

## Association of Organizational Structure, Continuous Improvement Capability and Company Performance: The Mediatory Role of Continuous Improvement Capability Of Big Manufacturing Company in Indonesia

<sup>1</sup>Fauzi Arif Rohman Hakim, <sup>2</sup>Arsono Laksmana and <sup>2</sup>Bambang Tjahjadi

<sup>1</sup>Faculty of Graduate Program,  
Widya Mandala University of Surabaya, Surabaya, Indonesia

<sup>2</sup>Faculty of Economics and Business,  
Airlangga University, Surabaya, Indonesia

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**Abstract:** Sustainable good performance is something that all companies intend to deliver it. Thus, every company will put a high effort to become sustainable good performance company. This research seeks to address the query of the mediating effect of continuous improvement capability in association of organizational structure and company performance. The model was tested by using 202 samples of big manufacturing companies in Indonesia with a manager or higher position in the organizational hierarchy as research respondent. Result showed that organizational structure has a positive and significant impact on continuous improvement capability, continuous improvement capability has a positive and significant impact on company performance and organizational structure has an impact on company performance through continuous improvement capability of big manufacturing companies in Indonesia.

**Key words:** Continuous improvement, continuous improvement capability, organizational structure, company performance, Indonesia

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### INTRODUCTION

Sustainable good performance became a primary concern of every organization both profit oriented organization or non-profit oriented organization. The company as a profit oriented organization puts a high effort to become sustainable good performance company. Many researchers studied on factors that give influences on performance in many years. Some studies shown many kind of factors which were indicated has impact on performance, such as organizational culture (Xenikou and Simosi, 2006; Mgbere, 2009; Araujo *et al.*, 2013), Leadership (Mgbere, 2009; Sarwat *et al.*, 2011; Wahjudono *et al.*, 2013; Araujo *et al.*, 2013), Organizational Structure (Lei and Schmit, 2010; Pertusa-Ortega *et al.*, 2010; Hao *et al.*, 2012), supply chain management (Li *et al.*, 2006), diversification (Qian *et al.*, 2008), Total Quality Management (Gharakhani *et al.*, 2013), Business Strategy (Parnell, 2010) and so forth.

Organizational structure is one of various organizational elements that company has full control to define, change and manage by their own (Collis and Montgomery, 2005). There is distinction of research about organizational structure in relation to company

performance. One study mentioned that organizational structure has an influence on company performance while another study indicates no impact on company performance (Hao *et al.*, 2012; Lei and Schmit, 2010; Pertusa-Ortega *et al.*, 2010). Organizational structure and company performance are interesting variables to be studied in the context of Indonesian manufacturing company which has been contributing into Indonesian gross domestic brutto more than 23% for many years. This research model is developed to answer the question of the mediating effect of continuous improvement capability in association of organizational structure dan company performance in the context of big manufacturing companies in Indonesia.

Continuous improvement is a management approach a part of total quality management. It is defined as a company wide change initiative from an existing condition which is planned, organized, systematic and gradual to increase company performance (Boer and Gertsen, 2003). Continuous improvement has played an important role in company sustain ability. Study of Bessant *et al.* (2001) that found a continuous improvement capability concept called maturity model for the evolution of continuous improvement capability is an important milestone. This

model gives understanding that every company has a different level of continuous improvement capability. But in fact there is not much quantitative research that used this model as a research variable. This research uses a continuous improvement capability model as a research variable to enrich the quantitative research of this model and introduce it in Indonesian manufacturing environment.

### **Literature review**

**Organizational structure:** Organizational structure was defined as how authorities and responsibilities were allocated and how tasks were classified and distributed within an organization (Daft, 2012, Nahm *et al.*, 2003). By the above definition, it gives understanding that organizational structure always deals with people. Therefore it shall not be valid for all time but it must be consistently changed to fit in organizational demand to have better company performance (Hao *et al.*, 2012). Furthermore, Daft (2012) proposed 3 key components must be kept in mind in determining organizational structure. He stated that organizational structure shall indicate formal reporting system in relation with number of hierarchy and span of control, organizational structure shall be divided into divisions or departments and organizational structure shall contain system design to ensure effectiveness of communication, coordination and integration of every department activities.

In organizational behaviour theory and several previous researches, organizational structure is classified into mechanic organizational structure and organic organizational structure. Mechanic organizational structure is described as a structure with high specialization and not flexible while organic organizational structure is on the contrary side. Bessant and Berront (2003) stated that in practice, organization needs aspects of both mechanistic and organic approaches but the difficulties are in balancing that two different cultures they represent. In several studies, organizational structure is reflected by several dimensions in many researches such as specialization, coordination, formalization, decentralization/centralization, flexibility, span of control. The challenge is on how to fit them with organizational demand.

**Continuous improvement capability:** Bessant and Caffyn (1997) defined continuous improvement as an incremental innovation process, focused and continuous, involving the entire organization, while Jorgensen *et al.* (2003) defined a continuous improvement as a philosophy that is simply described as improvement initiative in improving company success and reduce failure. The other researchers defined continuous improvement with different perspectives depend on researcher concern and the context of organization.

Continuous improvement capability is a model developed by Bessant *et al.* (2001) a part of continuous improvement theory has 5 (five) levels of capability in continuous improvement within organization as follows:

**Level 1: pre CI interest:** Pre CI interest has a meaning that there is initial interest to implement continuous improvement. Organization in this level solves problems randomly and has no initiative and formal structure in continuous improvement.

**Level 2: Structured CI:** In this level, organization starts to implement a continuous improvement initiative. Structured problem solving is started to be implemented. Employee showed their participation in continuous improvement initiative.

**Level 3: Goal oriented CI:** Continuous improvement has been developed as a part of company strategy. In this level, organization put continuous improvement as a part of main concern and implement a measurement system to ensure the implementation of this initiative. Problem solving has been developed not only within a department but also across department or organization wide.

**Level 4: Proactive CI:** In this level, responsibility of continuous improvement has been defined clearly. There is a unit that is responsible to continuous improvement and problem solving system.

**Level 5: Full capability of CI:** Organization in the level of full capacity of continuous improvement has come into learning organization world. Continuous improvement has been a part of learning organization where the knowledge has been distributed to all parties within the organization.

Each level above has a certain continuous improvement abilities which are represented by several constituent behaviours. Bessant and Caffyn (1997) gave argumentation that the organizations with high level in CI maturity model will present the characteristics such as a common objective, adequate management model, culturing of continuous improvement initiative, communication and development of an environment to be a part of the learning process. Each level of continuous improvement capability has particular or unique attributes.

**Company performance:** Sustainable good performance is a goal of every organization both profit oriented organization and non-profit oriented organization as well. Keban defined performance as a result that recorded as a result of functional and activities implementation in certain duration of time. Similar to above definition, Wheelen and Hunger (2011) defined a performance as a result of activities. Scholar has a different approach on how to

present and what kind of measure used to present the result. Venkatraman and Ramanujam (1986) proposed 3 (three) domain in presenting business performance. They are financial performance domain, operational performance domain and organizational effectiveness domain. Performance measurement shall to be carried out to monitor and evaluate the company achievement. Umar explained that performance measurement as a part of strategic management is a very crucial to be conducted and described performance evaluation as a process to provide information about achievement in comparison with defined standard or initial expectation. Many scholars introduced a lot of method of performance measurement such as Balanced scorecard (Kaplan and Norton, 2005), integrated performance measurement system (Bititci *et al.*, 2000), Performance prism (Neely *et al.*, 2001), Capability Economic Value of Intangible and Tangible Assets Model (Ratnatunga *et al.*, 2004). Recent performance measurement method contains not only financial aspect but also non-financial aspects.

**Conceptual framework of study**

**Organizational structure and performance:**

Organizational structure shall be designed to fulfill organizational demand in realizing the organization strategy and goal. Huang *et al.* (2011) studied about relationship between organics organizational structure and continuous improvement and learning with manufacturing companies as population. They conclude that there is a strong relationship between organic organizational structure and continuous improvement and learning. In the context of total quality management. Naceur Jabhown (2005) found that organizational structure has influence on total quality management implementation. More detail he found that organic structure supports the implementation of customer-oriented TQM while mechanistic structure impedes it. From geographical side, there is a different perspective in looking at the mechanistic structure where organization in Arabs and Far Easterners is more positive than Australian, American and Western Europeans. He argued that this is probably due to national cultures different. Based on this understanding, hypothesis can be developed is as follows:

- H<sub>1</sub>: Organizational structure has significant influence on continuous improvement capability

**Continuous improvement capability and performance:**

Continuous improvement as a part of total quality management is an essential strategic tool in improving company performance. Gao found that continuous



Fig. 1: Theoretical framework of research

improvement capability has influence on company performance improvement. He studied a relationship of human resources development practices and performance improvement with continuous improvement capability as mediating variables towards automotif supplier in North America. The result of study shown that continuous improvement capability has influences on performance improvement. Bahri *et al.* (2012) studied the relationship of total quality management implementation and company performance in the context of manufacturing companies in South Sulawesi province of Indonesia. The finding of this research mentioned that total quality management has no direct impact on company performance but continuous improvement and customer focus as part of total quality management has significant impact on company performance. He argued that implementation of TQM without resources preparation will have no impact on performance therefore he suggested that prior to implement TQM, company shall prepare resources and organization as well to adapt to the demand of TQM implementation. Gharakhani *et al.* (2013) in their review research found that total quality management has influence on performance. Furthermore they stated that there are four components frequently cited to total quality management strategy. Those components are customer satisfaction, employee involvement, managerial leadership and process improvement and control.

- H<sub>2</sub>: Continuous improvement capability has significant influence on company performance

**Theoretical framework:** Based on literature review in the previous section, theoretical framework can be developed as presented on Fig. 1 where continuous capability take place as intervening variable. This framework illustrated the indirect effect of organizational structure on company performance that is mediated by continuous improvement capability.

**MATERIALS AND METHODS**

**Material:** The population of this research is big manufacturing companies in Indonesia which are spread out in several provinces which are defined as company whose employee is more than 100 people by the Indonesian central agency on statistic. Research

questionnaires by using a Likert scale were distributed by electronic mail and paper based mail with manager and higher position in the formal hierarchy of the organization as respondents. There are 202 companies were acceptable to be analyzed as research samples consist of 15 different business line companies where are located in 6 (six) location in Indonesia.

**Measure:** Dimensions of variables used in this research are referred to several past studies. Organizational structure was represented by specialization (Tixeira, *et al.*, 2012; Geeraerts, 1984), decentralization (Hao *et al.*, 2012; Reinmann, 1974), formalization (Hao *et al.*, 2012; Pertusa-Ortega *et al.*, 2010; Pleshko and Nickerson, 2008; Nahm *et al.*, 2003)), coordination (Burton *et al.*, 1998) and flexibility (Hao *et al.*, 2012). Dimension of continuous improvement capability was referred to Bessant and Caffyn (1997) are understanding continuous improvement, getting continuous improvement habit, focusing continuous improvement, leading the way of continuous improvement, aligning continuous improvement, strategic continuous improvement, learning organization. Dimensions of company performance were developed based on recent approach of performance measurement which put financial measures and non-financial measures. Company performance of this research reflected into 6 (six) dimensions that are also used by previous researchers. They are sales growth (Santos and Brito, 2012; Hao *et al.*, 2012; Parnel, 2010), profit growth (Santos and Brito, 2012; Parnel, 2010; Liu and Barrar, 2008), productivity improvement (Liu and Barrar, 2008), customer satisfaction (Santos and Brito, 2012; Hao *et al.*, 2012) and employee satisfaction (Santos and Brito, 2012).

Confirmatory Factor Analysis (CFA) using AMOS was applied to test validity of each dimensions and Composite Reliability (CR) to test the reliability of variables. AMOS has no ability to directly calculate composite reliability but it need an additional calculation with a defined formula. Result of confirmatory factor analysis shown that all dimension has a loading factor more than 0.6. It shows that all dimensions is valid in reflecting the related variables. In reliability test side, composite reliability of all variables is more than 0.7 which higher than specified. Based on the result of validity and reliability test, all dimensions and variables are valid and reliable for further analysis. Afterwards, some other test such as normality test, outlier test and linearity tests was applied prior to conduct SEM (Structural Equation Modeling) analysis with maximum likelihood estimation. It is intended to ensure research data fulfill requirement of SEM analysis.

## RESULTS AND DISCUSSION

Structural Equation Modeling (SEM) analysis is used to analyze the research data. Result of this test is as showed in Table 1 for estimates regression weight and Table 2 for direct and indirect effect of variables. Table 1 presented SEM analysis of path from organizational structure to continuous improvement capability has a loading factor, critical ratio and a significant probability that fulfill the specified value. These values give understanding that hypothesis 1 is supported. While SEM analysis of path from continuous improvement capability to company performance has a loading factor, critical ratio and significant probability that also fulfill the specified value. These values give understanding that hypothesis 2 is also supported. Based on the SEM analysis result, total effect that contains direct effect and indirect effect can be summarized as presented in Table 2.

Based on standardized total effect of the model as presented on Table 2 mentioned that from statistical point of view there is direct effect from organizational structure to continuous improvement capability with loading factor 0.391, direct effect from continuous improvement capability to company performance with loading factor 0.197 and indirect effect from organizational structure to company performance with loading factor 0.077. The value of indirect effect from organizational structure to company performance shown that continuous improvement capability has mediating role in the association of organizational structure and company performance. Zhao *et al.* (2009) called this mediation typology as indirect only mediation.

Based on the above result, we can conclude that organizational structure has significant and positive influence on continuous improvement capability that support theory of total quality management mentioned by Besterfield (1999) and support previous research done by Tata and coauthors and Naceur. The higher structural organization fit will make the level of continuous improvement capability higher. Continuous improvement capability development needs good coordination among organizational members, appropriate formalization, suitable level of freedom in decision making and appropriate specialization as well. As continuous improvement is a dynamic activity, it required an organizational structure with suitable flexibility level. Another conclusion of this research is that continuous improvement capability has a positive and significant influence on company performance in the context of big

**Table 1: Structural equation modelling result**

Variables relations	Estimate (loading factor)	Critical Ratio	p	Remarks
Organizational structure Continuous improvement capability	0.391	4.366	0.000	Significant
Continuous improvement capability company performance	0.197	2.710	0.007	Significant

**Table 2: Direct and Indirect effect of variables**

Variables	Continuous Improvement Capability (CIC)	Company Performance (CP)
Organizational Structure (OS)	0.391	0.077
Continuous Improvement Capability (CIC)	N.A	0.197

manufacturing companies in Indonesia. This finding supports previous studies done by Joiner (2007), Bachri *et al.* (2012) and Garakhani *et al.* (2013). Continuous improvement deal with activity to improve the process within the organization in improving customer satisfaction, productivity, quality and the other aspect.

The last finding of this research is that continuous improvement capability has mediated the association of organizational structure and company performance of big manufacturing companies in Indonesia. The higher organizational structure fit for organizational demand will improve the level of continuous improvement capability of big manufacturing companies in Indonesia. Continuous improvement capability plays an important role in improving company performance therefore every big manufacturing company in Indonesia shall consistently improve their continuous improvement capability by taking a look in deep their organizational structure fit. Company as an organization has an environment which will change by the time. The limitation of this research is not considered yet the existence of environmental dynamism. Future research can discuss the environmental dynamism as a moderated variable to get to know its impact on the relation of continuous improvement capability and company performance. Different environmental dynamism has a different impact on the relation of continuous improvement to performance (Zubi, 2015).

**CONCLUSION**

This research support the development of continuous improvement theory as an important strategic tool in improving company performance, especially manufacturing company performance in a superior turbulent business competition.

**ACKNOWLEDGEMENTS**

This research is original has not been published in another publication and is not being submitted simultaneously to another journal.

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