

The Dynamics of Performance Improvement among SMEs Clusters in East Java

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ABSTRACT

This study aimed to examine the dynamics of SMEs in small industrial clusters in East Java. The clustered SMEs are expected to harmonize their business strategies and cooperation in the form of inter-firm linkages which are a means of manifesting the social capital of clusters. To test the model, we employed SmartPLS3. The results revealed that inter-firm linkages affected performance of SMEs ($\beta = 0.351$, P-value = 0.002 at $\alpha = 5\%$) and this is able to intermediate the relationship between business strategies and SMEs' performance ($\beta = 0.583$, P-value = 0.000 at $\alpha = 1\%$). Meanwhile, the business strategies do not significantly improve SME performance. Thus, SMEs in a cluster should utilize social capital in the form of inter-firm linkages and business strategies in a balanced manner. Unfair competition must be eliminated to achieve better performance.

Keywords: *clusters of SMEs, inter-firm linkages, business strategies, SME performances*

1. INTRODUCTION

In Indonesia, researches on small industrial clusters have been conducted much. The researches commonly were carried out on business networks by Micro and Small Enterprises (MSEs) in clusters (Kuncoro and Supomo, 2003); institutional policies on SME clusters (Tambunan, 2005); and collective efficiency due to the presence of competition and cooperation in the cluster of MSEs (Hoetoro, 2014).

For SMEs, working in clusters has been intended to overcome various internal weaknesses that entangle them to develop properly. For example, in terms of access to external capital will be obtained more easily if they agglomerated (Keskin and Senturk, 2010); to integrate their products into a broader business system or network (Rothwell and Beesley, 1989); to develop stronger business networks with large companies (Harvie, 2007); and to advance innovation and company performance (Felzensztein, 2003).

Baptista and Swann (1998) asserted that a lot of researches on industrial clusters related to the dynamic process of introductory development through access, growth rates, and innovative activities. Meanwhile, the function of clusters in increasing a firm's innovation capacity lies in its ability to facilitate the exchange of information flow between the firms even though they remain in the competition. The impact of technology that can be freely accessed in the cluster encourages each company to raise their innovation capacity.

However, the effectiveness of SME clustering in East Java needs to obtain further research. In this regards, the study is intended to examine the dynamics between business

strategies and inter-firm linkages in obtaining SMEs' performance.

The first part of this study explores the topics of study, the objectives and its contributions. Second, the theoretical basis underlying this study is mainly related to the role of social capital in the dynamics of SME clusters. Third, this study describes the research method used. Fourth is the discussion of research results and fifth is concluded remarks.

2. LITERATURE REVIEW

2.1. *Inter-firm Linkages among Clustered SMEs*

Clustering for small industries was directed to obtain collective efficiency (Schmitz, 1995). This can be realized by the way each SME constructs inter-firm linkages either horizontally or vertically. In addition, the business relationship between firms must be strengthened by healthy competition for the development of innovation and the business scale of SME in clusters (UNIDO, 2010).

Porter (1990) defined clusters in practice as "groups of inter-connecting firms, suppliers, related industries and specialized institutions in particular fields that are present in particular locations". Clusters of SMEs then, the whole group of SMEs that mutually supporting in which benefits flow either horizontally or vertically. The information flow might be obtained through new approaches and a new entry from spin-offs among clustered SMEs.

In horizontal terms, SMEs carry out joint activities such as arrangements for product development, sharing the costs of special services or equipment, gathering marketing

information, and market supply (Henry et al., 1997). As such, many options are available for SMEs, including for target markets, up-grading, and contract with large companies. The benefits of horizontal linkage also provide SMEs with economies of scale and access to information and markets that are usually only available to large companies (Ayyagari, 2006).

In the same time, SME also vertically built inter-firm linkages with up and down stream firms. Mazzola and Bruni (2000) stated that vertical linkages refer to the relationships between companies providing inputs to other companies (backward linkage) or are used as product inputs from other companies to proceed with their business (forward linkage).

2.2. Business Strategy of SMEs

Business strategies that were implemented by SMEs have certain uniqueness. Kesper (1999) showed that because of limited access to related information, it caused the markets to be highly segmented. As a result, the entrepreneurs have to make many decisions along with their strategic choices. According to Kotey and Harker (1998), the contribution of SMEs depend on the individual performance of each firm that is determined by the strategies used in their business operations. In this context, because the strategy is informal, implicit, intuitive and incremental (Cragg et al., 2002), the conceptualization of business strategies for SMEs is very different from large companies. Therefore, Turgay and Kassegn (2005) argued that the strategic direction in small businesses is basically the same as the others except that small businesses face more difficult obstacles. They need to make strategic plans by assessing external opportunity and utilizing their unique abilities to their desired goals.

Business strategies of SMEs can be grouped functionally. In this regards, the strategic activities cover some fields such as marketing, finance, human resources, and production (Kotey and Harker, 1998; Ha, 2002). In addition, the business strategy adopted by SMEs is positioned between a proactive and reactive strategies.

2.3. SMEs' Performances

According to Maes et al (2002) that SMEs' performance is a continuous concern of policymakers, managers, and advisors. However, Ha (2002) pointed out that there are disagreements about the concept to assess the performance of SMEs. Chong (2008) argued that performance measurement of small firm can use financial and non-financial measures. For example, gross sales (Delmar, 1997) and gross profit (O'Regan et al., 2004) represent financial performance indicators and a number of employees (Moha Asri, 1999) denotes to non-financial performance indicator.

Above all, the data quality obtained from SMEs is another crucial issue. SMEs are usually reluctant to provide

objective measurements. So, Garg (2003) highlighted that subjective assessments can be used to interpret the data due to the difficulties in obtaining them objectively.

3. RESEARCH METHOD

This study utilized SmartPLS 3 which constructed a model that described the role of social capital in various SMEs' clusters in East Java. For this measurement, the model analyzed the dynamics of business strategy and inter-firm linkages among SMEs in achieving their performance. The chosen respondents distributed from various small industrial clusters in East Java. The research was conducted during September–October 2019. Table 1 presents the research samples from various regions in East Java as follows:

Table 1: Research samples

Regions	Type of Cluster	Number of Respondent
Mojokerto	Leather Shoes	15
Pasuruan	Teak Wood Furniture	15
Madura	Batik Handycraft	15
Sidoarjo	Leather Bags	20
Malang	Food Processing	10
	Ceramics	10
	Furniture	10
Total		95

Adopting from Kotey and Harker (1998) SME's business strategies (BS) were reflected by four latent variables with 16 indicators. Meanwhile, the inter-firm linkages (IL) represented by two latent variables with 8 indicators.

Hypotheses

Two hypotheses are presented as follows:

H₁: business strategy and inter-firm linkage significantly affect performance.

H₂: inter-firm linkage intermediate business strategy in achieving performances.

4. RESULTS AND DISCUSSION

4.1 Characteristics of the Respondents

There were 95 SMEs' owners who fulfilled the questionnaires as presented in Table 2. In terms of gender perspective, male entrepreneur seemingly still dominated small business sectors. Probably, this is related to the types of occupation they engage in.

Table 2 figured the details of the respondents as follows:

Table 2: Respondents' characteristics

Category	Frequency	%
Gender of entrepreneurs		
Male	68	71.58
Female	27	28.42
Firm's establishment		
1981 – 1990	13	13.68
1991 – 2000	22	23.16
2001 – 2010	33	34.74
2011 – 2020	27	28.42
Number of employees		
1–4 (micro firms)	39	41.05
5–19 (small firms)	36	37.89
20–99 (medium firms)	20	21.06
Total	95	100

Our research found that SMEs in clusters have paved long years ago. Since the year of 1980 they have existed and develop until now. This fact proved the survival of SMEs. Viewed from employee perspective, the firms were dominated by micro and small entrepreneurs (MSEs). One

of the definition of MSEs is an enterprises with 1-4 employees. The nature of cluster therefore differs from the large one.

4.2 Statistical Measurements

Table 3 presented the constructs of the model, dimensions, and their indicators. All items of indicators can be reviewed in the appendix.

Table 3: Constructs of the model

Constructs	Dimension	Items	Cronbach alpha
Performance	-	4	.906
Business strategy	Finance	4	.712
	Marketing	4	
	HRM	4	
	Production	4	
Inter-firm linkages	Horizontal	4	.843
	Vertical	4	

The statistics testing then lead to the elimination of several indicators so that the Cronbach's alpha, CR, and AVE values could meet the requirements. The cut off for Cronbach's alpha is 0.7, and for AVE is 0.5. We found that the statistical testing has satisfied the requirements. Table 4 displays the adjustment of measurements.

Finally, Smart PLS 3 calculation resulted in some findings and also answered the hypotheses as presented in Table 5 and Figure 1.

Table 4: The loadings (λ), CR, and AVE

Constructs	Items	λ	CR	AVE
Performance	Asset	.920	.933	.778
	Employees	.855		
	Order	.822		
	Sale	.869		
Business strategies	X ₂₃	.890	.823	.540
	X ₂₄	.895		
	X ₄₃	.820		
Inter-firm linkages	X ₄₄	.890	.822	.520
	X ₅₁	.764		
	X ₅₃	.837		
	X ₅₄	.761		
	X ₆₁	.801		
	X ₆₂	.838		
	X ₆₃	.865		
	X ₆₄	.834		

*: CR is Composite Reliability, and

AVE is Average Variance Extracted

Table 5: Hypotheses testing

Category	Mean	SD	P-values
BS → Performance	.065	.120	.582
IL → Performance IL intermediated	.356	.111	.002**
BS to performance	.578	.073	.000*

*: significant at 0.001 level

** : significant at 0.005 level

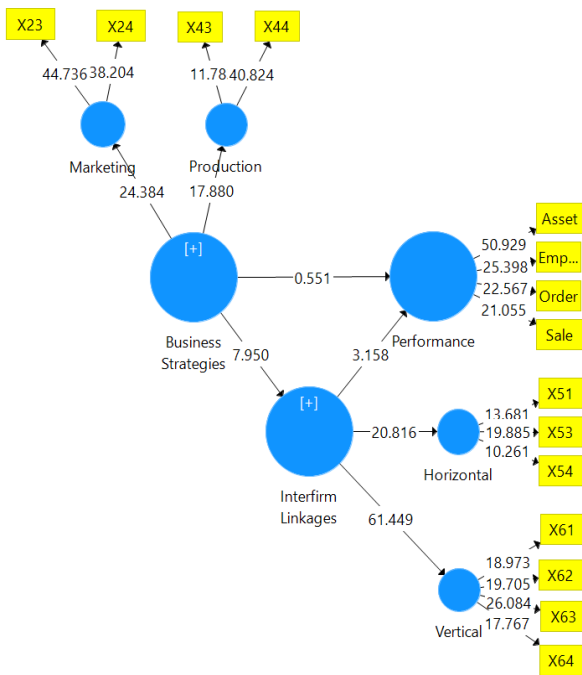


Figure 1: The model

4.3 Discussion

The study has scrutinized the dynamics of SMEs in various small industrial clusters in East Java. To obtain this objective we have tested the relationships of business strategy and inter-firm linkages in achieving their performance.

The results showed that business strategies do not significantly influence SME performance, therefore the hypothesis on this relations is rejected. Meanwhile, the inter-firm linkages significantly affects SMEs' performance either horizontally or vertically. Therefore, hypothesis H₁ is supported.

In the same time, inter-firm linkages significantly intermediates the relationship between business strategy and performance therefore hypothesis H₂ is supported. Due to the weakness of SME strategic plans, SME have to

utilize cluster social capital in the form of inter-firm linkages. It will contribute to achieve better performance.

Strengthening inter-firm linkages among clustered firms might be called as a part of coepetition strategy. Morris et al (2007) emphasized that the strategy needs mutual benefit, trust, and commitment. Kossyva et al (2014) pointed out that SMEs perform better when they compete and cooperate simultaneously.

So far, the most crucial limitations of SMEs are product improvement and limited market. According to Heikkila et al (2017) the problem can be overcome by innovating the business model. Gatautis et al (2019) stated that business model reaches on innovation activities, strategic orientation, markets, and technological turbulence. By establishing inter-firm linkages both horizontally and vertically aligned to overcome the problem of production and marketing.

In short, innovation is a success key for SMEs to develop. The small industrial clusters then facilitate them in benefiting the formations of inter-firm linkages. Thus, this research has supported Schmitz (1995) on collective efficiency of small industrial clusters.

5. CONCLUSION

This study has proven the benefits of SME clustering. In a cluster, SMEs are able to develop their cooperation by strengthening inter-firm linkages in order to improve their performance. Since SMEs are faced by the weakness of strategic plans, efforts to link with other firms are beneficial for utilizing the resources. Thus, applying coepetition strategy is better choice for SMEs operate in small industrial clusters.

Since business strategies does not directly influence firms' performance, they then build inter-firm linkages both horizon-tally and vertically. In this situation, SMEs are able to apply production and marketing strategies for achieving better performance.

REFERENCES

- [1] Ayyagari, M. (2006). Micro and Small Enterprises: Unexplored Pathways to Growth. MicroREPORT #63. USA.
- [2] Baptista R and Swann, P. (1998). Do firms in clusters innovate more? Research Policy 27: 525–540.
- [3] Chong, H. (2008). Measuring performance of small-medium sized enterprises: the grounded theory approach. Journal of Business and Public Affairs, Vol. 2.
- [4] Cragg, P., King, M., and Hussin, H. (2002). IT alignment and firm performance in small

- manufacturing firms. *Journal of Strategic Information Systems* 11: 109–132.
- [5] Delmar, F. (1997). *Measuring growth: methodological considerations and empirical result*, *Entrepreneurship SME Research: on its Way to the Next Millennium*, Ashgate Publishing Ltd. England.
- [6] Felzensztein, C., Gimmon, E., and Carter. (2010). *Geographical Co-Location, Social Networks and Inter-firm Marketing Co-operation: the Case of the Salmon Industry, Long Range Planning*, doi:10.1016/j.lrp.2010.021006: 1–16.
- [7] Garg, V.K., Walters, B.A. and Priem, R.L. (2003). *Chief executive scanning emphases, environmental dynamism and manufacturing firm performance* *Strategic Management Journal*, Vol. 24 No. 8.
- [8] Gatautis, R, Vaiciukynate, and Tarute. (2019). *Impact of business model innovations on SME's innovative and performance*. *Baltic Journal of Management*.
- [9] Ha, T. (2002). *Entrepreneurial Orientation, Business Strategies and Firm Performance: a Comparative Study of Small Medium-Scale Enterprises in Vietnam and Thailand*. Dissertation. Thailand.
- [10] Harvie. C. (2007). *SME Clustering and Networking and its Contribution to Regional Development and Competitiveness: an Overview of the Key issues*. The 4th SMEs in a Global Economy Conference.
- [11] Henry, M.S., Barkley, D.L and Zhang, Y. (1997). *Industry Clusters in the TVA Region: Do They Affect Development or Rural Areas?* Contractor Paper 98-9.
- [12] Heikkila, M., Bowman, H., and Heikkila, J. (2017). *From strategic goals to business model innovation paths: an explanatory study*. *Journal of Small Business and Enterprise Development*. Vol. 25 No. 1.
- [13] Hoetoro, A. (2014). *Cooperation and Competition among Clustered MSEs in East Java*. *GamaIJB*. Vol. 16 No.3: 275-293.
- [14] Keskin, H and Şentürk, C. (2010). *The Importance of Small and Medium-Sized Enterprises in Economies: SWOT Analyses of the SME Sector in Turkey and Albania*. *Niğde Üniversitesi İBF Dergisi*, 2010, Cilt:3, Sayı: 116-132.
- [15] Kesper, A. P. (1999). *Small and Medium-sized Metalworking Companies in the Witwatersrand: Facing the global challenge* TIPS 1999 Annual Forum.
- [16] Kossyva, D., Sarri, K., and Georgopoulos, N. (2014). *Co-opetition a Business Strategy for SMEs in Times of Economic Crisis*. *SEEJE* 1: 89-106.
- [17] Kotey, B and Harker, M. (1998). *A Framework for Examining Strategy-Types in Small Firms*. www.sbaer.uca.edu--.
- [18] Kuncoro, M., and Supomo, I.A. (2003). *“Analisis Formasi Keterkaitan, Pola Klaster, dan Orientasi Pasar*. *Jurnal Empirika* Vol. 16. No. 1. Juni.
- [19] Maes, J., Sels, L., and Roodhofs, F. (2003). *Modeling Small Business Profitability: an Empirical Test in the Construction Industry*. A paper presented at the Academy of Annual Management Meeting, August 1-6, Seattle (WA).
- [20] Mazzola, F., and Bruni, S. (2000). *The role of linkages in firm performance: evidence from southern Italy*. *Journal of Economic Behavior and Organization*, Vol. 43: 199-221.
- [21] Moha Asri, A. (1999). *Small and Medium Enterprises in Malaysia: Policy, Issues and Challenges*. Ashgate Publishing Ltd. England.
- [22] Morris, M.H., Kocak, A., and Ozer, A. (2007). *Coopetition as a Small Business Strategy Implications for Performance*. *Journal of Small Business Strategy*.
- [23] O'Regan, M and Ghobadian. (2004). *The impact of management techniques on the performance of technology based firms*. *Technovation*.
- [24] Porter, M. (1990). *The Competitive Advantage of Nations*. The Free Press a Division of Macmillan, Inc. New York.
- [25] Rothwell, R., and Beesley, M. (1989). *The Importance of Technology Transfer In Barber et al. (ed.). Barriers to Growth in Small Firms*. Routledge. London.
- [26] Schmitz, H., (1995). *Collective Efficiency: Growth Path for Small Scale Industry*. *The Journal of Development Studies* 31.

- [27] Tambunan, T. (2005). Development of Rural Manufacturing SME Clusters in a Developing Country: the Indonesian Case. *Journal of Rural Development* 31(2): 123–146.
- [28] Turgay, T., and Kassegn, H. Z. (2005). Empirical Strategic Management Model for Small Businesses in the Turkish Republic of the Northern Cyprus. *Review of Social, Economic & Business Studies*. Vol. 3/4, 135-160.
- [29] UNIDO. (2010). Cluster development for pro-poor growth: the UNIDO approach.

Appendix: The items of the indicators

- X₁₁ – Searching the cheapest sources of capital
- X₁₂ – Reserve of profit for working capital
- X₁₃ – Using production cost efficiently
- X₁₄ – Allowing customers to make debt
- X₂₁ – Direct selling
- X₂₂ – Online selling
- X₂₃ – Asking customers’ opinion on my product
- X₂₄ – Responding customers’ complaint
- X₃₁ – Involving my workers in decision making
- X₃₂ – I evaluate my workers’ performance
- X₃₃ – I provide special incentive for my workers
- X₃₄ – I provide special training for my workers
- X₄₁ – I prioritize the quality of my products
- X₄₂ – I anticipate customers’ taste
- X₄₃ – I renew working equipments
- X₄₄ – I renew working methods
- X₅₁ – I share information each other
- X₅₂ – I market the products with other partners
- X₅₃ – I follow training together with partners
- X₅₄ – I share business experience with partners
- X₆₁ – I provide orders to other partners
- X₆₂ – I subcontract products to other partners
- X₆₃ – I obtain marketing networks from partners
- X₆₄ – I obtain technical assistance from partners