enterprises, or henceforth SMEs, must create innovations that offer convenience and transparent processes in business transactions. The economic growth of a country depends on an increase in business actors, regardless of level (ie, small, medium, and large enterprises). According to data from the Ministry of Cooperatives and SMEs in 2019, 23.16% of GDP came from small, medium and large enterprises; This trend is considered quite significant. On that basis, the contribution of SMEs to the state should not be underestimated.

In Indonesia, the role of SMEs is quite significant to economic growth. SMEs contribute to a) creating new jobs, b) increasing GDP, and c) providing safety nets in productive economic productivity. Therefore, many people like SMEs, although the percentage of the contribution of this business to the GDP is quite low at 23.16% (2019). The reasons people choose SMEs involve the ease of adopting and implementing new technologies in business and the growth and competitiveness of the business.

Pasar Glodok, where this research was conducted, is one of popular wholesalers in Jakarta. This market is one of the iconic places in Indonesia that sells various electronic goods. Most of the traders in the market are SME traders; and many sellers experienced a decline in sales and turnover, especially from customer walking. The shift from face-to-face marketing to digital marketing requires business people to continue to create innovation and digitalization in business, especially SMEs. This is to improve the achievement of business performance.

Based on the survey results on 35 sellers in Pasar Glodok report several issues (2020), it is seen that people are unsure of the performance of their business without creating innovation and implementing IT. On that ground, exploring how innovation and IT skills correlate with business performance is essential. Are the two skills essential to the business performance of SMEs in Pasar Glodok? The present work aimed to find out the answer to this question since presumably, those two

skills have a positive and significant correlation with the business performance variable.

1.2. Business Performance

Hernández and Lerma [2] describe the business performance as the quantitative and qualitative outputs of a company in a specific period. Among the example of qualitative outputs are the evaluation results of the company from the client, while the quantitative outputs include the profitability evaluation results. Obtaining qualitative and quantitative business performance data from SMEs is a complex process compared to retrieving the same data from big companies going public. It is easier to improve SMEs' performance through business alliances, strengthening networks and clusters for bargaining power among SMEs, and innovative sustainable development for enhancing production and operation efficiency [3]. The internal and external factors of SMEs are central to the business performance; the internal factors include a) the quality of human resources, b) management, organizational and technical skills, c) entrepreneurial competence, d) access to capital and market information, e) other production input factors, and f) business innovation. External factors include a) social network, b) legality, c) government support (including technology workshop and access to information) [4]

From the above discussion, the term SMEs performance, in the context of the present work, refers to the ability of a company to meet its goals by utilizing all resources the company has efficiently and effectively. The performance is reflected in the company's consistency, productivity, and quality.

1.3. Innovation Capabilities

Competence is often associated with employee skills and requirements that must be met by a worker. According to Irlandia (as cited in Fauziah et al. [5], innovation means creating commercial product through the invention or creative process, development, and an entirely new process. This idea outlines that innovation is the function of individual or group entrepreneurship, business organization, and public or government services.

Innovation is necessary for the current competitive business atmosphere, including SMEs. An organization is considered innovative if it has created something different, that is finding a new area of business, taking risks, creating a breakthrough. SMEs that have created innovation successfully were one level above the majority of the same business in terms of generating new ideas systematically in managing unique business compared to others. Consequently, the business reaches an optimum level of success. Baker and Sinkula (2002) and Greco, et.al (2015), as cited in Khan et al. [6] argue that innovation is of paramount importance in ensuring long-term success in a dynamic market. Budiningsih et

al [7] explain that innovation ability is an effort made to find, produce, introduce and apply a new finding in the form of ideas and solutions, technology that is useful for every human activity/business indicated by: looking for/seeing opportunities/opportunities, building / generate ideas, seek support for implementation and realize/implement new ideas. Adawiyah et al. [8] claim that innovative behavior is an output of productive idea development to enhance processes, procedures, and products. According to Budiningsih et al. [9] that regarding innovation, technology literacy has no significant contribution to the process of instilling innovative behavior in entrepreneur candidates. From this notion, one can say that technology is not an absolute prerequisite of innovation. Tidd and Bessant [10] mention several types of business innovation: a) product innovation (what products should be offered), b) process innovation (how the process and offer goes), c) position innovation (market target), and d) paradigm innovation (how the concepts should be framed).

In conclusion, the innovation capabilities of SMEs refer to efforts in finding out, producing, introducing, and applying something new, e.g., ideas and solutions, or technology that are impactful to the business activities; the activities revolve around a) product innovation, b) process innovation, c) position innovation, and d) paradigm innovation.

1.4. Information Technology (IT) Capabilities

Over the development of technology, business, and industries, regardless of level, have become accustomed to technology in their management process. Almost all business activities have been automated because of IT as this aspect has become an integral part of business performance. SMEs generally rely on local resources, and they are not an import-dependence business. As a result, the superior products of SMEs have their uniqueness, thus holding export potentials. Boosting the performance of SMEs is of paramount importance, given their significant contribution to economic growth. Doing so enables businesses to compete in today's globalized world. Cultivating SMEs' competitiveness can be done by the implementation of IT, such as a) broadening market network and market share, b) improving accuracy and efficiency of marketing, and also c) enhancing information exchange and business transformation.

SMEs are demanded to start incorporating IT and other digital technologies in their business management. A book entitled United Nations Competency Development—A Practical Guide [11] lists the indicators of a company or individual with technology awareness: a) keeping up with the technology development, b) comprehending the application and limitation of technology, c) striving to actively apply appropriate technology for a specific task, and d) willing to learn new technology. Furthermore, Bahador and Haider [12] explained that IT skills are significant for SMEs; these

skills cover: a) the utilization of IT, b) experience in handling IT-related problems, and c) management of the IT concepts. Recently, almost all businesses have been automatized as technology has been an integral part of business activities. IT skills are essential for all levels of business. In addition, Lopez and Alegre [13] classify three IT concepts, namely a) IT knowledge (demonstrating flexibility to adapt with the market potential), b) IT operational (methods, processes, and techniques of IT possibly required), c) IT infrastructures (artifacts, devices, and resources that may be required for technology access, processing, storage, distribution and utilization). From the aforementioned discussion, it is clear that the IT capabilities of SMEs include aspects of IT knowledge, IT operations, and also IT infrastructures.

2. RESEARCH METHOD

The present work relied on a quantitative method with a survey. It aimed at determining the impact of independent variables, namely innovation skills (X1) and IT skills (X2), on the dependent variable, i.e., the performance of SMEs (Y). A total of 176 out of 758 merchant populations in Pasar Glodok, Jakarta, were randomly selected as the research respondents. The data were collected from a Likert scale. Further, the data were analyzed correlation and regression analysis. Before performing the regression analysis, the requirement analysis encompassing normality, heteroscedasticity, auto-correlation, and multi-collinearity test, was conducted. Results of validity and reliability tests of each instrument of the variable (Y, X1, and X2) are valid and reliable.

3. RESULTS

3.1. Correlational Analysis and Multiple Regression

Based on the results of the multiple correlational analysis between the three variables, i.e., (Y) with innovation skills (X₁) and IT skills (X₂), the multiple correlational value **R** scored **0.795, rounded off to 0.80** (see Table 3). Such a result confirms that the variable Y simultaneously correlated with the other two variables; the correlation was **'positive'** and quite **'significant.'** Furthermore, the determinant coefficient value (R²) was **0.627**, significant since the value of **sig. F < 0.05 (0.00 < 0.05)**. The result clarifies that innovation skills (X₁) and IT skills (X₂) simultaneously contributed to business performance (Y) by 62.7%. The rest 37.3% represented other factors. Table 1. displays the result of multiple correlation analyses and determinant coefficients. The result of ANOVA regarding the correlation of the innovation skills (X₁) and IT skills (X₂) with the business performance (Y) can be seen in Table 2. and Table 3.

Table 1. Summary Model

Model	R	R Square	Std. Error of the estimate	Change statistics				D W
				F Change	df1	df 2	Sig. F Change	
1	.795 ^a	.632	.3179	148.343	2	173	.000	2.06
a. Predictors: (constant), IT skills, innovation skills								
b. Dependent variable: business performance								

Table 2. ANOVA

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	29.984	2	14.992	148.343	.000 ^b
	Residual	17.484	173	.101		
	Total	47.467	175			
a. Dependent variable: business performance						
b. Predictors: (Constant), IT Skills, innovation skills						

Table 3. Coefficients

Model		Unstandardized Coef		Std. error	t	sig	Collinearity statistics	
		B	Std. error				tolerance	VIF
1	Constant	.529	.226		2.33	.02		
	Innovation skills	.341	.069	.329	4.93	.00	.479	2.09
	IT Skills	.527	.067	.524	7.86	.00	.479	2.09

Based on the above results of the multiple regression coefficients in Table 3, a model of multiple linear regression model describing the significance of innovation skills (X₁) and IT skills (X₂) to business performance (Y) is provided below.

$$Y = 0.529 + 0.341 X_1 + 0.527 X_2$$

The variable of IT skills (X₂) is more impactful to the business performance rather than innovation skills (X₁), as 0.527 > 0.341. Further, the significance test result on the multiple regression analysis is Y = 0.529 - 0.341 X₁ + 0.527 X₂, 'significant' category due to the fact that sig 0.000 < 0.05, is lower than 148.343 (see Table 4.). This result signifies that the model Y = 0.529 + 0.341 X₁ + 0.527 X₂ is significant and applicable to determine the performance of SMEs in Pasar Glodok using the data of X₁ and X₂ if all of the independent variables have been identified. The multiple linear regression model Y = 0.529 + 0.341 X₁ + 0.527 X₂ emphasizes that the performance of the SMEs in the research site is in the poor category (score below 1, from the range of 1 to 5) if innovation skills and IT skills are absent. IT skills are also significantly impactful on the

business performance of the selected SMEs; the significance value measures at 0.527 (compared to the innovation skills at 0.341).

4. DISCUSSION

Results of the multiple correlational analysis between the three variables, i.e., (Y) with innovation skills (X₁) and IT skills (X₂), the multiple correlational value R scored 0.795, rounded off to 0.8 (see Table 1). This is in line with the one seen in Nimlaor et al. [14] that sustainable and innovative development, efficient production, and marketing operation through technology are central to enhancing SMEs' performance.

The study proposes a model that can be used to predict the maximum performance attainment of SMEs: Y= 0.529 + 0.341 X₁+ 0.527 X₂ (Y: SMEs Performance; X₁: innovation skill; X₂:IT skills). The notion that IT skills are more impactful on the business attainment of SMEs compared to innovation skills is in line with a study by Ramdan [15]; further Ramdan claims that digital literacy or ICT and development of a digital environment in SMEs is central to the application of digital platform by SMEs in Malaysia. Two factors are central to SMEs' technology adoption: a) internal factors (e.g., commitment and decision of SME owners or top management; providing adequate funds for human resources development and provision of the digital application needed for the business) and b) external factors (e.g., competitive atmosphere in the sector of SMEs, supports from the government, consumers and suppliers, and IT consultants in the management of SMEs). The Human Resources competencies of information system managers are a very strategic factor, therefore information technology managers are advised to always improve competencies in the IT field both concerning knowledge, skills, and attitudes in managing IT [16]. Lubis and Junaidi [17] recommend that strategies to accelerate the adoption of IT use are: a) provision of IT infrastructure; b) Provision of experts in the IT field; c) Initial capital for IT development; d) Socialization of IT Benefits in MSME Business Development. Ghobakhloo et al., as cited in Saleh and Hadiyat [18] explained that competitive and market globalization has urged businesspeople to create innovation, develop new products or services, or apply innovative procedures in their business for optimum performance, specifically SMEs.

5. CONCLUSION

The conclusion of this study are as follows: a) innovation skills and IT skills of SME owners are very important for achieving optimal performance; b) innovation skills and IT skills simultaneously contribute to business performance; c) for better performance of the SME entrepreneurs, a sustainable approach in encouraging innovation and information technology capabilities is essential

for prospective entrepreneurs/new entrepreneurs both in the labor market; d) the results of research in the industry can be published in schools by carrying out the concept of link & match between educational institutions and industry. The results of this study can recommend the importance of providing innovation capabilities and access to information technology early and continuously at all levels of education, especially in vocational-based schools.

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