

Supplier Involvement and Internal Lean Practices on Organizational Performance: The Role of Training And Development

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Abstract. The development of the business environment encourages organizations to improve their supply chain management in order to be able to compete with competitors. Supplier involvement and internal lean practices in supply chain management play a role in supporting training and development undertaken by the organization as well as organizational performance. The objective of this research is to examine the mediating function of training and development in the relationship between organizational performance and the impact of internal lean practices and supplier engagement. This research included the participation of 58 micro and small company owners operating in the handicraft sector of Yogyakarta. The findings of this research elucidate that there exists a positive correlation between supplier involvement and organizational performance, as well as between internal lean practices and organizational performance. Furthermore, the mediating role of training and development in the relationship between supplier involvement and organizational performance and internal lean practices and organizational performance is found to be insignificant.

Keywords: Supplier Involvement; Internal Lean Practices; Training and Development; Organizational Performance.

1 Introduction

Activities in supply chain management practices provide opportunities in improving overall organizational performance [49]. [31] define supply chain management practices as a series of activities carried out by organizations in order to produce effective supply chain management performance. Effective supply chain management practices can increase customer satisfaction [38] and improve organizational performance [31]. [46] describe the key elements in supply chain management that can be applied by organizations to achieve organizational performance, namely lean internal practices and supplier involvement. Lean internal practices based on

literature can improve organizational performance [10]. Several empirical studies show that lean internal practices have an effect on organizational performance dimensions such as profitability [26]. [42] explained that supplier involvement also supports the success of organizational performance through feedback provided by suppliers in the form of documentation activities, production process activities, and delivery activities by suppliers.

[5] and [11] explain that training and development are important factors of human resource management practices that can improve organizational performance, and improve the skills and abilities of current employees so that organizational performance increases. Training and development are key that enable an organization to improve its performance effectively [45]. Lean internal practices and supplier involvement can support training and development by the organization so this can improve organizational performance [45]. [27], [45], and [16] explain that training and development mediate the role of supplier involvement and lean internal practices on organizational performance. However, the research of [45] and [16] can be concluded to be inconsistent. Researchers will reexamine the role of training and development on the effect of supplier involvement and lean internal practices on organizational performance.

Implementing supply chain management effectively is a particular challenge for micro, small and medium enterprises or MSMEs [44]. Currently, research studies on supplier engagement, internal lean practices, organizational performance, training, and development on MSMEs in developing countries are rarely researched [7]; [22]. The contribution of MSMEs to Yogyakarta's Gross Regional Domestic Product is 79.6 percent, the growth in the number of business units averages 8.45 percent per year, the growth in the average turnover is 1.37 percent per year (Central Bureau of Statistics Yogyakarta, 2022). The research was conducted on MSMEs in the handicraft sector in Yogyakarta. This study is different from previous research that focused on the context of large companies and has not explained the role of supplier involvement [4] so this research is interesting to do.

2 Literature Review and Hypothesis

2.1 Development Literature Review

Supplier Involvement. Supplier involvement has a more direct role in the quality performance of the organization [39]. In addition, adopting supplier engagement practices can offer organizations the added benefit of supply risk management in new product development and upstream supply chains [52]. [30] developed three factors in measures of supplier engagement: the need to assess quality, supplier service capability, supplier strategy, and its managerial alignment with buyers. Several supplier parameters, including manufacturing prices, raw material costs, incentive alignment, organizational objectives, personnel quality, delivery systems, personal amenities, and the duration of the process itself are evaluated throughout supplier engagement [31].

Organizational Performance. Organizational performance is an important concept for organizations to achieve the goals and objectives on which the organization is founded [51]. To achieve this, organizations must use management, planning, and performance evaluation [51]. To overcome gaps in organizational performance measurement, organizations can manage organizational performance based on measurements and planning that have been made [51]. [28]

argues that organizational performance is an individual's efforts and activities to carry out and improve certain work within the organization by implementing the organization's work plan without violating the standards required by the organization. There are two main ways in which an organization may be considered successful: financially (ROI, profit, return on shareholders, economic value contributed, and number of shareholders) and in the commodities and services market. (market share and sales)[13].

Internal Lean Practices. Lean internal practices are activities to eliminate waste such as cost and time in manufacturing systems [50]. Furthermore, [50] explains that lean internal practice refers to systems that use fewer inputs to produce mass production speed and at the same time can offer more variety to the end customer. Therefore, lean practices become a very important aspect of achieving supply chain management effectiveness (Li *et al.*, 2005).

Lean internal practices are carried out by the organization to provide more value to customers by doing less work [8]. Lean internal practices also play a role in determining whether the resources used benefit the end consumer [8]. If the use of resources is classified as waste then the organization will strive to eliminate such activities [8].

Training And Development. Human resource management practices can enrich the skills, abilities, and motivation of employees within the organization [5]. Training and development have a role in increasing employee knowledge about technology, improving analytical skills, solving problems, supporting team management skills, and supporting the implementation of supply chain management for company performance improvement [3].

2.2 Hypothesis Development

The Positive Effect of Supplier Involvement on Organizational Performance. Supplier involvement has a role in determining long-term supply chain relationships and providing solutions in solving problems through the strategic and operational capabilities of the organization [9]. [12] and [43] defined the objectives of strategic partnerships as the promotion of cooperation among companies, the sharing of critical strategic areas (e.g., revenue, goods, and technology), and the enhancement of organizational performance. Supplier participation includes activities such as procuring products and services from suppliers, integrating systems, and conducting supply chain operations that impact the overall performance of the supply chain [35]. Supplier engagement fosters supplier involvement in the organization's achievements by means of ongoing information exchange, collaborative problem-solving, and improvement initiatives [9],[1],[2]. [31] and [34] contend that supplier engagement is a critical activity in businesses, particularly connections with key suppliers and cooperation with suppliers to enhance organizational performance.

H1: Supplier Involvement Have a Positive Effect on Organizational Performance

The Positive Effects of Supplier Involvement on Organizational Performance With Training and Development as A Mediating Variable. [25] explains that supplier involvement will support the success of organizational training and development practices. Empirical research by [24] explains that good resource allocation on supplier involvement can encourage the implementation of training and development. Meanwhile, training and development carried out by the organization is a major factor in improving organizational

performance [21]. The impact of suppliers' engagement on an organization's performance may be mitigated via training and development. Organizational performance is improved and training and development are supported via supplier participation initiatives in the supply chain [46], [21].

H2: Training And Development Mediate On The Positive Effects Of Supplier Involvement On Organizational Performance

The Positive Effects of Internal Lean Practices On Organizational Performance. Lean internal practice pertains to the systematic elimination of both time and resource waste throughout the manufacturing process [47]. Furthermore, lean internal practices may be seen as a set of principles, guiding principles, management ideas, work ethic, and procedures [48]. According to [29], lean principles, and internal procedures aid in the elimination of all waste, the prevention of shortages, the reduction of lead times, the increase of stock turnover, and the assurance of customer satisfaction. Internal lean approaches positively affect organizational performance [47] [40] explain that lean internal practices are integrated systems to reduce or eliminate waste and simultaneously reduce or eliminate the fickle tendencies of suppliers, internal processes, and customers. The implementation of efficient production practices based on optimization flow is expected to produce better operating results for example by using lean internal practices which in turn will improve organizational performance [36].

H3: Internal Lean Practices Have A Positive Effect On Organizational Performance

The Positive Effects of Internal Lean Practices On Organizational Performance With Training and Development as A Mediating Variable. Lean internal practices play an important role for organizations especially developing the ability to support organizational strategies such as training and development [6]. Lean internal practices will support training and development such as increasing individual knowledge of technology, analytical skills, problem-solving, and team management skills, and improving organizational performance [3].

H4: Training And Development Mediate On The Positive Effects Of Internal Lean Practices On Organizational Performance

The link between the independent variable, the mediation variable, and the dependent variable is shown in Figure 1. supplier involvement, lean internal practices, training and development, and organizational performance. Based on this, the research framework is shown in Figure 1 below.

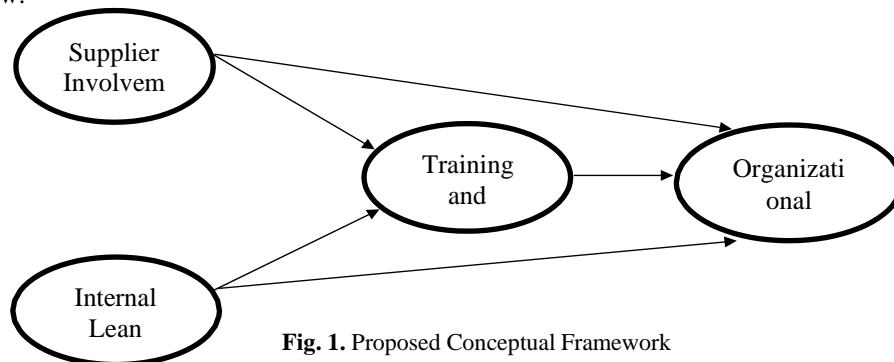


Fig. 1. Proposed Conceptual Framework

2.3 Research Methods

Population, Sample, Sampling Technique. Population refers to the total number of entities linked to the relevant data [23]. The population of this study includes manual MSME owners in Yogyakarta. According to [33] sample comprises a subset of the population that was chosen to participate in the research. The research sample included 58 participants who fulfilled the predetermined criteria for purposive sampling. In order to get data from participants, researchers use questionnaires. Furthermore, questionnaires were used to evaluate the credibility and accuracy of the respondents' data [17]. The statistical testing equipment in this study used Smart PLS 4.0. Supplier engagement metrics can be varied using 5 questions from Li et al. (2006), lean internal practice variables using 5 question items from [46], training and development variables using 4 question items from Ou et al. (2010), organizational performance variables using 7 question items from Li et al. (2006) and [20].

Data Analysis Techniques and Hypothesis Testing Validity Testing. Verify the validity by using convergent validity techniques. The link between the reflective index and its latent variables is shown via convergent validity. The evaluation of external model measurement is conducted using the factor loading value of each index. [19] elucidates that an indicator is deemed satisfactory when its factor loading value exceeds 0.7. Reliability Testing.

Determine the level of dependability among construct indicators by using composite reliability. The variable is deemed satisfactory when the composite reliability value is ≥ 0.7 and the Cronbach's alpha value exceeds 0.6 [15].

Hypothesis Testing. By using the bootstrap resampling technique, this study hypothesis's mediation may be examined. The outcome of hypothesis testing is shown by the p-value; in the case when the p-value is below 0.05, the hypothesis is deemed accepted [14].

3 Results and Discussion

The findings of testing for mediating effects of training and development (TD) on the relationship between supplier involvement (SI), internal lean practices (ILP), and organizational performance (OP) are shown in Figure 2.

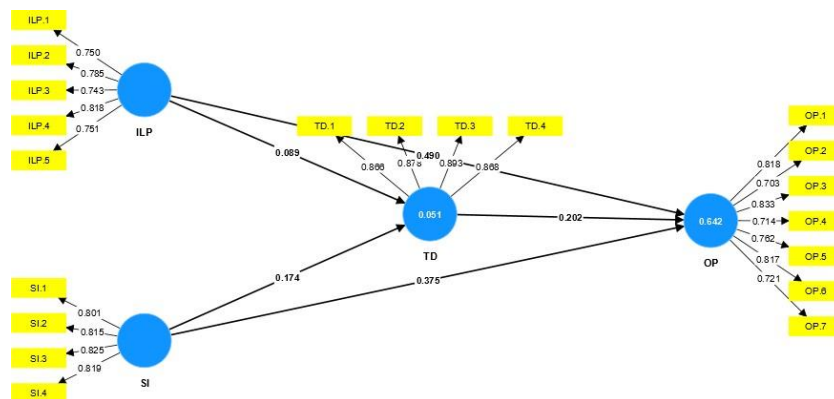


Fig. 2. Structural Model

Table 1. Convergent Validity

Variable	Indicator	ILP	OP	SI	TD
Internal Lean Practices (ILP)	ILP 1	0,750			
	ILP 2	0,785			
	ILP 3	0,743			
	ILP 4	0,818			
	ILP 5	0,751			
Organizational Performance (OP)	OP 1		0,818		
	OP 2		0,703		
	OP 3		0,833		
	OP 4		0,714		
	OP 5		0,762		
	OP 6		0,817		
	OP 7		0,721		
Supplier Involvement(SI)	SI 1			0,801	
	SI 2			0,815	
	SI 3			0,825	
	SI 4			0,819	
Training and Development (TD)	TD 1				0,866
	TD 2				0,878
	TD 3				0,893
	TD 4				0,868

According to Table 1, there are reliable indicators in the areas of supplier involvement, organizational performance, training and development, and internal lean practices. Factor loadings higher than 0.7 were found for the following variables: supplier involvement, organizational performance, training and development, and internal lean practices.

Table 2. Reliability Test Result

Variable	Composite Reliability	Cronbach's Alpha
Internal Lean Practices	0,879	0,828
Organizational Performance	0,910	0,884
Supplier Involvement	0,888	0,832
Training and Development	0,930	0,900

The tabulated results of the reliability test are shown in Table 2. All variables in this research have obtained test results indicating their reliability since each variable has a composite reliability value over 0.7 and a Cronbach's alpha value surpassing 0.6.

Table 3. Hypotesis Test Result

	Original Sample (O)	Sample Mean (M)	Standard Deviasion (STDEV)	T Statistics (O/STDEV)	P Value
Supplier Involvement → Organizational Performance	0,375	0,364	0,140	2,679	0,007
Supplier Involvement → Training and Development	0,174	0,159	0,184	0,943	0,346
Training and Development → Organizational Performance	0,202	0,196	0,091	2,236	0,025
Supplier Involvement → Training and Development → Organizational Performance	0,035	0,030	0,043	0,827	0,408
Internal Lean Practices → Organizational Performance	0,490	0,500	0,085	5,800	0,000
Internal Lean Practices → Training and Development	0,089	0,107	0,176	0,507	0,612
Internal Lean Practices → Training and Development → Organizational Performance	0,018	0,019	0,035	0,512	0,608

The results of the hypothesis testing are organized in Table 3. The following hypotheses have been found to be supported by the results of the theory testing: supplier involvement positively impacts organizational performance (accepted hypothesis); training and development does not serve as a mediator between supplier involvement and organizational performance (rejected hypothesis); lean internal practices positively impact organizational performance (accepted hypothesis); and training and development do not mediate the positive effects of internal lean

practices on organizational performance (hypothesis) (hypothesis rejected).

The results of testing the first hypothesis state that supplier involvement has a positive effect on organizational performance. It can be concluded that supplier involvement carried out by craft MSMEs will improve organizational performance. This study is consistent with research from [12] and [43] who explained that strategic partnerships such as supplier involvement can improve organizational performance through collaboration between organizations and overseeing key areas such as income, items, and innovation. Furthermore, [37] one of the most significant aspects of supplier involvement is deciding which suppliers to include in a company's competitive resources. This allows suppliers to concentrate on making the organization's performance more sustainable.

Training and development do not moderate the favorable impacts of supplier involvement on organizational performance, as shown by the findings of this research; hence, the second hypothesis is rejected. [18] explained that supplier engagement can develop competitive advantage and positioning strategies for organizations, but effective supply chain involvement cannot improve training and development practices because organizations do not create a system well this reduces organizational performance.

The results of testing on hypothesis three explain that lean internal practices positively affect organizational performance. This means that lean internal practices in craft MSMEs in Yogyakarta work optimally so as to improve organizational performance. The results of this study support research from [47] which explains that lean internal practices facilitate in eliminating all waste, stopping shortages, minimizing lead time, increasing stock turnover, ensuring customer satisfaction, and improving organizational performance. [4] explains that lean internal practices enhance the efficiency of an organization's supply chain, hence improving organizational performance and reducing waste, thereby increasing the cost-effectiveness of its operations.

This research refutes the fourth hypothesis by providing an explanation why training and development do not serve as a mediator between the favorable impacts of lean internal practices and organizational performance. In the absence of human resources, effective internal lean techniques will diminish training and development, resulting in a decline in organizational performance [41].

4 Conclusion

Based on the aforementioned findings, the following conclusions can be drawn: supplier involvement positively impacts organizational performance; training and development do not serve as a mediator between supplier involvement and organizational performance; lean internal practices positively impact organizational performance; and training and development fail to mediate the relationship between lean internal practices and organizational performance.

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