

# Impact of Lean Manufacturing Practices on Financial Performance of Pharmaceutical Sector in Thailand

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Article History:

Submitted: 20.08.2019

Revised: 18.10.2019

Accepted: 09.11.2019

## ABSTRACT

Lean manufacturing practices plays vital role in improving financial performance of manufacturing organizations. Lean manufacturing practise could improve organizations financial performance by improving the quality of product, saving costs and time. Thus, the objective of this study was to investigate the association of lean manufacturing practices with financial performance of pharmaceutical firms in Thailand. This study is based on quantitative methods and questionnaire was used to gather the data to test the hypotheses of the study. Respondents of the study were employees of pharmaceutical firms in Thailand. Researchers used PLS to analyse the data to measure the influence and strength of the relationship between the independent variables. This study found that lean manufacturing practices and financial performance of pharmaceutical firms have a positive significant association. This study offer practical insight for pharmaceutical industry. Findings of this study indicated that implication of lean manufacturing is a cause of increasing financial performance of pharmaceutical sector in Thailand.

The implementation of lean manufacturing practices could improve their cycle time, greater governance or control and enable timely information exchange to support the business trade of pharmaceutical firm that ultimately increase the profits of the pharmaceutical companies.

**Keywords:** Lean manufacturing practices, just-in-time, quick changeover, financial performance

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DOI: 10.5530/srp.2019.2.29

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## INTRODUCTION

In the contemporary globalized corporate environment, all kinds of business organizations are greatly affected by the technological innovations and opportunities because of advanced level of competitive standards with respect to international, regional and national context (Chowdary & George, 2011; Haseeb, Hussain, Kot, Androniceanu, & Jermsittiparsert, 2019). Consequently, firms face a higher amount of pressure for delivering efficient products, services to customers and productions firms are supposed to produce best quality products with operational brilliance. The purpose behind these initiatives is to attain better quality for products, reduction in the production costs and production time (Arya & Jain, 2014). In the contemporary globalised world, there are two dimensions where production firms are facing issues. Firstly, developed production methods are traditional methods of production are becoming out dated. Secondly, demand and expectations of product users are changing and they are shifting their loyalties to the products that deliver more perceived performance value for customers (Jasti & Kodali, 2015). Now a day, customers demand products and services that are more innovative in features and they have to pay less for that. Specifically, to deal with the prevailing challenge, manufacturing businesses are formulating their strategies by focusing the idea of maximizing consumer utility and minimizing waste. Therefore, in the last two

decades operations of manufacturing business are rapidly changing in the intensive era of competition that have been emerged as the idea of lean thinking (Fullerton, Kennedy, & Widener, 2014). The term “lean” include the “lean manufacturing” or “lean production” because it is economical in the use of everything in the comparison of mass manufacture (Bhamu & Singh Sangwan, 2014). Lean production utilize only half of the resources in terms of workers efforts in the factory, production space, investments in the machinery, engineering in developing the innovative product and production time (Hibadullah et al., 2014). Moreover, it demands to retain about half of the stock, results in fewer faults and manufacture the larger and growing quantity of goods. Lean manufacturing is a production method adopted by management that result in the better competitive position of a business in the market by enhancing the effectiveness and reducing the manufacturing costs by eliminating unnecessary operations with respect to value creation (Villarreal, Garza-Reyes, & Kumar, 2016). Moreover, it maximize production outputs by decreasing operational time and work with regard to inventory processing, enhancing delivery time and ultimately improve market place and performance (Garza-Reyes, 2015b). Numerous tools and methods that are applied for the improvement of outputs are included in the lean method. The term “continuous improvement” is commonly used in the lean production and the idea is

regarded as the part of “total quality management, total productive maintenance, just-in-time, Six Sigma, pull flow, low setup, controlled processes, human resource management and other approaches” (Garza-Reyes, 2015a). Garza-Reyes et al. (2016) have opinion that one of the best methods to achieve the purpose is lean manufacturing (LM). By keeping in view the accomplishment of Toyota, many of the production as well as services organization in the various sectors have adopted the LM practices with the purpose of efficiency improvement and profitability (Dora et al., 2013). Additionally, many of the tangible and intangible advantages by the Toyota and other Japanese producers have been enjoyed in their corporate culture (Serrano Lasa, Castro, & Laburu, 2009). Many of the businesses have attained greater success by applying these LM practices (Yadav et al., 2019). In contrast, Bhasin (2012) reported about 10 per cent of the businesses that applied LM practices gained complete success. There are many of the reasons that result in the failure of this system. Among those, one of the major reasons is poor understanding of this method and its purpose. Additionally, Kumar, Dhingra, and Singh (2018) comprehended the various studies that indicate the varying outcomes of application of lean approach with respect to various sectors of economy. However, they also focused on the dire need of the specific studies with respect to particular sectors or industries to understand that these practices are equally applicable and beneficial for all kinds of industries.

According to above discussed literature, the current research has focus on the particular sector of pharmaceutical. Many of the researchers have opinion that pharmaceutical industry is weaker in the adoption of lean practices as compare to other industries (Alkunsol et al., 2019). One of the major reasons for the phenomenon is that companies have invested huge costs on their structure whereas products of company are of small price. Another reason for the fact is the strict quality values that form the pharmaceutical business (Chowdary & George, 2011). In the same way, Thai pharmaceutical industry remained reluctant for the adoption of lean practices in their production processes (Haleem et al., 2015). Thai pharmaceutical sector is regarded as the major contributor in the economy of Thailand occupying with the position of best performing industry as compare to other sectors of economy in the region. Moreover, it contributes 15 per cent value globally to the sector of pharmaceutical (Pothitong & Charoensiriwath, 2011). On the other hand, the sector is facing issues associated with the enhancing R&D expenses, reducing efficiency, out dating of many copyrights that ultimately result in the reduction of profitability ratios (Pothitong & Charoensiriwath, 2011). Resultantly, a dire need of enhancing operational excellence by adopting processes of excellence that include lean method has been appeared that help in resolving the above discussed issues (Panwar, Nepal, et al., 2015). On the other hand, literature has some supportive evidence about the implementation of LM practices in the context of pharmaceutical sector

(Chowdary & George, 2011) but there is no evidence exist in previous research that lean practices are adopted and applied by the Thai pharmaceutical sector. Additionally, apart from the existence of literature regarding application of lean practices in the pharmaceutical business, not a single research available in academics that highlight the lean readiness (LR) level of pharmaceutical producers of Thailand. In accordance with, Anand and Kodali (2008) mentioned the scarcity of exploratory researches associated with the LR level of other sectors, besides the automobile sector where LM has its origin.

Lean manufacturing is the concept that has its roots in many decades back in the past (Belekoukias, Garza-Reyes, & Kumar, 2014). From that time, numerous developments in the research models have been made by researchers with the core concept of product and quality improvement with the reduction of waste and streamlining the production processes. In the research, lean practices are found positively associated with business performance (Belekoukias et al., 2014). However, a study conducted by Marvel and Standridge (2009) concluded that few of the businesses have enjoyed prominent improvements by adopting LM. In the previous years, numerous studies have been published that highlight the importance and significance of lean practices or consist of case studies that have focus on the outcomes of individual businesses. Numerous lean practices have been established that are particularly associated with the mass manufacturing of companies (Buer, Strandhagen, & Chan, 2018; Deflorin & Scherrer-Rathje, 2012; Moeuf et al., 2016). Most of the production businesses that have adopted the lean manufacturing have evaluated it by their exclusive method. Certainly, SMEs and other larger production businesses have their separate characteristics and particular accomplishment standards associated with lean practices comparatively.

Intense competitive challenges encouraged many of the pharmaceutical business firms to implement lean practices to improve business efficiency and competitive position. In response to its effective outcomes in numerous businesses, lean practices widely attracted the many pharmaceutical businesses in the state. Despite, the concept of the adoption of lean practices has not been implemented by numerous pharmaceutical organizations because of diverse opinions. There are only few firms in the pharmaceutical industry that implemented lean practices in. However, lean manufacturing is not so old with respect to SMEs that is why a large number of research areas are not addresses yet (Moeuf et al., 2018). Only few studies are available in the literature that addressed the business performance and lean application with regard to pharmaceutical sector. Hence, a comprehensive study is required to address the gap. For the reason, the researcher has intention to conduct the study to examine the relation of lean manufacturing practices and performance of Thai SME manufacturing firms to address the research gap.

## LITERATURE REVIEW

### Financial Performance

Kianto, Andreeva, and Pavlov (2013) states that financial performance is the amount of organizational achieved profit-centered goals that include return of sale (ROS) and return of investment (ROI). Broadly, financial outcomes are the extent to which monetary objectives being obtained by a business that is a significant element of finance risk administration. It is the method of evaluating the outcomes of business strategies and practices in terms of money. Moreover, it measures the overall financial position of the business for a specific time period and compares this performance with the other operating businesses in the industry or sector in competition (Borhan, Mohamed, & Azmi, 2014). The term “financial performance” is the combination of financial positions of a business, its capability to payback its liabilities and its intention to operate in a long future. Normally, the time period for the goals and plans must have consistency of more than two to five years. Financial performance is observed as the operations that are performed for financial events. Broadly speaking, “financial performance refers to the degree to which financial objectives being or has been accomplished. It is the process of measuring the results of a firm's policies and operations in monetary terms” (Saleh, Zulkifli, & Muhamad, 2011).

Financial performance of manufacturing firms could be enhanced by the implementation of lean practices in production (Fullerton & Wempe, 2009). Production productivity, improve by lean manufacturing practices by dropping process time and inventory in the process, improving overall time and thus better market outcomes (Valente, Sousa, & Moreira, 2019). Innovative problem such as product expansion, demand meeting, client facilities and can attain customer approval can be achieved by enhancing responsiveness and decreasing lead time (Ward and Zhou, 2006). Through lean practices will increase performance of firms with the help of better customer value with regard to reduced prices and better quality. Through improving organizational process, cost efficiencies Lean manufacturing influences financial performance (Fullerton & Wempe, 2009).

### Lean Manufacturing

Lean manufacturing idea has its roots in the Japanese automobile industry during 1950's. The name of Japanese company was Toyota that was commonly known as “Toyota Production System (TPS)” (Gupta & Jain, 2013). Toyota Production System took this initiative with the purpose of reducing cost and improving and productivity by minimizing waste of operations or discarding non-value-added operational activities. Nordin et al. (2012) stated that the idea of assembly line combined with the efficiency enhancement of the Toyota Production System was the key purpose of lean production. The systematic elimination of waste focus on lean manufacturing that are business operations by adopting a set of synergistic work

practices to manufacture goods and services in response to demand (Shah & Ward, 2007). Lean practices also signify various concepts that may be combined with the other business practices. According to Browning and Heath (2009), lean production is the system that have focus on the reduction of wastes and discarding non-value-added steps in the operations of a business.

In response to the oil crises of the early 1990's, lean manufacturing was globally acknowledged and adopted by the organizations in order to achieve benefits of cost, excellence, flexibility and early response (Schonberger, 2007). According to Mostafa, Dumrak, and Soltan (2013), it has purpose to attain smooth manufacturing flow by minimizing waste and by enhancing the value-added activities. Moreover, it is difficult for business to compete with the others in the era of global competition with respect to quality, quick delivery and reduced costs by ignoring the practices of lean manufacturing. R. Jadhav, S. Mantha, and B. Rane (2014) concluded that lean practices result in the greater business performance. Since the 1980s, researchers are attempting to understand the outcomes of lean practices with respect to SMEs. Moreover, practically continuous attempts are made implement lean practices for operational and organizational advancement (Bakri et al., 2012). Krafcik (1988) in his study first time used the term “Lean” with the perspective of Toyota Production System (TPS) in his research at Massachusetts Institute of Technology. Core purpose of the lean practices was considered to be waste and lead times reduction (Manfredsson, 2016). The researches have highlighted the seven categories of waste that are included modification, over-production, motion, material delivery, waiting, stock and producing (Godinho Filho, Ganga, & Gunasekaran, 2016). Evaluation of lean practices and impact on the performance limitations harmonizes and indicate the reduction in the cost and lead time (Pullan, Bhasi, & Madhu, 2013; Wong, Ignatius, & Soh, 2014) that is according to the key purpose of lean practices. In the lean manufacturing, it is assumed that every participant of firm will put his analytical and mental input that ultimately will develop the improved culture of agility required to face the prevailing and potential market and cultural variation. There are empirical studies that attempted to comprehend the association of lean practices and development in business performance with regard to SMEs (Belekoukias et al., 2014; Sahoo & Yadav, 2018). Less attention has been paid to the SMEs in the effective strategy formulation (Singh et al., 2010).

Maximum number of the SMEs has a simple setup and operations that support flexibility and early response to the market demands as compare to larger firms (Panwar, Jain, & Rathore, 2015). Moreover, lean practices are the combination of various methods and tools that are implemented together for constant improvement with regard to recognise and remove waste in the enhancing flexibility. Among those methods and tools, some of them are value stream plotting, overall productive maintenance,

system discount, Kanban and pull manufacturing approaches, cellular production, graphic signs and procedure standardization. Beside its perception, the idea of lean practices has reasonably considered with regard to the SMEs in the recent decades by number of scholars with the purpose of making justification for the application of lean practices that may have impact on the performance outcomes of SMEs. Inappropriately, many of the SMEs have still not adopted the concept of lean manufacturing to enhance their operational efficiency (Panwar, Nepal, et al., 2015).

Lean production has its key focus on the reduction of wastes and discarding non-value-added steps in the operations of a business for productivity enhancement. However, Womack, Jones, and Roos (1990) highlighted in their book "Machine that changed the world" that lean production is the combination of numerous practices that are supposed to enhance efficiency, excellence and customers responsiveness. Additionally, Wickramasinghe and Wickramasinghe (2017) define lean manufacturing as "initiative, whose goal is to reduce the waste in human effort, inventory, time to market, and manufacturing space to become highly responsive to customer demand while reducing world class quality products in the most efficient and economical manner". It is regarded as a method that streamlines the manufacturing flow by minimizing waste and enhancing operational value. Furthermore, some of the researchers have opinion that by ignoring lean manufacturing approach in the contemporary globalized competitive corporate culture, firms will be unable to compete with their competitor with respect to quality, quicker delivery and less cost. However, Shah and Ward (2003) classified into four dimensions that are associated with it. These dimensions are Just-in-Time, Total Preventive Management, Total Quality Management and Human Capital. The components of Lean manufacturing process are Just-in-time (JIT) and Quality management. Power and Sohal (2000) argued that Just-in-time is incessant development and indirectly to commit to overall quality with the contribution of all the human capital that aims to produce only what is needed and based on demand to minimize the number of manufacturing. The general objective of Just-in-time is to continuously make development of quality, business profitability and flexibility (White & Prybutok, 2001). Alcaraz et al. (2014) state Just-in-time using materials and waste managing in a business with lean manufacturing management is an element of making simple the manufacturing system and minimize stock levels at every stage to identify problems and quickly find solutions. Singh and Garg (2011) recognize the definite key purpose of the Just-in-time approach is to include all workers in their reduction and expose hidden problems. Just-in-Time methodology recognized to attain competitiveness and quality for firms in response to the market requirements (Green Jr et al., 2014). Numerous Lean production tools have aim to eliminate unnecessary operations, process and services. According to Chen and

Hua Tan (2013) lean manufacturing is to diminish costs, advance procedures and remove waste with implementation Just-in-time that enhance profit margins as well as customer satisfaction. According to Yasin and Yavas (2003), businesses must have willingness in the progress and implementation of innovative production techniques likewise Just in Time, Advanced Production Technologies, and TQM in response to the demand for enhancing effectiveness, usefulness, and responsiveness regarding users.

Quality may be defined in the way that it is beneficial in its organization and that is the true demand of the client (Rawlins, 2008). The word quality has different meanings under different situations but on simplest way to define it will be the "extent to the degree to which a product meets the requirements of a customer or still simply, the fitness of a product or service for its intended use". Commonly, quality is associated with the excellence of goods and services. In the context of manufacturing firms, the term quality may be contextualizing to highlight the piece of material conforms to certain physical characteristics generally evaluated in the form of a particular description. Lean manufacturing practices has many tools but this research focuses on those lean tools that best fit the pharmaceutical environment such as kaizen, Quick changeover, JIT, jidoka, kanban, and andon.

### **Kaizen**

Kaizen is based on the rapid improvement effort that uses the quality circles to investigate specific identified problems or opportunities (Goni, Tharia, & Suryo, 2018). Ideally, organizations should strive to have at least one kaizen event per month and it should last for five days (Bwemelo, 2016). Such improvement strategy is important to draw on the talents and expertise of front line employees, and to break down the barriers among departments (Damrath, 2012). It refers to the "change for the better" and it covers the idea of advancing a process-oriented culture (TEKLU, 2014).

### **Quick changeover**

Quick changeover is the operational competency to transform something in a quick manner. Quick changeover is applicable to the areas that include operating, patient or investigative places. Management should be able to change the operating place from the previous operation to the next operation in a quick way that will allow more operations that ultimately will allow more patients to be accommodated with least waiting time (Sousa et al., 2009).

### **Just-in-time**

Just-in-time (JIT) approach refers to the reduction of waste by streamlining production operations, decreasing process time, managing material flow, and ensuring preventive maintenance of tools and mechanical assets. With the help of these initiatives, stock and assets can be eliminated and applied more effectively (Kannan & Tan, 2005). Just in time (JIT) is the supply of products in a short span of time. It is



applicable to materials as well as to processes, for example employees can avoid earlier transportation of customer from their accommodation to subsidiary sections where they have to wait for examinations, hence this would eliminate waste of motion, transportation, time, in addition to dissatisfaction of patients (Karpathiotakis et al., 2015).

### Kanban

Kanban is the method of choice for pharmaceutical material management, which is related to the inventory and materials to be procured and managed. It is about replenishment of empty bins with the required quantity of items. Also, by tracking the time between consecutive replenishments, the stocking quantities can more easily be refined and adjusted over time to maintain replenishment discipline (Papalexi, Bamford, & Dehe, 2016).

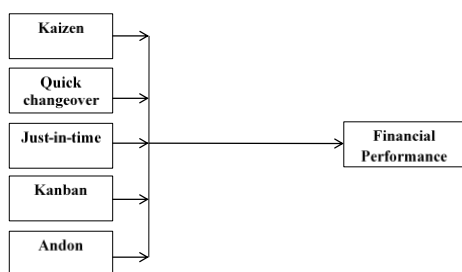
### Andon

Andon or “line stop” denotes to a process of informing management, preservation and other activities associated with quality or operational issues. It is a hoarding that combined the indication lights, audio signals, text, or other kinds of exhibitions to highlight that particular workstation with issues. The indication can be in the result of manual or automatic activation. This method will help workers in stopping of production when there is some fault found in the process (Li & Blumenfeld, 2006).

### Research Framework and Hypotheses

This section of the study presents the proposed research framework; the relationships being tested between lean manufacturing process and financial performance of pharmaceutical manufacturing firms in Thailand.

**Figure 1: Proposed research framework**



**H<sub>1</sub>:** Kaizen practice has a significant positive effect on financial performance in Thai pharmaceutical industry.

**H<sub>2</sub>:** Quick changeover practice has a significant positive effect on financial performance in Thai pharmaceutical industry.

**H<sub>3</sub>:** Just-in-Time practice has a significant positive effect on financial performance in Thai pharmaceutical industry.

**H<sub>4</sub>:** Kanban practice has a significant positive effect on financial performance in Thai pharmaceutical industry.

**H<sub>5</sub>:** Andon practice has a significant positive effect on financial performance in Thai pharmaceutical industry.

## METHODOLOGY

Research design is an important segment of research which serves as a roadmap to the attainment of research objectives. According to Schindler and Cooper (2003), research design is the foundation upon which other parts of research depend on, usually the research question. The study used non-experimental design, a situation in which the researcher has no control between predicting (independent) variables as a determinant of its effects on the criterion (dependent) variable. The study utilized the most common research design i.e. cross-sectional. Creswell and Zhang (2009) defined cross-sectional research design as the process that involves collecting data from a population only once at a particular point with the sole purpose of attaining the objectives of the study. Cross-sectional have been identified to save both time and cost (Sekaran & Bougie, 2016). Quantitative research technique was adopted by this study because this method of the research is considered most appropriate for the research of this kind with the perspective of time and cost (Langdridge & Hagger-Johnson, 2009). Quantitative study is commonly used for empirical evidences in the studies of social sciences and business. This study adopts Survey questionnaire method for data collection purpose and smart-PLS for analysis of data. Smart-PLS version 3.0 was used in testing the anticipated theoretical framework of the research. In PLS, model estimation is based on the attainment of certain set of statistics ranging for both measurement model and structural model.

## ANALYSIS AND DISCUSSION:

In this study, data analysis was conducted based on SEM through Smart PLS 3.0 software.

### Measurement Model Assessment:

The assessment of “measurement model” was carried out for the investigation of “reliability and validity” of construct. To measure the individual item “reliability, internal consistency reliability, convergent validity and discriminant validity” were determined using PLS 3. Reliability of outer model was evaluated through “cronbach's alpha” (Hair Jr & Lukas, 2014). The minimum value for “cronbach's alpha” is used 0.70 according to the suggestion of Hair Jr and Lukas (2014). “Convergent validity” is investigated through the value of CR, loadings and average variance extracted (AVE). Each variable attained an satisfactory loadings and the value of CR for every variable were higher than the accepted value that is 0.7 and value of AVE also above the standard value that is 0.5 as endorsed by Hair Jr and Lukas (2014). The discriminant validity is the extent to which items measure distinct concepts. For the examination of “discriminant validity” the criterion of Fornell and Larcker (1981) followed.

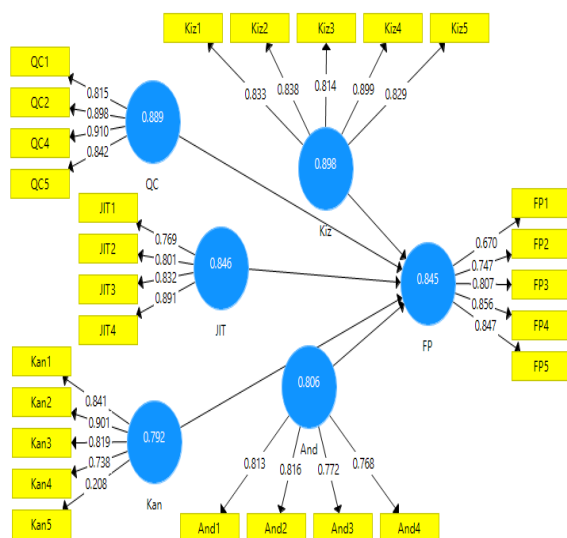


Figure 2. Measurement Model Assessment

Table 1: Values of alpha and CR:

Constructs	Cronbach's Alpha	CR	(AVE)
And	0.806	0.871	0.628
FP	0.845	0.891	0.622
JIT	0.846	0.894	0.680
Kan	0.792	0.847	0.556
Kiz	0.898	0.925	0.711
QC	0.889	0.924	0.752

Table 2 presents that the “square root of AVE” construct validity.

Table 2: Discriminant Validity

Constructs	FI	SEM	SP	SPD	SPM	SSC
And	0.792					
FP	0.676	0.788				
JIT	0.580	0.527	0.824			
Kan	0.500	0.516	0.411	0.745		
Kiz	0.560	0.719	0.439	0.580	0.843	
QC	0.604	0.544	0.634	0.329	0.449	0.867

Structural Model:

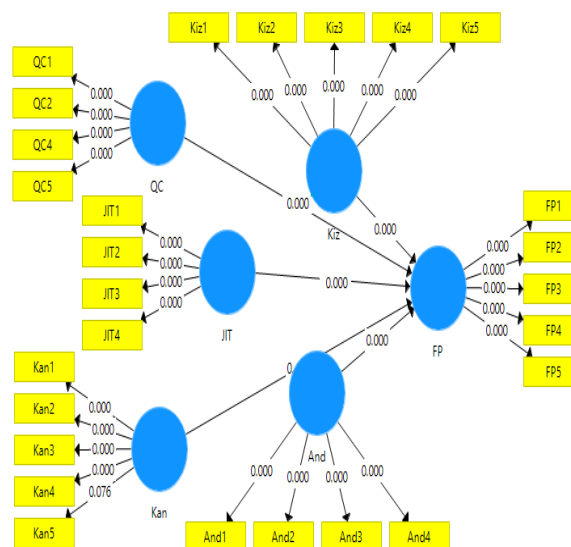


Figure 3. Structural Model Assessment

Table 3. Structural Model Assessment

Relationships	(β)	(STDEV)	T Statistics	P Values
Kiz -> FP	0.449	0.068	6.611	0.000
QC -> FP	0.301	0.073	4.123	0.000
JIT -> FP	0.275	0.057	4.824	0.000
Kan -> FP	0.043	0.054	0.798	0.425
And -> FP	0.298	0.064	4.657	0.000

The objective of this was to investigate the effect of lean manufacturing practices on financial performance of Thai pharmaceutical manufacturing firms. To assess the proposed association among the variables, 500 bootstrapping procedure was adopted. The results of the analysis show that kaizen practice has significant relationship with the financial performance of Thai pharmaceutical manufacturing firms. The  $\beta$  value 0.449 elucidated that kaizen practice positively effect to the financial performance Thai pharmaceutical manufacturing firms. The t-value 6.611 and p-value 0.000 exemplified that  $H_1$  is accepted on statistical ground. Results also show that quick changeover practice also significantly affects the financial performance of Thai pharmaceutical manufacturing firms. The  $\beta$  value 0.301 explained that quick changeover practice has positive influence on the financial performance of pharmaceutical manufacturing sector in Thailand. The t-value 4.123 and p-value 0.000 exemplified that  $H_2$  is supported and accepted at 1% level of significance. Study also found significance association between Just-in-Time practice of lean process and financial performance. Results of study indicated that Just-in-Time

practice has positive association with financial performance of pharmaceutical manufacturing sector in Thailand.  $H_3$  is accepted at 1% level of significance that is supported by statistical analysis. Results of this study illustrated that Kanban practice has no significant relationship with financial performance of Thai pharmaceutical manufacturing sector. The t-value 0.798 and p-value 0.425 exemplified that  $H_4$  is rejected on statistical grounds. Moreover, study found that Andon practice of lean manufacturing process also has positive and significant influence on financial performance of Thai pharmaceutical manufacturing sector. The t-value 4.657 and p-value 0.000 represented that  $H_5$  is accepted on statistical grounds.  $H_5$  is significance at 1% level of significance.

## CONCLUSION

The objective of current research study was to investigate the association between lean manufacturing practices (kaizen, Quick changeover, JIT, jidoka, kanban, and andon) with financial performance of pharmaceutical manufacturing firms in Thailand. This study adopted quantitative research approach with cross-sectional method and data was gathered by using survey questionnaire. For the analysis of collected data, PLS statistical software and data was analysed by assessing measurement and structure model. Outer model was investigated through assessing the measurement model and hypotheses of study were tested through structure model. Findings of study indicated that lean manufacturing practices have significant association with financial performance of Thai pharmaceutical manufacturing firms. But the study found that there is no significant relationship with Kanban practice of lean manufacturing process and financial performance of Thai pharmaceutical manufacturing firms. Findings of this study elucidated that lean manufacturing practices are crucial for the financial performance of pharmaceutical sectors. Implementation of lean manufacturing practices in manufacturing of pharmaceutical product could significantly enhance financial performance of pharmaceutical sectors through controlling cost and improving the processes. Findings of research present practical insight for pharmaceutical industry. The increasing financial performance in the pharmaceutical sector will be encouraging the implication of lean manufacturing. By using lean manufacturing system, pharmaceutical companies can improve their quality product, reduce cost, and getting the quality time. The implementation of lean manufacturing in manufacturing company has proven that the system and process will enable the companies and also its supplier to improve their cycle time, greater governance or control and enable timely information exchange to support the business trade that ultimately increase the profits of the companies.

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