The effect of entrepreneurial orientation and technology orientation on market orientation with education as moderation variable

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ABSTRACT

This research is aimed to disclose the influence of entrepreneurial orientation and technology orientation on market orientation with education as a moderation variable. Referring to the assumption of research approach, the study uses quantitative approach and causal relationship across variables is examined with SEM-PLS. The object of research includes Small-and-Medium Enterprises in East Java, Indonesia. Sampling method is simple random sampling with Malhotra technique. After applying it to research population, the obtained sample is 150 Small-and-Medium Enterprises. Data are collected with questionnaire. Responses are analyzed using statistic program of Smart-PLS version 3.2.7. Some empirical findings are obtained: (1) The increase of entrepreneurial orientation and technology orientation is going along with the increase of market orientation; (2) Education strengthens the impact of entrepreneurial orientation on market orientation; and (3) Education can reduce the influence of technology orientation on market orientation.

Keywords: Entrepreneurial Orientation, Education, Technology Orientation, Market Orientation, Small-and-Medium Enterprises

1. Introduction

Some business experts view Small-and-Medium Enterprises (SMEs) as business unit with great contribution to economic growth due to their capacity in delivering products and services optimally (Rekarti & Doktoralina, 2017, p. 614; Sanjo & Ibrahim, 2017, pp. 67–68; Tambunan, 2017, p. 89). Small-and-Medium Enterprises also provide jobs for citizens. Most importantly, their marketing has been organized in such a way to capture the momentum of ASEAN Economic Society that covers Indonesia and Southeast Asian regions. The development of Small-and-Medium Enterprises in Indonesia is encoun-
tered with a problem of lack of capacity in understanding market change and in offering the proper outputs to consumers (Rekarti & Doktoralina, 2017, p. 614). Indeed, Indonesian SMEs are frequently facing problems related with marketing, market orientation and product competition (Hadiyati, 2015, p. 128). Marketing is considered as the most vital element for SMEs to survive in business competition (Omsa, Ridwan, & Jayadi, 2017, p. 71). One reason why SMEs are lacking of market orientation is human resource. Both manager and workers of SMEs tend to lack of innovation (Golibjon, 2016, p.2) and of creativity (Rahadi, 2016, p. 50). Consequently, entrepreneurship values applied at SMEs become less efficient (Sidik, 2012, p. 378). Small-and-Medium Enterprises with high entrepreneurial orientation give more focuses on market orientation. They capture any opportunities that allow them to send their products to relatively new market, dare to shift to new products or services to adapt with demand contingencies in the future, and build more courage to confront the competitors (Neneh & Zyl, 2017, p. 173). If Small-and-Medium Enterprises apply entrepreneurial orientation as their entrepreneurial strategy and put it into their strategic planning, then their business may grow significantly (Guzman, Serna, & Castro, 2017, p. 99). Moreover, other factor that causes why market orientation of Indonesian SMEs is low is that SMEs’ products are failed to compete with products from larger companies or outnumbered by Chinese-imported products.

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This failure is associated with the use of low technology in SMEs’ production process (Sudaryo & Permatasari, 2017, p. 102). Small-and-Medium Enterprises are still less integrated with up-to-date technology, especially concerning with information technology (Dachlan et al., 2016, p. 319) or the latest technology in production process (Munizu, Sumardi, & Armayah, 2016, pp. 121–122). Being oriented toward the latest technology allows SMEs to satisfy consumer demands that always change with technology development and as time goes. Small-and-Medium Enterprises with technology orientation are usually producing more profits and more efficient in managing their business unit (Kasim & Altinay, 2016, p. 122). Besides, entrepreneurial orientation and technology orientation, another aspect affecting market orientation is education level of manager and workers of SMEs (Rupčić, 2016, p. 246). It is not a surprising fact that SMEs often disregard education level during recruitment and hiring process, and only absorb workers in order to reduce unemployment. Educated workers will increase the possibility of SMEs to be more successful (Hosseininia & Ramezani, 2016, p. 12). Educated workers also help SMEs translate consumer demands into products. If Small-and-Medium Enterprises fulfill consumer demands satisfyingly, then it is said that they successfully build market orientation and this market orientation enables them to increase profitability. Referring to phenomena explained in previous paragraphs, it can be said that some factors are affecting market orientation of Small-and-Medium Enterprises in Indonesia. These factors are entrepreneurial orientation, technology orientation, and education. Research attempts to provide empirical explanations about the effect entrepreneurial orientation and technology orientation on market orientation in Small-and-Medium Enterprises in Indonesia with education as moderation variable.

2. Literature Review

2.1. Education

Education is one critical factor for the success of business unit like Small-and-Medium Enterprises (SMEs) (Othman et al., 2016, p. 79). Education is a force that drives workers to think critically and motivates them to develop business. Education also guides SMEs’ workers and entrepreneurs to achieve goals and visions of the business that will escort them to the success (Othman et al., 2016, pp. 79–80). High education level is viewed as main factor for the development of socio-economic and human resource (Hosseininia & Ramezani, 2016, p. 12; Kim, 2017, p. 45). Educated workers can apply what they learn from school at workplace. If SMEs have workers who are able to apply organizational learning, then market orientation can be achieved easily. The reason is that highly educated workers tend to apply organizational learning with a purpose to improve SME’s performance (Thomas et al., 2017, p. 3).

2.2. Entrepreneurial Orientation

Entrepreneurial orientation is a business unit practice to implement entrepreneurship domain for the success of business unit (Duru, Ehidiamhen, & Chijioke, 2018, p. 2). Entrepreneurial orientation is the stepping stone for SMEs before they develop market orientation. This entrepreneurial orientation is built through developing new products, innovating products, and coping with market competitors (Kozubíková, Šopková, Krajčík, & Tyll, 2017, p. 209). Dimensions that constitute entrepreneurial orientation are innovation, risk-taking and proactive (Kozubíková et al., 2017, p. 209; Platin & Ergun, 2017, p. 79). Business performance will be optimum if SMEs are innovating with their business activity (Susanto & Wasito, 2017, p. 282). Both innovation and creative ideas are needed if SMEs desire to be more competitive. Indeed, if all these attributes are executed, it is certainty that SMEs will be rewarded with entrepreneurial orientation. The consequence of having entrepreneurial orientation is that SMEs can build market orientation easily (Hussain, Rahman, & Shah, 2016, pp. 396–397).

2.3. Technology Orientation

Companies with technology orientation are always reserving their resource to apply the newly latest technology to develop new process, new product and new service, which is targeted to produce higher performance (Nakola, Tarus, Buigut, & Kipchirchir, 2015, p. 340). Technology orientation helps companies obtain substantial technological background, which they can use it to produce new solution in responding consumer demands (Lo, Wang, Wah, & Ramayah, 2016, pp. 374; 340). Nowadays consumers tend to select products and services that preserve technological advancement. Invention and creativity in adopting technology may guide the companies to decide what strategic implementation that they should take. Small-and-Medium Enterprises that focus on the latest technology can offer ultimate products that are hardly for competitors to imitate. Therefore, technology orientation can increase the success and profitability of new products (Lo et al., 2016, p. 375).

2.4. Market Orientation

Market orientation is when business unit can identify market and build market-driven capacity (Dursun & Kilic, 2017, p. 2). Market orientation is an organizational culture that can be effectively producing a business attitude that respects consumer value and produces sustainable business (Kohli & Jawarski, 1990; Wilson, Perepelkin, Zhang, & Vachon, 2014, p. 36). Market orientation is viewed as critical element in dealing with more intensive competition and therefore, performance of business unit, like SMEs, is always affected by market orientation (Kalmuk & Acar, 2015, p. 166; Zainul, Astuti, Arifin, & Utami, 2016, p. 3). Indicators that shape market orientation include: (1) focusing on customer interest; (2) monitoring competitor movement, and (3) being responsive to customer and competitor interests to invest satisfaction to become loyalty (Day, 1998, p. 8; Dursun & Kilic, 2017, p. 2). Market orientation is considered important because it requires the company to collect relevant information, such as what the company wants, what the customers want, what the competitors do, and how the market
fluctuates in aligning with social, economic and environmental issues (Glavas & Mish, 2015, p. 636). Any information collected for building market orientation are important materials to deliver excellence value to customer (Slater & Narver, 1995) because market orientation affects the development of business environment (Segarra, Peiro, & Cervello, 2015, p. 1471). Small-and-Medium Enterprises that have market orientation will be more responsive and anticipative to all demands and desires of the consumers either in current or future days (Kiessling, Isaksson, & Yasar, 2016, p. 271).

3. Method

3.1. Design and Type of Research

Based on the classification of research design, this research is classified into quantitative type. Quantitative research is a research that explains causal relationship among variables. The analysis technique is Structural Equation Modeling-Partial Least Squares (SEM-PLS). Two kinds of variable are examined in this research. One of them is variable that its value cannot be measured or known quantitatively (latent), or construct that becomes variable and has quantitative value at certain measuring unit. Variable in such kind is known as unobserved variable. The other kind is the indicator of variable that is used to measure latent variable or unobserved variable. This measurer is called as observed variable. Variable that cannot be measured directly (latent) comprises exogenous and endogenous latent variables. In relation with this research, there are three exogenous latent variables, namely: (1) Entrepreneurial Orientation (EO); (2) Education (E); and (3) Technology Orientation (TO). Meanwhile, endogenous latent variable is Market Orientation (MO). Hypothesis frame design is visualized in the following.

Fig. 1. Hypothesis frame model

3.2. Target Population and Sample Unit

Population target of this research is the entrepreneurs of Small-and-Medium Enterprises in East Java. Sample is taken with simple random sampling where each sample of SMEs is simply taken from the predetermined region, precisely where SMEs are located. Sample size is determined using Malhotra Technique (Malhotra, Nunan, & Birks, 2017, p. 712). This technique takes the number of samples at least five to ten times the number of indicator of SMEs population in East Java. Reason why this technique is used is that the actual number of target population is unknown, and that number of SMEs is always growing and many of them are not registered (not yet updated) in the Department of Cooperative and SMEs for East Java Province. Early assumption for this issue is that one indicator is represented by one item in questionnaire. If there are twelve indicators, and if these indicators are multiplied by 10, then the minimal number of samples would be 120 SMEs entrepreneurs. Total questionnaire distributed to respondents is 170 sheets, while questionnaire returned to researcher is 150 sheets. Therefore, the response rate is 88.24% and all the returned questionnaires are used for data analysis.

3.3. Research Instrument

The instrument of research is closed questionnaire with four-interval Likert Scale. Scoring system arranges respondents’ answers into four answer alternatives. The blueprint of research instrument is displayed in Table 1 as follows.

Table 1

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>Instrument</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Education (E)</td>
<td>Questionnaire</td>
<td>Education level</td>
</tr>
</tbody>
</table>
| 2.  | Entrepreneurial Orientation (EO) | Questionnaire | a. Innovation on new product and new strategy  
b. Proactiveness in solving business issue  
c. Dare to take risk |
| 3.  | Technology Orientation (TO) | Questionnaire | a. Technology novelty  
b. Business innovation |
| 4.  | Market Orientation (MO) | Questionnaire | a. Be active in taking intelligence from customers  
b. Be active in taking intelligence from competitors  
c. Distribute information derived from market intelligence  
d. Keep abreast of market development  
e. Be responsive to customer complaint  
f. Be responsive to what competitors do |

EO

TO

E

MO
3.4. Data Collection Technique

For the interest of research, researcher collects the data using survey instrument, which more popularly regarded as questionnaire.

3.5. Data Description

Data analysis and hypothesis test are done using SEM-PLS. Such analysis method is aimed to conduct a testing whether independent variable (not affected by other variable, or called as exogenous variable) affects dependent variable (affected by other variable, or called as endogenous variable). Data analysis process is facilitated by computer program named Smart-PLS Version 3.2.7. This research decides to use Partial Least Square (PLS) for data analysis because research attempts to examine the contribution of data to the causal relationship of latent variables. Two considerations are interposed for the selection for PLS. One of them is because this research uses four latent variables, while the other is because the sample is in small category. Path diagram of research model is visualized in Fig. 2.

Hypothesis test in PLS method is done using resampling bootstrap (Jaya & Sumertajaya, 2008, p. 126). Significance level test is done to understand the comparison between t-statistic and t-table values. If t-statistic (t-count) value is ≥ t-table (≥ 1.96), or when the output of Smart-PLS shows P-value ≤ 0.05, then the decision is rejecting \( H_0 \) and accepting \( H_a \) (Jogiyanto, 2011, pp. 72–73). In other words, exogenous variables (entrepreneurial orientation and technology orientation) are directly affecting endogenous variable (market orientation), which also signifies that there is obvious and significant effect of independent variables on dependent variable. There is moderation effect from Education (E) on Market Orientation (MO). This moderation effect is described through the influence of exogenous variables, namely Entrepreneurial Orientation (EO) and Technology Orientation (TO), on endogenous variable, that is, Market Orientation (MO) through moderation of Education (E). This moderation effect is tested using Baron and Kenney’s Norm, which says that moderation effect can be tested only if the direct effect (direct effect of exogenous variable on endogenous variable) is obvious and significant (Jogiyanto, 2011, p. 105). If the Norm is not fulfilled, moderation effect test cannot be proceeded.

4. Results

Hypothesis test is conducted after the implementation of Goodness of Fit test on Outer Model and Inner Model (Jogiyanto, 2011, pp. 72–73). The process of Goodness of Fit test is assisted by computer program of Smart-PLS version 3.2.7, and the results are presented in figures and tables in the following sections.

4.1. Goodness of Fit Test on Outer Model

Result of Goodness of Fit test on Outer Model consists of few components, such as: (1) convergent validity, which is determined based on value of (a) correlation across construct indicators (factor loading rate) and (b) AVE; (2) discriminant validity, which is determined based on cross loading rate; and (3) reliability, which is obtained through composite reliability test. Results of convergent validity test for factor loading rate are illustrated in Fig. 3.
Results of convergent validity test for AVE are shown in Table 2 as follows:

Table 2
Results of AVE recapitulation

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>1.000000</td>
</tr>
<tr>
<td>EO</td>
<td>0.825733</td>
</tr>
<tr>
<td>MO</td>
<td>0.780975</td>
</tr>
<tr>
<td>TO</td>
<td>0.904997</td>
</tr>
</tbody>
</table>

Results of discriminant validity for cross loading rate are presented in Table 3. Reliability test on variables is conducted by determining composite reliability, and the result is indicated in Table 4.

Table 3
Results of cross loading rate recapitulation

<table>
<thead>
<tr>
<th>Cross Loading Rate</th>
<th>Education</th>
<th>Entrepreneurship Orientation</th>
<th>Technology Orientation</th>
<th>Market Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>1.000000</td>
<td>0.89569</td>
<td>0.898367</td>
<td>0.928774</td>
</tr>
<tr>
<td>EO.1</td>
<td>0.867899</td>
<td>0.962618</td>
<td>0.90138</td>
<td>0.931087</td>
</tr>
<tr>
<td>EO.2</td>
<td>0.711193</td>
<td>0.864862</td>
<td>0.807571</td>
<td>0.840533</td>
</tr>
<tr>
<td>EO.3</td>
<td>0.857043</td>
<td>0.899936</td>
<td>0.832312</td>
<td>0.880427</td>
</tr>
<tr>
<td>TO.1</td>
<td>0.922206</td>
<td>0.965408</td>
<td>0.959958</td>
<td>0.978149</td>
</tr>
<tr>
<td>TO.2</td>
<td>0.775492</td>
<td>0.79663</td>
<td>0.94259</td>
<td>0.820543</td>
</tr>
<tr>
<td>MO.1</td>
<td>0.731835</td>
<td>0.86604</td>
<td>0.847334</td>
<td>0.870818</td>
</tr>
<tr>
<td>MO.2</td>
<td>0.856735</td>
<td>0.838849</td>
<td>0.804077</td>
<td>0.875075</td>
</tr>
<tr>
<td>MO.3</td>
<td>0.85527</td>
<td>0.816597</td>
<td>0.760298</td>
<td>0.868378</td>
</tr>
<tr>
<td>MO.4</td>
<td>0.874967</td>
<td>0.872877</td>
<td>0.932367</td>
<td>0.909315</td>
</tr>
<tr>
<td>MO.5</td>
<td>0.905378</td>
<td>0.918124</td>
<td>0.887382</td>
<td>0.935577</td>
</tr>
<tr>
<td>MO.6</td>
<td>0.688354</td>
<td>0.848198</td>
<td>0.78444</td>
<td>0.839959</td>
</tr>
</tbody>
</table>

Table 4
Summary of composite reliability calculation

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>1.000000</td>
</tr>
<tr>
<td>EO</td>
<td>0.934169</td>
</tr>
<tr>
<td>EO * E</td>
<td>0.996046</td>
</tr>
<tr>
<td>MO</td>
<td>0.955293</td>
</tr>
<tr>
<td>TO</td>
<td>0.950126</td>
</tr>
<tr>
<td>TO * E</td>
<td>0.996075</td>
</tr>
</tbody>
</table>

4.2. Result of Goodness of Fit Test on Inner Model

Result of Goodness of Fit test on Inner Model is indicated by R-Square value ($R^2$). The obtained $R^2$ value from the test is shown in Table 5.
Complete recapitulation of results of *Goodness of Fit* test are explained in Table 6. Referring to Table 5, it can be said that in general, all criteria of *Goodness of Fit* are already fulfilled, which it prevails for both *outer model* (Hair et al., 2017, p. 107) and *structural (inner) model* (Hair et al., 2017, p. 186). Based on the results of *Goodness of Fit* test, research model is considered as fit and therefore, hypothesis test can be implemented.

### Table 6
Recapitulation of Goodness of Fit Test on All Models

<table>
<thead>
<tr>
<th>Goodness of Fit</th>
<th>Parameter</th>
<th>Rule of Thumbs</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer Model</td>
<td>Convergent Validity</td>
<td>Factor Loading AVE</td>
<td>Factor loading of all indicators must be &gt; 0.7</td>
</tr>
<tr>
<td>Discriminant Validity</td>
<td>Cross Loading</td>
<td></td>
<td>Factor loading of all indicators in one latent variable must be greater than cross loading of other latent variable.</td>
</tr>
<tr>
<td>Structural (Inner) Model</td>
<td>R² Evaluation</td>
<td>R² Value</td>
<td>R² &gt; 0.25</td>
</tr>
</tbody>
</table>

(Source: Result of Analysis with Smart-PLS)

#### 4.3. Results of Hypothesis Test

Hypothesis test is carried out using *bootstrapping* method available in computer program of Smart-PLS version 3.2.7. Alternative hypothesis (Ha) is accepted if t-count value ≥ 1.96 (Hair et al., 2017, p. 186). The recapitulation of results of t-test (t-count) from direct effect test is explained in detail in Table 7.

### Table 7.
Summary of t-count results from direct effect test

<table>
<thead>
<tr>
<th>No</th>
<th>Direct Effect</th>
<th>Hypothesis</th>
<th>Path Coeff.</th>
<th>t-count</th>
<th>Decision</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>EO on MO (EO -&gt; MO)</td>
<td>H₀: γ₁₁ = 0 Hₐ: γ₁₁ ≠ 0</td>
<td>0.287345</td>
<td>2.046967</td>
<td>H₀ is rejected, Hₐ is accepted</td>
<td>The effect is positive and significant.</td>
</tr>
<tr>
<td>2.</td>
<td>TO on MO (TO -&gt; MO)</td>
<td>H₀: γ₂₁ = 0 Hₐ: γ₂₁ ≠ 0</td>
<td>0.431385</td>
<td>2.409892</td>
<td>H₀ is rejected, Hₐ is accepted</td>
<td>The effect is positive and significant.</td>
</tr>
</tbody>
</table>

(Source: Result of Analysis with Smart-PLS Program at significance level (α) of 5%)

As shown in Table 7, both Variable TO and Variable EO have obvious and direct effect on Variable MO. Baron and Kenny’s Norm (Hair et al., 2017, p. 222) requires that moderation (mediation) test can only be conducted if the direct effect is significant. In relation with the Norm, it can be said that (1) hypothesis test against moderation effect of Variable E to the influence of Variable TO on Variable MO, can be implemented; and (2) hypothesis test against moderation effect of Variable E to the influence of Variable EO on Variable MO, can be executed. The process of hypothesis test is facilitated by *bootstrapping* method available in Smart-PLS version 3.2.7. Recapitulation of results of t-statistic (t-count) from moderation effect test is given in Table 8.

### Table 8
Recapitulation of t-count results from moderation effect test

<table>
<thead>
<tr>
<th>No</th>
<th>Indirect Effect</th>
<th>Hypothesis</th>
<th>Path Coeff.</th>
<th>t-count</th>
<th>Decision</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>EO on MO moderated by E (EO*E -&gt; MO)</td>
<td>H₀: γ₁₁<em>γₐ₁ = 0 Hₐ: γ₁₁</em>γₐ₁ ≠ 0</td>
<td>1.284857</td>
<td>2.5023</td>
<td>H₀ is rejected, Hₐ is accepted</td>
<td>The effect is positive and significant.</td>
</tr>
<tr>
<td>2.</td>
<td>TO on MO moderated by E (TO*E -&gt; MO)</td>
<td>H₀: γ₁₁<em>γₐ₁ = 0 Hₐ: γ₁₁</em>γₐ₁ ≠ 0</td>
<td>-0.862887</td>
<td>1.3171</td>
<td>H₀ is accepted, Hₐ is rejected</td>
<td>The effect is negative but not significant.</td>
</tr>
</tbody>
</table>

(Source: Result of Analysis with Smart-PLS Program at significance level (α) of 5%)

The summary of results of *bootstrapping* method in determining t-statistic (t-count) is visualized in Fig. 3.
Discussion

5.1. The Influence of Entrepreneurial Orientation on Market Orientation

Entrepreneurial orientation of the entrepreneurs of Small-and-Medium Enterprises in East Java Province has obvious effect on market orientation. In other words, entrepreneurial orientation can improve market orientation of SMEs and this improvement is statistically significant. Small-and-Medium Enterprises are a kind of business unit and entrepreneurial orientation helps them to get better performance (Cantaleano, Rodrigues, & Martins, 2018, p. 6). Business units with entrepreneurial orientation tend to be innovative, proactive in capturing opportunity, and dare to take risk (Felgueira & Rodrigues, 2012, p. 704). Moreover, other element in entrepreneurial orientation is dynamic capability, and this capability enables business units to solve problems that they have identified after detecting opportunities and threats, and responding what market demands in the future (Felgueira & Rodrigues, 2012, p. 706; Tan, 2016, p. 95). Small-and-Medium Enterprises with greater focus on entrepreneurial orientation are always giving more emphasis on market orientation. Basically, entrepreneurial orientation is absolutely needed by business units to answer the demands of market and entrepreneurs, and also to satisfy customers (Huang & Wang, 2011, p. 69).

5.2. The Influence of Technology Orientation on Market Orientation

Empirical finding shows that technology orientation that East Java SMEs entrepreneurs have is positively and significantly affecting market orientation. Therefore, it is then said that technology orientation can improve market orientation of East Java SMEs. One external factor of market orientation is technology (Tomaskova, 2007, p. 82). Consumers tend to choose products that use the latest technology (Ali et al., 2016b, p. 2). Market orientation keeps business units focusing on the use of the latest technology in every business activity (Tomaskova, 2007, p. 82). The use of the latest technology must be comparable to market demand because business units can only survive in the market if their response to new technology is favored by market (Frambach, Fiss, & Ingenbleek, 2016, p. 1430). Technology capability that business units have can improve their innovation on products (Urban & Heydenrych, 2015, p. 126). Besides, business units with technology orientation will get competitive advantages after they use their technology, and by this technology, they can offer more innovative products (Ali et al., 2016a, p. 2).

5.3. The Moderation Effect of Education to the Influence of Entrepreneurial Orientation on Market Orientation

Empirical finding explains that education does not act as moderation variable to the influence of entrepreneurial orientation on market orientation. Therefore, it can be said that education does not have negative effect on market orientation, which is probably because East Java SMEs already take entrepreneurial orientation into their consideration. Activeness of SMEs in the market depends on how they compete and grow one another to fulfill market demand that always develops (Frishammar & Hörte, 2007, p. 765). Small-and-Medium Enterprises can survive longer in business competition if they can translate market demand properly and have strategic orientation to fulfill this demand (Acosta, Crespo, & Agudo, 2018, p. 1128). If SMEs can apply entrepreneurial values such as innovation, dare to take risk, and aggressive in market competition, then they will have higher market orientation and get their performance increased (Jangl, 2015, p. 166; Rajagopal, 2017, p. 1; Ruzfgar, Kocak, & Ruzgar, 2014, p. 19). Small-and-Medium Enterprises with high focus on entrepreneurial orientation always do a continuous examination on their products and services. It is done to ensure that consumers will get the best service (Hidayat, Suryana, Afiff, & Cahyanidjo, 2016, p. 612). This activity surely needs the capability to understand market shares, and reliable education is a requirement in this point. If SMEs disregard education level and organizational learning in their business units, then they will see the innovation declining, which then put difficulty to them to focus on entrepreneurial orientation, and consequently, it may weaken their market orientation (Amin, 2015, p. 219).
5.4. The Moderation Effect of Education to the Influence of Technology Orientation on Market Orientation

Empirical finding indicates that education is acting as a moderation variable in the influence of technology orientation on market orientation. It can be said that education can give negative effects on market orientation of East Java SMEs if technology orientation is taken into account. Low market orientation can produce suboptimal income, which may prevent SMEs from maximizing their technology. Moreover, majority of workers at SMEs have low education level, and therefore, these workers are difficult to apply new technology desired by the market. So far, East Java SMEs suffer from technology limitation due to financial distress (Riwayati, 2017, p. 718). Technology in these SMEs is often unreliable (Munizu et al., 2016, p. 216) and therefore, their technology innovation is not quite promising (Susanto & Wasito, 2017, p. 282). As consequences, technology orientation is often not considered in Indonesian SMEs’ plans, and this clearly defies the fact that technology orientation is one of the most important aspects in production process of business units (Tomaszuk, 2017, p. 701). Previous studies already reported that technology orientation can improve market orientation (Ali et al., 2016a, p. 1; Tomaskova, 2007, p. 81). If the influence of technology orientation is suboptimal, it is possibly associated with low education level of SMEs’ workers. Human resource is one factor that determines business units’ success, and education is one important attribute of human resource (Nawawi, Husin, & Wiryawan, 2017, p. 1). Human resource with high education level is considered more able to implement organizational learning (Pantouvakis & Bouranta, 2013, p. 52), and education becomes very important when workers are required to use new technology (Carruth & Carruth, 2013, p. 513) and when business units find it necessary to optimize SMEs’ performance (Thomas et al., 2017, p. 3). After all, it can be said that high education level among the workers can enable SMEs to attain market orientation.

6. Conclusion and Suggestion

Referring to the formulated problems and what this research wants to address, and also pursuant to the empirical findings and the interpretations previously presented, therefore, some conclusions are generated:

1. Entrepreneurial orientation developed by Small-and-Medium Enterprises in East Java has obvious effect on market orientation, precisely that entrepreneurial orientation can improve market orientation.
2. Technology orientation built by Small-and-Medium Enterprises in East Java has obvious and significant effect on market orientation.
3. Education level of SMEs’ entrepreneurs strengthens the influence of entrepreneurial orientation on market orientation.
4. Education level can reduce the influence of technology orientation on market orientation, but this reduction is not significant statistically.

The entrepreneurs of SMEs are eager to improve their market orientation, and therefore, it is suggested that:

1. The entrepreneurs of SMEs give more focuses on improving entrepreneurial orientation. It may be started from encouraging workers to be more innovative and to dare to take risks, although these still remain under control and discretion of the manager.
2. Technology orientation can be improved by giving training about the latest technology and the upgrade of the existing technology. This training is the early step for SMEs in adapting with the latest market demand.
3. Education level of SMEs’ human resource can be improved by ensuring that workers are already highly educated, and also by giving training to the existing workers to obtain the best outcomes, especially training about how to use the latest technology.

References


