PalArch's Journal of Archaeology of Egypt / Egyptology

A STRUCTURAL EQUATION MODEL OF A LEAN PRODUCTION SYSTEM, QUALITY OF WORK LIFE, AND ORGANIZATIONAL PERFORMANCE OF THE AUTO PARTS INDUSTRY IN THAILAND

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Apiwat Krommuang, Opal Suwunnamek.A Structural Equation Model Of A Lean Production System, Quality Of Work Life, And Organizational Performance Of The Auto Parts Industry In Thailand-- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(1), 428-444. ISSN 1567-214x

Keywords: Heritage, Unesco Convention, Environmental Governance, Meas

ABSTRACT

This study aimed to analyze a structural equation model of a lean production system and quality of work-life affecting the organizational performance of auto parts businesses in Thailand. The conceptual framework was taken from reviewed literature to determine the mentioned variables on their direct, indirect and total effects on organizational performance. 520 respondents comprising top and middle managers from auto parts businesses in Thailand were randomized by purposive sampling. SPSS and AMOS programs were used as analysis tools. The results showed that a lean production system had a significant and direct effect on quality of work-life and organizational performance. In addition, it had a significant indirect effect on organizational performance through the quality of work-life.

INTRODUCTION

The development of the automotive industry in Thailand has occurred over 50 years. It has shown the highest production performance in ASEAN, especially after Thailand's liberalization program in 1991. The volume of domestic sales and auto assembly has increased continuously, including production, marketing, employment, technology development, domestic investment, and linkage to related industries. Thailand has a locational advantage due to its position in the center of the ASEAN region, as well as having a huge domestic market and investment promotion policy. This results in the progressive attraction of automotive investments from abroad [1].

Thailand has been known as a production base for automotive producers from over the world. Automotive production in 2015 reached 1.92 million units,

ranking 12th in the world and the top in ASEAN (OICA, Organisation Internationale Des Constructeurs D'Automobiles). In 2016 and 2017, the volume was 1.94 and 1.98 million units, respectively. From the year 2018, the volume was 1.42 million units for the first 8 months, higher than the same period for the year 2017 by about 10.37% [2].

The core industry that has pushed the automotive industry on the road to success for many years is the auto parts industry [3]. The auto parts industry is one of the important supply chains in the Thai automotive industry. It has long been promoted by the Thai government. In addition, Thailand is at the center of major auto parts assembly for vehicles from foreign countries, such as batteries and electronic devices. It can be said that Thai auto and parts industries have a high level of competitiveness [4]. However, the patterns for buying behavior on vehicles have changed. Designs have shifted to be in-trend, and eco-friendly vehicles have gained popularity, especially electric vehicles, replacing gasoline, which seriously affects the auto parts industry. Parts that can be utilized for conventional motors must be adapted to be compatible with electric motors and battery systems. The automotive and auto parts industries in Thailand have to develop production standards for auto parts in the direction that has signaled. Further, auto parts production needs innovations and skilled laborers to increase competitiveness [5].

To achieve such change, auto parts businesses need to develop more efficient production and higher quality to respond to the needs of automotive businesses. A lean production system is a technique used to eliminate waste in the production process, focusing on the analysis of customer wants, the reduction of waste in the production process, and value addition in the production process, in order to get efficient products at a lower cost and in less time, as well as to deliver the right product at the right time. This system is operated by major automotive makers to increase efficiency in auto production. [6, 7, 8]

As for the auto parts businesses, this system has been utilized gradually, especially among direct partners of the auto businesses. However, some companies have failed due to a lack of training for their employees, in line with the new system that has been brought into the companies. The operation manual following the quality of work-life is one of the main issues to increase the quality of employees in the organization. To help the organization succeed, prior consideration that this system can improve the quality of work-life is necessary, apart from having a good work system [9].

The causality of the lean production system and quality of work-life affecting the organizational performance of auto parts businesses in Thailand will be examined and analyzed. Auto parts businesses in Thailand are expected to adjust themselves in line with the direction signaled from the customers by improving efficiency and quality of work-life must be developed accordingly [10]

Due to the changing needs of the auto industry, as aforementioned, it can be seen that the auto parts industry requires adjustment in order to be in

compliance with the direction of such needs. Production efficiency must be enhanced for better efficiency and quality [10], along with the development of the quality of employees. Therefore, this study concentrated on the relationships between the lean production system and quality of work-life affecting organizational performance of auto parts businesses in Thailand.

Objectives of the Study

To examine and analyze the structural equation model for a lean production system and quality of work-life that has a direct effect on the organizational performance of auto parts businesses in Thailand.

To examine and analyze the structural equation model for a lean production system and quality of work-life that has a direct effect on the organizational performance of auto parts businesses in Thailand.

To explore the consistency of the structural equation model, comparing the data gained from reviewed literature and empirical evidence in order to develop the structural equation model and to suggest operational developments.

LITERATURE REVIEW

Lean Production System

The lean production was originated by Toyota Motor Company in the 1950s, which was called the "Toyota Production System." The lean concept has been developed and applied in various plants, becoming managerial principles focusing on the reduction of non-value added activities in the value chain by eliminating waste [11]. In traditional process improvement, operations that had no value-added activities were reduced. The impact was that value-added activities were removed in the interim. The lean concept aims to view all the activities in the process and to classify the "value" and "non-value" activities. Based on the concept, non-value activities will be eliminated as much as possible [12, 13].

By the Lean concept, waste, or "muda" in Japanese, can be classified into 7 categories, namely Overproduction, Waiting, Transportation, Non-Value Added Processing, Excess Inventory, Defects, and Excess Motion [14]. Lean production focuses on agility for changes in organizational management, such as the change of customer behavior, new products, new methods, new employees, etc., to manage resources in order to deliver value to customers, while reducing waste and developing continued operation processes [15, 16].

Groups of activities relating to lean production comprise 3 main parts, namely activities relating to producers, those for customers, and those within the organizations. These 3 main parts can be cut into 10 operational structures [17]. From literature, variables relating to the lean production system can be concluded into 10 dimensions, namely (1) Supplier Feedback (SF), (2) JIT Delivery (JD), (3) Developing Suppliers (DS), (4) Involved Customers (CI)

(5) Pull (PL), (6) Continuous Flow (CF), (7) Low Setup (LS), (8) Controlled Process (CP), (9) Productive Maintenance (PM) and (10) Involved Employees (IE) [17, 18, 19, 20].

Quality of work life: QWL concept

The basic QWL concept arose from Maslow's hierarchy of needs, implying that humans must be satisfied first in terms of physiological needs and safety needs [21] before moving further to other things and before reaching higher needs. Later, a number of academicians tried to define the term "quality of work-life" in similar meanings. To clarify, the quality of work-life is a key tool aiming to motivate employees to work for organizations with efficiency and sustainability. This is because it is a principle that considers all dimensions needed by employees, apart from compensation. This brings total life space, leading to happy operation and organizational commitment. As a result, each organization will find guidance for increasing the quality of work-life in order to keep the best employees as well as to attract more capable employees to their organizations. Promoting happiness and good quality of life is necessary, both for individuals and society. Therefore, many organizations apply the QWL concept as a strategic tool for human resources management.

Quality of work life is currently a necessary management principle because humans are necessary resources to organizations. Therefore, internal environments, atmospheres, and work management must facilitate the operation of employees. To clarify, they must make employees feel good about their work, with security and happiness. In the end, this will bring advantages for the individuals and organizations as follows.

Organizational productivity: QWL management brings organizational policies and planning for quality of life, along with QWL development strategies in different aspects, i.e. work, personnel, and good environments that have direct and indirect effects on operation, resulting in higher organizational productivity.

Increased employee morale: Good quality of work-life brings employee satisfaction towards their work until it becomes work motivation, organizational commitment, and loyalty.

Improved employee efficiency: QWL development can be done by providing opportunities for employees to accumulate skills and capacities through studies, training, or development for higher wok efficiency [22].

According to the literature review, mainly based on the concept of Walton (1973), the factors of quality of work-life were concluded into 8 aspects, i.e. (1) AF (Adequate and Fair Compensation), (2) SH (Safe and Healthy Work Condition), (3) GS (Growth and Security), (4) DH (Development of Human Capacities), (5) SI (Social Integration), (6) CN (Constitutionalism), (7) TL (Total Life Space), and (8) SR (Social Relevance) [22, 23, 24, 25, 26].

Organizational performance

Organizational performance refers to the abilities of organizations in different aspects to achieve their goals, which can be measured in various dimensions including organizational characteristics. For example, the measurement of business organizational performance may be done based on marketing, production, financial, or responsiveness abilities. According to general organizational viewpoints, however, there are some popular organizational ability indicators, e.g. work efficiency, work quality, cost management and financial abilities [27, 28]. Nowadays, organizations are facing similar problems, including changes related to organizations, human behavior, technological changes, crises, organizational risks due to different causes, competitive pressure, and limited resources for management. Therefore, executives must find out how to increase organizational performance in order to get ready to deal with these problems so that their organizations will have the efficiency to compete with others.

This study concentrated on finding the relationships between the factors increasing organizational performance. It started from a literature review to find the variables for organizational performance measurement. 5 key indicators were concluded, which are usually used for organizational performance follow-up and examination, i.e. (1) QU = Quality, (2) CO = Cost, (3) TI = Timeliness, (4) EF = Efficiency, (5) AC = Accuracy.

Research Scope

Population and Samples

The population in this research consisted of middle and top executives, including chiefs to managers, of auto parts production and distribution businesses in Thailand. These executives have a necessary influence on business growth. Their duties include administration/management and solving major problems. This is survey research, in which a questionnaire was used. No limitations of sex, age, education level, or years of experience were involved. There were a total of 520 samples for data collection.

The samples were obtained by purposive sampling, a type of nonprobability sampling. Specifically, the chosen organizational executives had knowledge of the lean production system, as well as the quality of work-life. Then, convenience sampling was used because the samples, as middle and top executives, could not be reached for data that easily. The respondents were set by calculating the conditions of SEM analysis, to which the sample size criteria of 20/parameter were used for 1 variable estimation [29]. The minimum criteria to set a sample size for SEM analysis require 5-10 respondents/parameters for variable estimation. Conversely, the smallest sample size for SEM analysis that is acceptable might reduce to 100-150 samples only if the data is complete, with a strong scale.

Variables Used for Measurement

According to the literature review, 2 independent variables were concluded, i.e. the lean production system and quality of work life. One dependent variable was concluded, i.e., organizational performance in auto parts businesses in Thailand. Both types of variables were classified as latent variables and observed variables, as shown in Table 1.

Table 1: Concluded variables for the initial model

Latent variables	**Observed variables**
Lean production system	(1) SF = Supplier feedback (2) JD = JIT Delivery (3) DS = Developing suppliers (4) CI = Involved customers (5) PL = Pull (6) CF = Continuous flow (7) LS = Low setup (8) CP = Controlled process (9) PM = Productive maintenance (10) IE = Involved employees
Quality of work-life	(1) AF = Adequate and fair compensation (2) SH = Safe and healthy work conditions (3) GS = Growth and security (4) DH = Development of human capacities (5) SI= Social Integration (6) CN = Constitutionalism (7) TL = Total life space (8) SR = Social relevance
Organizational performance	(1) QU = Quality (2) CO = Cost (3) TI = Timeliness (4) EF = Efficiency (5) AC = Accuracy

According to the literature review, the conceptual framework and hypotheses are concluded in Figure 1.

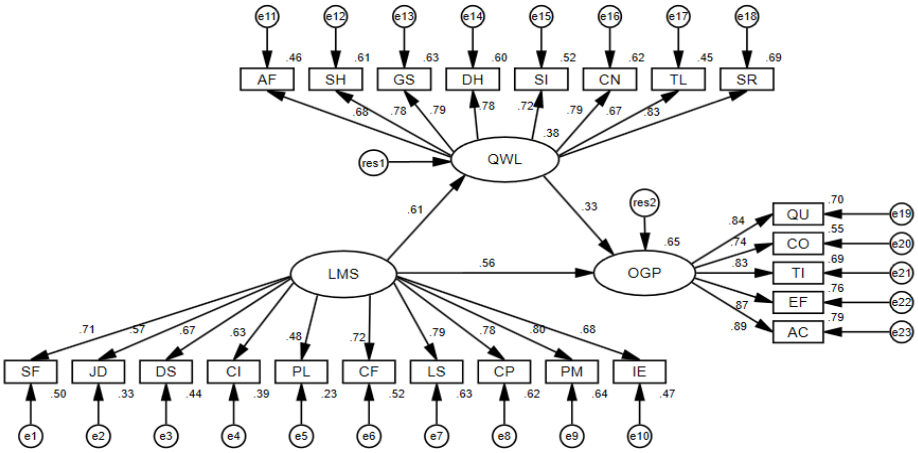


Fig 1: Conceptual Framework

Hypotheses

H1: The lean production system has a direct effect on organizational performance.

H2: The lean production system has a direct effect on the quality of work-life.

H3: Quality of work life has a direct effect on organizational performance.

Results

Data Analysis

It started from a confirmatory factor analysis of each latent variable in order to confirm that each observed variable could be used for latent variable measurement based on the conceptual framework. Then, all relationships were analyzed by SEM analysis based on the hypotheses. AMOS was used, starting from setting the diagram of the relationship model among all variables. Paths among variables from the literature review were also identified. Then, the data obtained from the survey of the initial data was analyzed for the results. Statistical values were considered to find the goodness of fit (congruence between the model of empirical data and the initial model). The results of the structural model were considered based on the statistics in Table 2 [29].

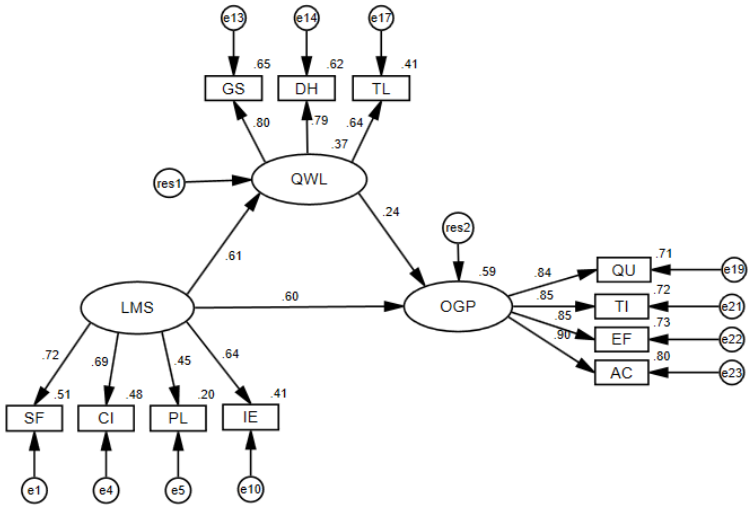
Table 2: Statistical criteria for the goodness of fit evaluation

Index (Goodness of Fit)	**Criteria (Recommended Value)**	**Consideration Results (Structural Model Results)**
χ^2 test statistics/df	$\leq 3.00^a$	3.510 (p=0.000)
GFI	$\geq 0.90^a$	0.876

AGFI	≥0.90 [a]	0.849
CFI	≥0.90 [a]	0.925
NFI	≥0.90 [a]	0.898
RMSEA	≤0.08 [a]	0.070

Source: Hair et al. (2010)

According to Table 2, it was found that the results for goodness of fit examination passed the criteria, with Chi-square = 3.510, GFI = 0.876, AGFI = 0.849, CFI = 0.925, NFI = 0.898, and RMSEA = 0.070. Therefore, it can be concluded that the model of empirical data was congruent with the initial



model. The results of relationship analysis and variable effects can be described as in Figure 2 and Table 3.

Fig 2: Results of SEM analysis between management principles across organization and quality of work-life affecting employee efficiency

Table 3: Results of SEM analysis after adjustment **(**Fit Model)

Variable	**Estimate**		**Standard Error**	**Critical Ratio**	**P-Value**
	Coef.	**Standardized Regression Coef.**			
QWL<--- LMS	.662	.611	.067	9.930	***
OGP<--- LMS	.647	.600	.073	8.888	***
OGP<--- QWL	.235	.237	.057	4.107	***
QU<--- OGP	1.000	.842			
TI<---OGP	1.157	.846	.049	23.822	***
EF<---OGP	1.070	.854	.044	24.200	***

AC <--- OGP	1.063	.896	.041	26.089	***
TL <--- QWL	.996	.643	.073	13.625	***
DH <--- QWL	1.180	.787	.074	15.935	***
GS <--- QWL	1.000	.803			
SF <---LMS	1.000	.718			
CI <---LMS	.928	.689	.070	13.185	***
PL <--- LMS	.897	.447	.100	8.934	***
IE <---LMS	1.062	.638	.086	12.384	***
$R^2_{QWP} = 0.37$, $R^2_{OP} = 0.59$					

*** Significance level < 0.001

According to the SEM analysis in Figure 2, it was found that the lean production system had a significantly positive and direct effect on the quality of work-life, with a standardized regression coefficient = 0.611 and p-value < 0.001. The lean production system could describe the variance of quality of work-life at 37%. According to direct effect analysis, it was found that the lean production system had a significant direct effect on organizational performance, with a standardized regression coefficient = .600 and p-value < 0.001. The lean production system could describe the variance of organizational performance at 59%. Quality of work life had a significantly positive and direct effect on organizational performance, with a standardized regression coefficient = 0.237 and p-value < 0.001. Quality of work life could describe the variance of organizational performance at 59%. According to the analysis of Fig 2, it was found that the lean production coefficient had an indirect effect on organizational performance, with a standardized regression coefficient = .146.

It can be concluded that the relationships of SEM in the lean production system had a direct effect on the quality of work-life and organizational performance. There was also an indirect effect on organizational performance through the quality of work-life. The results of hypothesis testing can be concluded as in Table 4.

Hypotheses	**Path**	**Estimate**	**S.E.**	**C.R.**	**P-Value**	**Remarks**
H_1	LMS -> OGP	0.600	0.073	8.888	<0.001	Supported
H_2	LMS -> QWL	0.611	0.067	9.930	<0.001	Supported
H_3	QWL -> OGP	0.237	0.057	4.107	<0.001	Supported

According to Table 4, it can be concluded from the results of hypothesis testing that the lean production system had a significant direct effect on the quality of work-life and organizational performance at a confidence level < 0.001 ($p<0.001$). Quality of work life had a significantly positive and direct effect on organizational performance at the confidence level < 0.001 ($p<0.001$). Therefore, H1, H2, and H3 were accepted. Moreover, it was found that the lean production system also had an indirect effect on organizational performance through the quality of work-life according to the results of SEM analysis.

DISCUSSIONS

According to the study results of SEM for the lean production system and quality of work-life affecting organizational performance in auto part businesses in Thailand under lean product system, it was found that the lean production system had a direct effect on the quality of work-life and organizational performance. Likewise, the quality of work-life had a direct effect on organizational performance. That is because all aspects focused mainly on promoting involved employees, knowledge sharing, and work happiness. Therefore, employees expressed more self-dedication and attention to work. The lean production system also had an indirect effect on organizational performance through the quality of work-life, because the lean production system was only a management tool, while the actual performers are employees who drive the operation. Therefore, organizations must prepare their employees or bring good quality of work-life as it affects employee happiness or the work system of either all employees or individuals. This will eventually lead to better organizational performance.

Sem For Applied Lean Production System Affecting Organizational Performance In Auto Parts Businesses In Thailand

According to the study results of the lean production system affecting organizational performance in auto parts businesses in Thailand, 4 aspects of the variables were found as follows.

Supplier feedback: The auto parts industry is a key part of the supply chain in the automotive industry of Thailand. It has been promoted by the Thai government continuously. Also, Thailand is an assembly center for auto parts from several countries, e.g., batteries and electronics equipment. A car basically consists of thousands of parts. Suppliers in Thailand must rely on certain imported materials, including global purchasing policies of auto parts assembly leaders. Therefore, supplier feedback or updated feedback on performance is necessary for middle and top executives as well as to organizational performance because it is two-way communication between feedback providers (supervisors/customers/next departments) and receivers (subordinates, employees). It may also refer to information/data transfer between organizations and their related businesses, with the goal to acknowledge efficient performance and which parts of the processes to fix. Therefore, performance is acknowledged for further improvement, work control under the scope of personal responsibilities, increasing better

performance in compliance with organizational goals, and no work waste in the future due to wrong performance. That is why supplier feedback is necessary, especially in terms of feedback concerning quality and delivery. Relationship enhancement for the development of the entire supply chain is also taken into consideration [13, 17, 30, 31].

Involved customers: Customers currently give precedence to business conduct more than before. Their involvement in terms of feedback on development, design, or knowledge sharing with suppliers brings their direct involvement with products and services, such as feedback on the quality, delivery, or problems caused by services. This can affect current and future products. When middle and top executives acknowledge customer needs or problems, they will be able to respond to customers in a better way, thus conforming to customer needs. That is because middle and top executives have the authority for decision-making, control, and command to get all jobs done in compliance with organizational goals. Therefore, organizations should regularly conduct a survey on customer satisfaction in order to catch up with future changes in customer needs [13].

Pull: It is an exclusive technique of the lean production system or Toyota production system (TPS), totally different from "push." For the latter technique, predictive principles are used for resource utilization planning to implement each step. Therefore, production schedules are prepared in advance, with materials ordered for stock. As a result, responsiveness and urgent changes move on with difficulty for controllers. Also, organizations have to waste large amounts of money on investment costs. For these reasons, Pull is a technique developed to respond to customer needs or the next department's needs at a certain time. Employees acknowledge their jobs to be done and can manage their work plans more systematically. Pull does not cause waste of overproduction that may result in other waste, e.g., overstock. When there is no overproduction because of employee acknowledgment, as aforementioned, it will be easier to notice normal and uncommon conditions in the plants. Further, it will be more convenient for employees to work. Cost drown in the inventory will be lower than other plants under the push system. This technique facilitates fast customer responsiveness, along with quality products and low production costs. These are the 3 key factors for the competitive ability of auto parts suppliers' plants [17, 30, 31, 32, 33].

Involved employees: There are many factors for business success and organizational success. Similarly, there are other factors nourishing the survival of organizations. The key factors that partly take an organization to its goals are human resources at all levels. Both operational and top executive levels are necessary for operation. Personnel development is required for full use of their efficiency, who must also be promoted to be willing to apply their knowledge and abilities for the best development of the organizations. When organizations get capable employees for work, they must develop any method to motivate employees' hearts for their full effort on work. It is like letting employees realize that their organizations give precedence to humans. Employee commitment is also required, along with the acknowledgment of involvement and expected benefits from efficient cooperation. This is because

individuals are the resources that drive organizational work, e.g. idea and knowledge sharing among middle executives, top executives, and operational employees; management styles that let employees involve in organizational decision-making process; giving opportunities to employees and supervisors to take key roles in problem-solving teams, to involve in projects and suggestions, to be leaders of product and process adjustment, and to join cross-functional training [7, 13, 17, 30].

When considering the model fit of the observed variables, however, i.e. JIT delivery, developing suppliers, continuous flow, low setup, controlled process, and productive maintenance, it failed to conclude the significant effects on organizational performance. This might be because the system focused mainly on building the process or using management tools properly, without relating to employees directly. Unlike supplier feedback, involved customers, pull, and involved employees directly affected employees. To apply those variables in order to make employees see their importance, the organization must improve or prepare employees first in terms of outcomes from using the system or tools in order to prove that those things can bring higher efficiency from employees or that they can facilitate work and reduce employee fatigue from work.

Sem For Applied Quality Of Work-Life Affecting Organizational Performance In Auto Parts Businesses In Thailand

Although auto parts suppliers focus mainly on the development of production technology to replace manpower, overall, the automotive industry still highly relies on manpower, especially highly skilled labor, and efficient executives. Therefore, each organization must keep these human resources in their best effort. The arrangement of quality of work-life as a tool is currently an interesting topic for many organizations and is widely applied. Quality of work-life refers to the level of overall satisfaction in individuals towards their life in the workplace, including duties, co-workers, organizations, environments, occupational structure, and income. Satisfaction basically arises from employee responsiveness. To clarify, organizations allocate resources, activities, and outcomes from involved employees [25, 34, 35]. It can also be said that organizational success does not only come from a well-organized system, but also from the consideration of expected benefits or good quality of work-life for employees as the first priority [9]. According to the study results of the factors for quality of work-life affecting organizational performance in auto parts businesses in Thailand, 3 aspects of the variables were found as follows.

Growth and security: Although middle and top executives enjoy high compensation as well as responsibilities, they still need career growth, especially the security of the work they are in charge of. That is because executives are in the age range that has burdens from taking care of a family and the people around them as well as other burdens. Therefore, if the tasks or responsibilities of such employees at those levels are frequently altered, or their feelings of work security are destroyed, it will greatly affect them and the people who rely on them. Finally, it will result in boredom and looking for a new job. If organizations can make employees feel secure in their jobs, with

opportunities for career growth, their love and commitment towards the organizations will grow. As such, they will be ready to devote their ability to work with good performance as well as for organizational growth and sustainability. [23, 36].

Development of human capacities: Although middle and top executives already have knowledge and capacities, current knowledge keeps developing and changing unceasingly. For example, innovations are brought to be used as tools to increase organizational products, while technological systems are brought for work management. For this reason, most executives are usually aware of the necessity for development in order to increase their own capacities and knowledge as well as those of employees, such as by providing training to increase capacities of work with new technologies or assigning challenging jobs for new knowledge acquisition. The development of human capacities will affect organizational performance because executives will be developed, as will their confidence to respond to such current change. [13, 23, 37]

Total life space: People currently give more precedence to their personal lives. In the past, they focused mainly on compensation or income as the first priority, which often caused problems of reduced quality of their life, e.g. health problems or family problems. However, there is more consideration nowadays for total life space. This can be seen by the need for more time to exercise, better health care, and travel among employees. It can also be noticed by the growth of health and tourism businesses through the years. When employees feel happy about their work and have total life space, it will lead to happiness to work with full benefit for the organization. As a result, the organization will gain the most advantages. [23, 24]

After considering the fit model of the observed variables, i.e. adequate and fair compensation, safe and healthy work conditions, social integration, constitutionalism, and social relevance, there remains an inability to conclude their significant effects on organizational performance. This might be because compensation and safety are basic needs that all employees should get. Also, the samples in this study were middle and top executives, who already have high compensation and typically do not perform risky jobs, unlike the employees at the operational level. Therefore, no significance from the effect was found. As for social integration, constitutionalism, and social relevance, these might not bring direct benefits to executives or the organization. Similarly, they might not be affected by these factors. Therefore, no significance from the effect was found. However, growth and security, the development of human capacities, and total life space directly relate to employees. They lead to development, growth, and happiness with work. That is why organizational commitment is deemed significant. If organizations bring happiness to their operation and the personal lives of employees, the final result is full self-dedication to work by those employees and effective organizational performance.

According to the results of this research, it can be concluded that the lean production system and quality of work-life are the key aspects of efficient

organizational success. [6, 31]. Therefore, organizations must give precedence to the simultaneous development of operation in compliance with the lean production system and quality of work-life in order to accomplish goals, enhance production, and respond to the needs for applying innovation and technology efficiently. Besides, the business sector can also extend the results of this research to auto parts companies through second- and third-tier suppliers for continuous development in the supply chain. In term of factors affecting organizational performance, the results can also be compared between direct auto parts suppliers in Thailand and other research articles on global suppliers with production bases overseas so that it will be useful to suppliers in Thailand who must be prepared for self-adaptation to more severe competition in the future, in compliance with global purchasing policies for auto parts assembly.

Suggestions

This research aimed to study the model of the lean production system and quality of work-life affecting the organizational performance of auto parts production businesses in Thailand. The researchers presented the results of data analysis based on general data analysis principles, confirmatory factor analysis, and SEM testing. Therefore, the results obtained should only be described under the limitations of the research scope. Future research articles could add qualitative analysis by in-depth interviews or other techniques for more elaborate descriptions. Any other influential variables could also be added, e.g. total quality management (TQM), a quality management system across organizations, with the aim of building an organizational culture wherein all members are regarded as important and are involved in developing organizational operation continuously for customer responsiveness and satisfaction. This will surely enable business opportunities and competitive advantages. As for human resources, other variables may be taken into consideration, e.g. PMS (Performance management system, a working system designed to help executives measure the efficiency and effectiveness of their teams in order to find out whether or not their teams can accomplish the goals. What is more, this model could also be used to study the relationships in other businesses, though the details of different business types may affect relationships of SEM differently. [8].

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