
Maretta Ginting¹, Hasan Basri Tarmizi², Endang Sulisty Rini¹, Yeni Absah¹

¹Department of Management, Universitas Sumatera Utara, Jl. Prof. T.M Hanafiah, SH, Kampus USU, Medan, Indonesia
²Department of Regional Planning Universitas Sumatera Utara, Jl. Prof. T.M Hanafiah, SH, Kampus USU, Medan, Indonesia


Abstract: Competitiveness of Indonesian agricultural commodity products requires more attention from stakeholders. The problems faced by farmers and traders of horticulture products are still low competitiveness. Horticultural products have not been able to compete with agricultural products from ASEAN countries such as Thailand and Malaysia. In a competitive marketplace, social approaches and social attributes and sustainability levels of competitive advantages are, among others, explained through the RBT-resource-based theory of the firm's approach. The purpose of this study is to investigate the effect of several constructs such as social capital, business environment, product innovation towards sustainable competitive advantage. The present study used a quantitative approach based on structural equation modeling (SEM) analysis. The number of samples was 500 farmers from Karo Regency, North Sumatra, Indonesia. The empirical evidence indicates that social capital has an insignificant effect on product innovation. The business environment has a significant effect on product innovation. Social capital has an insignificant effect on sustainable competitive advantage. The business environment has a significant effect on sustainable competitive advantage. The product innovation has a significant effect on the sustainable competitive advantage of horticultural products through product innovation. Social capital has an insignificant effect on the sustainable competitive advantage of horticultural products through product innovation. The ability to adopt technology should be in line with the ability to respond to the movement of market behavior. Therefore, the role of farmers is expected to be more proactive in observing the direction of changes in the horticultural product market behavior. Export market access is required and standardize product according to market demand. Therefore, learning is needed to empower farmers to achieve a target market that has broad coverage.

1 INTRODUCTION

Competitiveness of Indonesian agricultural commodity products requires more attention from stakeholders. Facts indicate an effort to improve the competitiveness of Indonesian agricultural products which has been underestimated in the mind and creativity aspects which are the primary capital to increase competitive advantage. (Haryono, 2013). It is possible that Karo district has the highest agricultural potential of all provinces in Indonesia. The majority of people work as professional farmers. Working as a farmer has a purpose other than fulfilling daily living needs, the results of their farming commodities have been marketed to other areas.

In the highlands of Karo's land has the beauty of mountain nature with the coolness of the air and it has a characteristic of fruit and vegetable area. Among the area's horticultural products there are some products that most contribute to farmers in Karo District. The results of the horticulture products are 324,200 tons of orange, 92,551 tons of cabbage, 42,089 tons of carrots, 7,000 tons of coffee, and 4,829 tons of passion fruit. (With Data Statistic, 2017).

The problems faced by farmers and traders of horticulture products are still low competitiveness. Horticultural products have not been able to compete...
with agricultural products from ASEAN countries such as Thailand and Malaysia. Zimmere and Scarborough (2005) believe that in order to win the competition, it is necessary to build a sustainable competitive advantage for all product outcomes. Sustainable competitiveness is interpreted as a value that the company can create for consumers. This sustainable competitive advantage is also seen from the suitability and accuracy of providing products in the market and responds to consumer complaints such as product quality, consumer needs, new market share and continuous product innovation (Aditya, 2004).

Syahyuti (2008) believes that social capital is proven to grow and accumulate over time and significantly affect the performance of the agricultural commodities trading system. Suriatna and Ardianti (2013) in their paperwork state that there is a link between social capital and product innovation and all indicators of the two variables are interconnected. Other scholars such as Muin (2013) have investigated business capabilities, social capital and its implications for the performance of SMEs in the industrial sector in South Sulawesi. The empirical results indicate that social capital has a positive and significant effect on the performance of small microenterprises in South Sulawesi. Furthermore, Rapih (2015) recognizes social capital variables have a positive and significant effect on SMEs' performance where performance measurement is seen by profit growth, customer growth, sales volume growth, and asset growth. Wambugu et al. (2009) found empirical evidence of social capital has a positive influence on the performance of small organizations, including marketing performance.

The success of an industry depends on industrial relations with its environment (Porter, 1981). Amit and Schoemaker (1993) also believe the organization should be able to adapt to the environment because of rapidly changing environmental and technological advances to achieve competitive advantage. Luo, Yadong (1999) mentions the impact of the dynamics of a competitive environment has influenced innovative, courageous risk-taking, and corporate activity. In the ever-changing environment, Slater & Narver (1997) recognizes the determination by creativity and innovation to enable it to capture customer satisfaction over competitors (Dicky, 2002). Furthermore, some research results (such as Sinkovicces, 2004; Nurbakogah, 2009) report environmental adaptability dimensions that affect competitive advantages. As with Mc Carthy & Perreault (1996), their research confirms the factors that determine the competitive advantage, among others, the rate of change, the number of products, the speed to enter the market. Other scholars, such as Meutia (2013), highlight the ability to adapt to changing business environment and competitive advantage. Furthermore, the innovation and technology adopted by the company more appropriate have become a factor to achieve competitive advantage. The recent research from Daiya Isogawa et al., (2012) emphasizes that product innovation has a significant effect on the marketing performance of a company. Companies with new product innovations tend to achieve high sales of new products, and are less likely to suffer from cannibalizing effects. Sugiyarti (2015) agreed that product innovation had a significant effect on competitive advantage. Companies that implement product innovation systems tend to increase the SMEs’s competitive advantage. Scholars such as Droge and Vickey (1994) recognize product innovation is a source of competitive advantage. Companies capable of designing their products in line with customer's desire tend to survive in the midst of tight competition, as their products are still in demand for customers.

Luke and Ferrel (2000) recognize that marketing and innovation are seen as a driver of economic growth and a primary component of competitive advantage. Nelly et al. (2001) believe product innovation demonstrates the development and recognition of new or improved products that are successful in marketing. Drucker 1954, Berthon et al. 1999 acknowledged that product innovation is a potential thing to create a mindset that ultimately satisfies customer satisfaction. Dourgerty (1996) notes product innovation is a relevant way for companies to grow and tends to adapt to markets, technology, and competition.

2 LITERATURE REVIEW

2.1 Social Capital

The social capital concept was reintroduced by Putnam (1993) when researching in Italy in 1985. The concept of social capital has been widely discussed in social sciences over the last year (Field, 2010). One of the resources that might provide a competitive advantage is the resources developed through social approaches known as social capital (Coleman, 1988). In a competitive marketplace, social approaches and social attributes and sustainability levels of competitive advantages are, among others, explained through the RBT-resource-based theory of the firm's approach as seen in various studies undertaken by academics, among others; (Amit & Schoemaker:

2.2 Business Environment

Knowledge of competitive environments can encourage creativity, and the reason is environmental knowledge analyzing highlighted opportunities and weaknesses that should be calculated (Menon et al., 1999; Mudiantono & Khamidah, 2005). Competition intensity (Birchall et al., 1996) environmental competition (Kim et al., 1993) and Hadjimanolis, 2000), is a measure of market innovation. Environmental changes related to uncertainty and dynamics (Damanpour, 1996; and Hadjimanolis, 2000).

According to Amit et al. (1993) innovation is an interactive process, seen from the network of economic relationships in its business environment including changes in its resources. The business environment has a strong influence on corporate organizations, especially when the business world is unlimited by a borderless world, (Hunger, Wheelen: 2007, Brooks: 1997). Companies that have successfully adapted to the level of adaptability and high flexibility with the surrounding business environment, show good performance over companies that do not succeed in aligning the low level of flexibility strategy (Beal: 2000, Elenkov: 1997).

A company that lays down to survive and exits to become a winner in a competitive business should create a company-oriented policy pattern to achieve a competitive advantage in the future (Barlett, Ghoshal: 1999).

2.3 Product Innovation

Kotler (2007) defines product innovation as a combination of various processes that interact with each other. Nasution (2005) recognizes product innovation as a new product or service introduced into the market. Product innovations are categorized as new products for the world, new product lines, additions to existing product lines, revisions of existing products, re-determination and cost reduction (Nasution, 2005). Hadjimanolis (2000) suggests that leadership capabilities, company capabilities, and environmental factors are more influential on product innovations that will be undertaken by the company. Indriani and Prasetyowati (2008) in his research show that innovation along with leadership capabilities, company capabilities and engagement have a positive and significant effect on product innovation that ultimately affects corporate performance. Companies that focus on innovation in services are more capable of success in product marketing that ultimately contributes to improved performance (Eisingerich, Rubera, and Seifert, 2009).

According to a survey by Taghizadeh and Rahman (2013), there is some information available about the impact of innovation on the success of the company, especially in the manufacturing sector. Research on the impact of innovation on company performance has been studied by scholars such as Cetindamar & Ulusoy, 2008; Gunday et al., 2011; Lin et al., 2010).

2.4 Sustainable Competitive Advantage

In a company, there are two sources of competitive advantage that are: superior skills and superior resources as stated by Day and Wensley (1998). Barney (1991) reveals that there are four things that can be applied to produce sustainable competitive advantage are value, rareness, inability to be imitated, and imperfect substitution. O'Shannassy (2008) outlines resources with four (four) valuable, rare, implicit attributes, no strategic resources that are strategically equivalent to a company; and strategy resources help the company achieve and sustain a Sustainable Competitive Advantage. RBV's theory states that sustainable competitive advantages rely on highly valuable, rare, imperfect and non-substitutable (VRIN) organizational resources (VRIN) in organizational settings with policies and procedures for exploiting Barney resources, 1991; Barney & Clark, 2007; Knott, 2003; Kraaĳenbrink, Spender, & Groen, 2010). Based on the resource-based view, the organization can define the strategies it will perform following organizational capabilities. (Purnomo, 2013).

Based on prior works and grounded theoretically. The authors proposed the hypotheses developed as follows:

H1: Social capital has a positive and significant effect on the innovation of horticulture products.

H2: Business environment has a positive and significant effect on innovation of horticulture products.

H3: Social capital has a positive and significant effect on the competitive advantage of horticulture products.

H4: Business environment has a positive and
significant effect on the competitive advantage of horticulture products.
H5: Product innovation has a positive and significant effect on the sustainable competitive advantage of horticulture products.
H6: Social capital has a positive and significant effect on sustainable competitive advantage through the innovation of horticulture products.
H7: Business environment has a positive and significant effect on sustainable competitive advantage through the innovation of horticulture products.

3 METHOD

The present study uses a quantitative approach based on structural equation modeling (SEM) analysis with some exogenous variables and endogenous variables. SEM is part of the multivariate dependent statistic; SEM allows analysis of several dependent and independent variables directly (Hair et al., 1995). Ghozali (2008) notes that PLS is a powerful analysis method since it is not based on many assumptions. This research was conducted in Karo Regency, North Sumatra, Indonesia. Data on the source research from primary data and secondary data. Data also does not have to have normal multivariate distributions (indicator with category scale, ordinal, interval until ratio can be used on the same model) the sample should not be large. Software used in this research is WarpPLS. Mahfud and Ratmono (2013: 7) stated that SEM-PLS allows work efficiently with small sample sizes and complex models. Also, the assumption of data distribution in SEM-PLS relative is more flexible than CB-SEM.

4 RESULTS AND DISCUSSION

4.1 Results

4.1.1 Direct Effect

The direct effects between the variables have been shown on the path coefficients in the structural model. The value of path coefficients among variables is presented in the table below.

<table>
<thead>
<tr>
<th>Table 1. Direct Effect</th>
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<tbody>
<tr>
<td>Original Sample (O)</td>
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<td>T Statistics (</td>
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<tr>
<td>Business Env -&gt; Product Inov</td>
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<tr>
<td>Business Env -&gt; SuComp Adv</td>
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<tr>
<td>Product Inov -&gt; SuComp Adv</td>
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<tr>
<td>Social Capital -&gt; Product Inov</td>
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<tr>
<td>Social Capital -&gt;SuComp Adv</td>
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4.1.2 Indirect Effect

Indirect effects are the number of influences through variable intermediaries. The indirect-effect of business environment on sustainable competitive advantage through product innovation is equal to $0.918 \times 0.377 = 0.346$.

The summarize of indirect effects, direct effect and total effect will present in Table 3 below.

<table>
<thead>
<tr>
<th>Table 2. Indirect Effect</th>
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<tr>
<td>Original Sample (O)</td>
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<td>T Statistics (</td>
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<tr>
<td>Business Env -&gt; Product Inov -&gt; SuComp Adv</td>
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<tr>
<td>Social Capital -&gt; Product Inov -&gt; SuComp Adv</td>
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</tbody>
</table>

4.1.3 Total Effect

Total effect generated from the analysis of the structural model in the study is the sum of direct effects and indirect effect. The total effect result (business environment on sustainable competitive advantage through product innovation) is equal to $0.525 + 0.346 = 0.871$.
Table 3. Summary of Research Variable Effects

<table>
<thead>
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<th>Direct Effect</th>
<th>Indirect Effect</th>
<th>Total Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Env -&gt; Product Inov</td>
<td>0.918</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Env -&gt; SuComp Adv</td>
<td>0.525</td>
<td>0.346</td>
<td>0.871</td>
</tr>
<tr>
<td>Product Inov -&gt; SuComp Adv</td>
<td>0.377</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Capital -&gt; Product Inov</td>
<td>0.074</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Capital -&gt; SuComp Adv</td>
<td>0.050</td>
<td>0.028</td>
<td>0.078</td>
</tr>
</tbody>
</table>

4.1.4 Hypotheses Testing

Table 4. Results of Hypotheses Test

|                                | Original Sample (O) | T Statistics (|O/STDEV|) | P Values | Conclusion |
|--------------------------------|---------------------|----------------|----------|------------|
| Business Env -> Product Inov   | 0.918               | 8.113           | 0.000    | Accepted   |
| Business Env -> SuComp Adv     | 0.871               | 3.870           | 0.000    | Accepted   |
| Product Inov -> SuComp Adv     | 0.377               | 2.774           | 0.006    | Accepted   |
| Social Capital -> Product Inov | 0.074               | 0.779           | 0.437    | Rejected   |
| Social Capital -> SuComp Adv   | 0.078               | 0.542           | 0.588    | Rejected   |
| Business Env -> SuComp Adv     | 0.346               | 2.682           | 0.008    | Accepted   |
| Social Capital -> SuComp Adv   | 0.028               | 0.873           | 0.383    | Rejected   |

4.2 Discussion

4.2.1 The Effect of Social Capital on the Sustainable Competitive Advantage of Horticultural Products

The empirical findings show that t-statistics value is lower than the t-table value. The t-statistics value is 0.779, and the t-table value is 1.96. (0.779 < 1.96) and sig value (0.437 > 0.05). The results indicate that social capital has an insignificant effect on product innovation. Contrary to the empirical findings by Suriatna and Ardianti (2013) which have stated that there is a link between social capital and product innovation. Hence, the authors concluded that the hypothesis proposed is rejected.

4.2.2 The Effect of Business Environment on the Innovation of Horticultural Products

The empirical evidence indicates that t-statistics value is higher than the t-table value. The t-statistics value is 8.113, and the t-table value is 1.96. (8.113 > 1.96) and sig value (0.000 <0.05). The results indicate that the business environment has a significant effect on product innovation. Therefore, the authors concluded that the hypothesis proposed is accepted. The empirical findings are consistent with the research results by (2000), which found a positive influence on the business environment on innovation, a faster environmental change has demanded companies to adapt quickly with continuous improvements through innovations. The competition environment affects the number and type of competitors that entrepreneurs face. Knowledge of competitive environments can encourage creativity, as knowledge of the competing environment controlled by entrepreneurs makes them aware of the opportunities that can be highlighted and the weaknesses that are calculated (Menon et al., 1999). The study also recognizes previous research results such as Birchall et al., (1996), Kim et. al, (1993); and Hadjimanolis, (2000) have found positive influences between the business environment and innovation, including product innovation, competition intensity, and environmental competition, and are a measure of the market for innovation.

4.2.3 The Effect of Social Capital on the Sustainable Competitive Advantage of Horticultural Products

The empirical findings show that t-statistics value is lower than the t-table value. The t-statistics value is 0.542, and the t-table value is 1.96. (0.542<1.96) and sig value (0.588>0.05). The results indicate that social capital has an insignificant effect on sustainable competitive advantage. Therefore, the authors concluded that the hypothesis proposed is rejected. Contrary to the empirical findings by Pastoriza (2009) and Khamimah and Suyati (2015) find that there is a social capital effect that consists of networking, trust and commitment to the competitive advantage of Small and Medium Enterprises. If the network, trust and commitment to a Small Medium Enterprises increase, there will be an increase in the competitive advantage of the Small Medium Enterprises. Social capital is a source of sustainable competitive advantage of a company that can describe the quality of relationships in a business and measures inter-member relationships.
4.2.4 The Effect of Business Environment on the Sustainable Competitive Advantage of Horticultural Products

The empirical evidence indicates that t-statistics value is higher than the t-table value. The t-statistics value is 3.870, and the t-table value is 1.96. (3.870 > 1.96) and sig value (0.000 < 0.05). The results indicate that the business environment has a significant effect on sustainable competitive advantage. Therefore, the authors concluded that the hypothesis proposed is accepted. This research findings support previous research such as work by Beal, (2000); Sinkovics, (2004), Nurbokah, (2009) where they highlight the relevance of corporate environmental adaptability and sustainable competitive advantage. These findings also recognize the results of work from Meutia (2013) which have found that there is significant influence between adaptability to changing business environment and competitive advantage. Ability to adapt and rapid external environment changes is a factor to enhance competitive advantage.

4.2.5 The Effect of Product Innovation on the Sustainable Competitive Advantage of Horticultural Products

The empirical evidence indicates that t-statistics value is higher than the t-table value. The t-statistics value is 2.774, and the t-table value is 1.96. (2.774 > 1.96) and sig value (0.006 < 0.05). The results indicate that product innovation has a significant effect on sustainable competitive advantage. Therefore, the authors concluded that the hypothesis proposed is accepted. The research findings are in line with the findings of Sugiyarti (2015) which states that product innovation has a significant effect on competitive advantage. Companies that implement the product innovation system will increase the competitive advantage of small medium enterprises in rapidly changing environmental conditions. The paper worked by Slater and Narver (1997) believes that competitive advantage is determined by creativity and innovation that can satisfy customers’ expectations rather than competitors. Droge and Vickey (1994) found that product innovation was used as one of the sources of competitive advantage. Companies that are able to design their products according to customer’s desire to survive in the middle of competition because their products will remain attractive to customers.

4.2.6 The Effect of Business Environment on the Sustainable Competitive Advantage of Horticultural Products through Product Innovation

The empirical evidence indicates that t-statistics value is higher than the t-table value. The t-statistics value is 2.682, and the t-table value is 1.96. (2.682 > 1.96) and sig value (0.008 < 0.05). The results indicate that the business environment has a significant effect on the sustainable competitive advantage of horticultural products through product innovation. Therefore, the authors concluded that the hypothesis proposed is accepted.

4.2.7 The Effect of Social Capital on the Sustainable Competitive Advantage of Horticultural Products through Product Innovation

The empirical findings show that t-statistics value is lower than the t-table value. The t-statistics value is 0.873, and the t-table value is 1.96. (0.873 < 1.96) and sig value (0.383 > 0.05). The results indicate that social capital has an insignificant effect on the sustainable competitive advantage of horticultural products through product innovation. Hence, the authors concluded that the hypothesis proposed is rejected.

5 CONCLUSIONS & SUGGESTIONS

The empirical pieces of evidence indicate that social capital has an insignificant effect on product innovation. The business environment has a significant effect on product innovation. Social capital has an insignificant effect on sustainable competitive advantage. The business environment has a significant effect on sustainable competitive advantage. The product innovation has a significant effect on sustainable competitive advantage. The business environment has a significant effect on the sustainable competitive advantage of horticultural products through product innovation. Social capital has an insignificant effect on the sustainable competitive advantage of horticultural products through product innovation. The ability to adopt technology should be in line with the ability to respond to the movement of market behavior. Therefore, the role of farmers is expected to be more proactive in observing the direction of changes in the horticultural product market behavior. Export
market access is required and standardize product according to market demand. Therefore, learning is needed to empower farmers to achieve a target market that has broad coverage.

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