



APPLICATION OF GREEN SUPPLY CHAIN MANAGEMENT PRACTICES ASSOCIATED WITH TOTAL QUALITY MANAGEMENT AND JUST-IN-TIME FUNCTIONS TO IMPROVE ORGANIZATIONAL PERFORMANCE IN MANUFACTURING COMPANIES

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ABSTRACT

Several prior studies have highlighted the importance of green supply chain management practices in enhancing organization performance but empirical evidences of its operational antecedents are limited. Therefore, the present study aims to evaluate the potential operating antecedents of green supply chain management practices. The present study is unique as it is intended to assess the combined effect of TQM and JIT on green supply chain management practices consequently enhancing organizational performance. For this purpose the data from 318 employees was collected from Indonesian manufacturing companies. The data was analysed using SmartPLS 3 software adopting PLS-SEM approach. The findings of the study revealed a positive relationship of JIT and TQM with green supply chain management practices. The findings also provide empirical evidence of the mediating effect of green supply chain management practices between the relationship of JIT, TQM and organizational performance.

KEYWORDS: Just-in-Time (JIT), Total Quality Management (TQM), Green supply chain management practices

1. INTRODUCTION

Production businesses should react to adjustments within the requirements of equally ultimate and immediate buyers. As the consumers start demanding green services and products which are manufactured by processes that usually don't harm the ecosystem therefore, industries should adjust functions to focus such fresh consumer requirements (Boiral, Talbot, & Paillé, 2015).

It's been statistically proven that green supply chain management practices result in enhanced ecological capabilities and besides enhanced firm efficiency (Kusi-Sarpong, Sarkis, & Wang, 2016). It's essential to determine vital factors towards the application of eco-friendly supply chain management practices. A further study which highlights and also examines the effect of these factors is required. Within this research, we assess the blended effect that Just-in-time (JIT) and Total quality management (TQM) (that were known as the primary production packages (Flynn, Sakakibara, & Schroeder, 1995; Green, Inman, Birou, & Whitten, 2014), as well as eco-friendly supply chain practices have on ecological efficiency. Moreover, could the identified ability to get rid of each type of waste (JIT) and also to create as well as provide items that exactly complement consumer requirements (TQM) have a substantial effect on the capability of production businesses to effectively put into action ecological sustainability advancement plans leading to enhanced green performance? Particularly, are green supply chain practices, TQM and JIT harmonizing within which the three consolidated effects green efficiency much more than the effect of three within isolation?

Peng and Chung (2008) explain a "three zero manufacturing paradigm" which requires production supervisors to concurrently make an effort to accomplish zero stock, zero faults as well as zero ecological emissions and waste. Instinctively, this particular approach might be specifically influenced by a blend of JIT, TQM along with green source chain managing methods. Equally, TQM and JIT have already been seriously explored as well as started as traffic exchanges which result in enhanced organizational functionality through a concentrate on the elimination of waste materials out of all of the procedures, the demands of a person emphasis and also the generation of quality products as well as solutions which exactly meet up with consumer demands (Green et al., 2014).



Since TQM and JIT emphasize over the elimination of waste materials related to ineffectiveness and inefficiency, will they greatly assist initiatives to attain environmentally friendly sustainability? We create & empirically evaluate a design which features green supply chain practices, TQM and JIT, as well as organizational efficiency variables utilizing details through the respondents belongs to Indonesian production supervisors within an attempt to reply to the exploration issue. While many of the specific hypotheses within the research framework have already been evaluated, we discover simply no prior research which includes the managing advancement plans of green supply chain practices, TQM and JIT, as factors to ecological effectiveness. Various scientific studies have evaluated the specific effect of green supply chain practices, TQM and JIT, on the ecological operation as well as the researchers who look at the effect of the supply chain on ecological efficiency (Green, Toms, & Clark, 2015) but there is not a single study which evaluates the blended effect of these certain capabilities i.e. green supply chain practices, TQM and JIT, on ecological efficiency. These specific methods are necessary and it's essential to evaluate the combined impact of theirs on environmental sustainability as assessed by ecological performance.

The main ramification of the present study is thus to look at the blended effect of green supply chain practices, TQM and JIT, on ecological efficiency. The framework is developed in such a manner to technically determine TQM and JIT as essential exogenous variables to green supply chain practices and also ecological efficiency. We assume that the outcomes of this particular structured examination can certainly provide a major fresh insight towards sustainability studies suggesting production supervisors of the benefits of applying these particular methods in conjunction to considerably enhance the ecological efficiency of the manufacturing organizations of theirs.

An evaluation of the past research that features an explanation on the hypothesized framework is accompanied a dialogue on the strategy used to reply to the study issue relevant to regardless of whether TQM and JIT are essential elements for the improvement of green sustainability capabilities or perhaps if, when put together with green methods, the even bigger outcome is attained. The outcomes of empirical evaluation as well as summary depending on the outcomes are subsequently offered.

2. LITERATURE REVIEW

This particular part is structured like that the supporting principle is initially discussed as well as reviewed while the grounds for this particular research. After a dialogue of the common principle, the conceptual framework which snapshots the interactions between the research variables is offered. This particular design shows the way the independent variables of green supply chain practices, TQM and JIT, chain merge to favorably influence the dependent variable's ecological efficiency. Last but not least, hypotheses that represent each one of the connections within the framework is designed as well as complemented.

The conceptual grounds for this particular research stand out as the principle of complementarity (Tarafdar & Qrunfleh, 2017). Businesses are able to have cut-throat benefits by building mixtures of functional capabilities. Particularly, the mixture of green supply chain management practices, TQM and JIT, are business capabilities that might deliver cut-throat edge when coupled by production businesses. Green supply chain management practices, TQM and JIT, are complimentary within the sets of methods are jointly supporting. The blend of relevant methods results in a greater degree of green sustainability that is usually attained once the sets of methods are separately carried out.

The concept of sustainability was explained by Souza, Rosenhead, Salhofer, Valle, and Lins (2015) as the following phase within the evolution of production as it moves over and above the scrap dumping. Underutilized innovative personnel is most likely the waste product with ecological waste. This particular squandering suggests excessive or unnecessary utilization of materials and also toxic materials produced into the surroundings (Papa, Dezi, Gregori, Mueller, & Miglietta, 2018). As the main objective of JIT is reducing as well as prevent waste product whereas, TQM is all about creating issues correct initially, zero faults, continuous improvement and customer satisfaction (Flynn et al., 1995), it's rational to state that green sustainability practices tend to be more apt to flourish within a business atmosphere which pretty much includes TQM and JIT inside the production processes of its. This's perhaps as a result of waste materials, focused by production, which has green effects embedded (Papa et al., 2018).

TQM and JIT have proven working collectively to enhance efficiency, which means these both collectively produce better cost advantages (Flynn et al., 1995). Prior studies have found production as well as green sustainability not merely agreeable but supporting, therefore, setting up a harmony which leads to enhanced green and also organizational efficiency (Wiernik, Dilchert, & Ones, 2016). Furthermore, Flynn et al. (1995) recommended that effective TQM and JIT applications have equipped companies to adopt green sustainability opportunities as well as methods; thus, it's rational, based mostly the concept of complementarity, in order to suggest the blended effect of TQM and JIT strategies on green strategies might end up in a lot more advancement compared to every single applied individually. Further, to evaluate for concurrence, a single or maybe a lot more plans have to be demonstrated to make a good effect on the outcomes of an alternate system (Boiral et al., 2015). The present study argues that JIT, environmental practices, and TQM have complementary abilities that blend to enhance a business 's potential to attain green sustainability.

By and large, the research framework is arranged to assist evaluation belonging to the effect of TQM and JIT methods on green sustainability constituted like the setup of environmentally friendly supply chain management practices as well as enhanced ecological overall performance. In line with this, JIT strategies are theorized as favorably linked with TQM strategies, green supply chain management practices, and also green efficiency. TQM strategies are theorized as favorably related to green supply chain management



practices and also green efficiency. As a consequence of complementarity, Green supply chain management practices, TQM and JIT, together are theorized as owning a larger effect on green efficiency compared to the effect on the one by one practice. Last but not least, green supply chain management practices are theorized as favorably related to green efficiency.

The connection in between TQM and JIT strategies is extensively recorded. Flynn et al. (1995) state that "Just-in-time is closely correlated with TQM, with the ultimate goal of meeting or exceeding customer requirements." Some other investigators have realized that JIT methods as well as TQM methods blend and also have interaction to come up with concurrence which leads to enhanced efficiency (Flynn et al., 1995). Green et al., (2014) discovered that a useful setup of TQM is improved by the JIT setup. Furthermore, Cua, McKone, and Schroeder (2001) discovered a reasonably powerful, favorable association among TQM and JIT methods while Chen (2015) found a substantial, favorable connection among TQM and JIT methods depending on an evaluation of producers. Much more lately, (Green, Inman, Sower, & Zelbst, 2019) discovered a strong favorable connection among TQM and JIT based upon the evaluation of a test of manufacturing companies. Inside the structural design theorized by Cua et al. (2001), JIT is evaluated as an antecedent to TQM with the end result supporting the connection.

Green et al. (2015) describe the primary green supply chain practices as: "reduction of unnecessary and redundant components, the release of remanufactured and reusable components within the components stock, decrease of restocking times, unification of reverse materials as well as knowledge movement within the supply chain, ecological risk sharing, squander reduction, a decrease of transport lead period and also the effectiveness of source utilization". JIT is an enhancement plan made to eradicate types of squandering coming from the source, processing and also shipping and delivery procedures, as well as market the perfect utilization of materials all through the procedures (Chen, 2015), methods which instinctively ought to improve as well as assist the usage of green supply chain management practices. Certain elements of JIT, JIT-purchasing, and JIT-selling require integration and coordination with suppliers and customers (Green et al., 2014). The latest organizational relationships, for instance, all those discovered within particular aspects of JIT (JIT-selling and JIT-purchasing), must assist growing the concentration on green sustainability by using green supply chain management practices like eco-friendly buying as well as cohesiveness with clients. Basheer, Siam, Awn, and Hussan (2019) accounts that a variety of manufacturing businesses held pre-existing JIT features to allow for green sustainability endeavors with results that are good. Inside the study of ours, JIT is evaluated as a factor to green supply chain management practices, recommending that:

H1: JIT methods are positively and directly related to green source chain management practices.

Several scholars have observed the production element of JIT might bring about enhanced ecological functionality but discovered the connection in between environmental performance and green practices to become weakened within companies owning far more JIT exercise (Green et al., 2014). Nevertheless, (Cua et al., 2001) discovered expenditure in JIT methods to become significantly and positively related to green functionality. Lam, Lee, Ooi, and Phusavat (2012) explained about the outcomes of a variety of businesses who supported established TQM features to assist green sustainability initiatives. As TQM concentrates on creating products as well as solutions that exactly meet up with consumer requirements, the companies could enhance source allocation as well as employ. Furthermore, as consumers start demanding services and products which are ecologically helpful, the TQM buyer concentration is going to facilitate the integration of green sustainability as consumer demands ensuing within the development of services and products which don't harm the atmosphere (Siew- Yong Lam et al., 2012). Powell (1995) discusses the quality control is a significant factor for the profitable application of numerous green supply chain management practices. Elkington (1998) look at the use of total quality environmental management (TQEM) that concentrates on TQM features on getting rid of green waste materials. Their debate associated with TQEM implies that Environmental sustainability and TQM practices are appropriate and also favorably connected. Below, we assess TQM as being a factor to green supply chain management practices

H2: TQM methods are positively and directly related to green supply chain management practices.

Through the years, TQM has moved from a solely empirical perspective of system management to a powerful inner and also outside client orientation (Dawabsheh, Hussein, & Jermisittiparsert, 2019). It's been referred to as an Incorporated procedure of the quest for client satisfaction that calls for equally a client emphasis, also, to control over procedures to get rid of the processing of defective services and products (Green et al., 2019). Cua et al. (2001) discovered that companies trying to react to customers and markets besides enhanced green efficiency. Thus, as clients start demanding services and products which are ecologically helpful, the consumer target element of TQM must assist the processing of ecologically renewable products as well as providers employing tasks which don't harm the atmosphere (Green et al., 2019). Furthermore, when materials are well used through the discarding of waste material, enhanced green capabilities must be backed. TQM initiatives, when guided in the direction of green problems, seem to trigger constructive results (Lam, Lee, Ooi, & Lin, 2011).

Green supply chain management practices are supposed to boost green efficiency. These strategies are able to bring down the environmental influence (e.g. reducing environmental damage) through strategies concentrated on boosting green efficiency by minimizing the discharge of solid and effluent waste materials and air emissions, as well as the decrease of utilization of toxic and



hazardous substances within manufacturing operations, without compromising quality, price consistency (Kusi-Sarpong et al., 2016). The connection in between green supply chain management practices as well as green efficiency has been statistically determined by means of previous studies. Green et al. (2019) discovered significant backing for the hypothesis of theirs which "enterprises having higher levels of adoption of green supply chain management practices will have better environmental performance improvements." (Jermisittiparsert, Siriattakul, & Sangperm, 2019) additionally discovered that green supply chain management practices favorably influence green efficiency, resulting in the following hypothesis:

H3: Green supply chain management practices positively and directly impact organizational performance.

There is actually a selection of documents that deal with the combination of green manufacturing and lean manufacturing making use of survey analysis (Thanki & Thakkar, 2018). Nevertheless, the research considers the "overall" snapshot of production because the "bundles" of TQM, JIT, absolute deterrent servicing as well as HRM as outlined by Green et al. (2019), while the present study focuses over the connection among couple of components, TQM and JIT, and then green strategies. There's additionally printed study accessible proving the supporting connection among TQM and JIT (Cua et al., 2001). Nevertheless, not one exclusively deals with the supporting connection concerning incorporated environmental practices and JIT/TQM. We hypothesize that:

H4: Green supply chain management practices has a mediating effect between the relationship of JIT and organizational performance.

H5: Green supply chain management practices has a mediating effect between the relationship of TQM and organizational performance.

3. METHODOLOGY

The information was gathered from the respondents at one time via personally administered questionnaires. Therefore, the current study is cross-sectional and quantitative. The respondents of the analysis had been the employees working in manufacturing industry of Indonesia . Using simple random sampling, six hundred surveys were sent out in Indonesian manufacturing companies. The information was collected through questionnaires. A period of seven days was provided to complete the surveys, and also, afterward, the surveys had been gathered from the relationship office of the company. The 318 questionnaires have been obtained out of the absolute that established a 53 % rate of response. The construct of TQM was measured with 13-items multi-dimensional scale (Flynn et al., 1995), out of total 3 items are related to customer focus, 7 items are related to product design and 3-items are related to statistical process control. The construct of JIT was also assessed by 13-items multi-dimensional scale (Flynn et al., 1995), out of total 4 items are related to Kanban, 3-items are related to lot size reduction practices, 3-items are related to setup time reduction practices and 3-items are related to JIT scheduling. The construct of green supply chain management practices was assessed by 9-items scale (Jermisittiparsert et al., 2019). Finally, organizational performance was assessed with 5-items items scale (Park & Kim, 2016). All the scaled were evaluated on a Likert scale of 5 from 1 ("strongly disagree") to 5 ("strongly agree"). The collected data were analyzed by following PLS-SEM approach and using SmartPLS 3.2.8.

4. DATA ANALYSES

4.1 Construct Reliability and Validity

The construct reliability, as well as validity, is essential to set prior to evaluating the study design (Hair Jr, Sarstedt, Hopkins, & Kuppelwieser, 2014). Thus, to begin with, the convergent validity, as well as discriminant validity on the measurement design, were assessed. The measurement design of the research is explained in table 1. For that external design, all of the loadings had been above 0.5 that's necessary for setting up the reliability of all elements. Each construct has "Cronbach's alpha value," i.e. greater than 0.70 and "average variance extracted (AVE)" is greater than 0.5 as well as "composite reliability (CR)" is higher than 0.60 which established the convergent validity on the research framework (Hair, Hult, Ringle, & Sarstedt, 2014).

Likewise, to make certain the "convergent validity" of internal design, all of the "standardized loadings" have been squared as well as divided by their overall quantity to have the AVE of higher order variables. In the "Fornell and Larcker criterion," the diagonal values clearly show the square of AVE that has got to be bigger compared to the constructs' correlation with other variables as well as "Heterotrait Monotrait Criterion" values should be much less than 0.85 for setting the discriminant validity of research framework (Hair Jr, Hult, Ringle, & Sarstedt, 2017). Likewise, Table 2 and Table 3 revealed the outcomes of the "Fornell and Larcker criterion," as well as the Heterotrait Monotrait Criterion, that has determined the discriminant validity of the construct.



Table 1: Measurement Model

Construct	Items	Loadings	Alpha	CR	AVE
Customer Focus	CF1	0.826	0.749	0.857	0.666
	CF2	0.817			
	CF3	0.805			
Green Supply Chain Management Practices	GSCMP3	0.786	0.737	0.851	0.655
	GSCMP5	0.797			
	GSCMP9	0.844			
JIT Scheduling	JS1	0.811	0.705	0.830	0.619
	JS2	0.777			
	JS3	0.773			
Kanban	Kn1	0.822	0.779	0.859	0.604
	Kn2	0.789			
	Kn3	0.697			
	Kn4	0.794			
Lot Size Reduction Practices	LSRP1	0.78	0.703	0.834	0.626
	LSRP2	0.782			
	LSRP3	0.811			
Organizational Performance	OP1	0.778	0.713	0.811	0.521
	OP2	0.624			
	OP4	0.659			
	OP5	0.809			
Product Design	PD1	0.781	0.882	0.909	0.587
	PD2	0.788			
	PD3	0.736			
	PD4	0.773			
	PD5	0.762			
	PD6	0.753			
	PD7	0.766			
Statistical Process Control	SPC1	0.736	0.709	0.821	0.605
	SPC2	0.866			
	SPC3	0.725			
Setup Time Reduction Practices	STRP1	0.842	0.704	0.835	0.629
	STRP2	0.729			
	STRP3	0.805			
TQM*	Customer Focus	0.935	0.870	0.896	0.502
	Product Design	0.928			



	SPC	0.511		
JIT*	JIT Scheduling	0.764	0.798	0.843
	Kanban	0.734		
	LSRP	0.716		
	STRP	0.706		

*Second order construct

Table 2: Fornell and Larcker Criterion for Discriminant Validity

	CF	GSCMP	JS	Kn	LSRP	OP	PD	STRP	SPC
CF	0.816								
GSCMP	0.231	0.81							
JS	0.127	0.023	0.787						
Kn	0.136	0.32	0.059	0.777					
LSRP	0.099	0.195	0.083	0.212	0.791				
OP	0.195	0.198	0.072	0.277	0.182	0.722			
PD	0.186	0.217	0.122	0.085	0.041	0.174	0.766		
STRP	0.19	0.062	0.213	0.077	0.063	0.065	0.171	0.793	
SPC	0.12	0.296	0.062	0.276	0.227	0.275	0.085	0.061	0.778

Note: CF = Customer Focus, GSCMP = Green Supply Chain Management Practices, JS = JIT Scheduling, Kn = Kanban, LSRP = Lot Size Reduction Practices, OP = Organizational Performance, PD = Product Design, STRP = Setup Time Reduction Practices, SPC = Statistical Process Control

Table 3: Heterotrait-Monotrait Criterion for Discriminant Validity

	CF	GSCMP	JS	Kn	LSRP	OP	PD	STRP	SPC
CF									
GSCMP	0.312								
JS	0.176	0.069							
Kn	0.18	0.419	0.111						
LSRP	0.158	0.271	0.139	0.96					
OP	0.289	0.091	0.137	0.371	0.266				
PD	0.057	0.268	0.156	0.113	0.116	0.231			
STRP	0.266	0.144	0.151	0.11	0.131	0.165	0.218		
SPC	0.154	0.449	0.126	0.056	0.044	0.423	0.123	0.115	

Note: CF = Customer Focus, GSCMP = Green Supply Chain Management Practices, JS = JIT Scheduling, Kn = Kanban, LSRP = Lot Size Reduction Practices, OP = Organizational Performance, PD = Product Design, STRP = Setup Time Reduction Practices, SPC = Statistical Process Control

4.2 Hypotheses Testing

To be able to evaluate the hypotheses established in literature review section, the present study has applied PLS SEM by using SmartPLS 3.2.8 software. The bootstrap procedure was used by applying blindfolding technique to evaluate the structural design of the study. The research framework is consisted of two endogenous variables, one is the mediator (i.e. GSCM) and the other is the dependent variable of the study (i.e. OP). The model explains 30 percent variance in GSCMP due to JIT and TQM and 63 percent



variance in OP due to exogenous variables of the study (that reflected in the values of coefficient of determination R^2). Whereas, the value of Q^2 is 0.19 and 0.31 of GSCMP and OP that established the predictive relevance of the research framework (Henseler, Ringle, & Sarstedt, 2012). Additionally, the end result of PLS bootstrap procedure which approves the substantial association of JIT with GSCMP with a beta value of 0.20, t-value of 2.42 and p-value < 0.05, TQM with GSCMP with beta value of 0.21, t-value of 3.37 and p-value < 0.05 and GSCMP with OP with beta value of 0.80, t-value of 17.40 and p-value < 0.05. The results likewise verify the substantial mediating effect of GSCMP between the relationship of JIT and OP with a beta value of 0.16, t-value of 2.38 and p-value < 0.05 and TQM and OP with a beta value of 0.17, t-value of 3.40 and p-value < 0.05. Thus, all of the hypotheses of the research are dependent on the outcomes of the PLS-SEM findings.

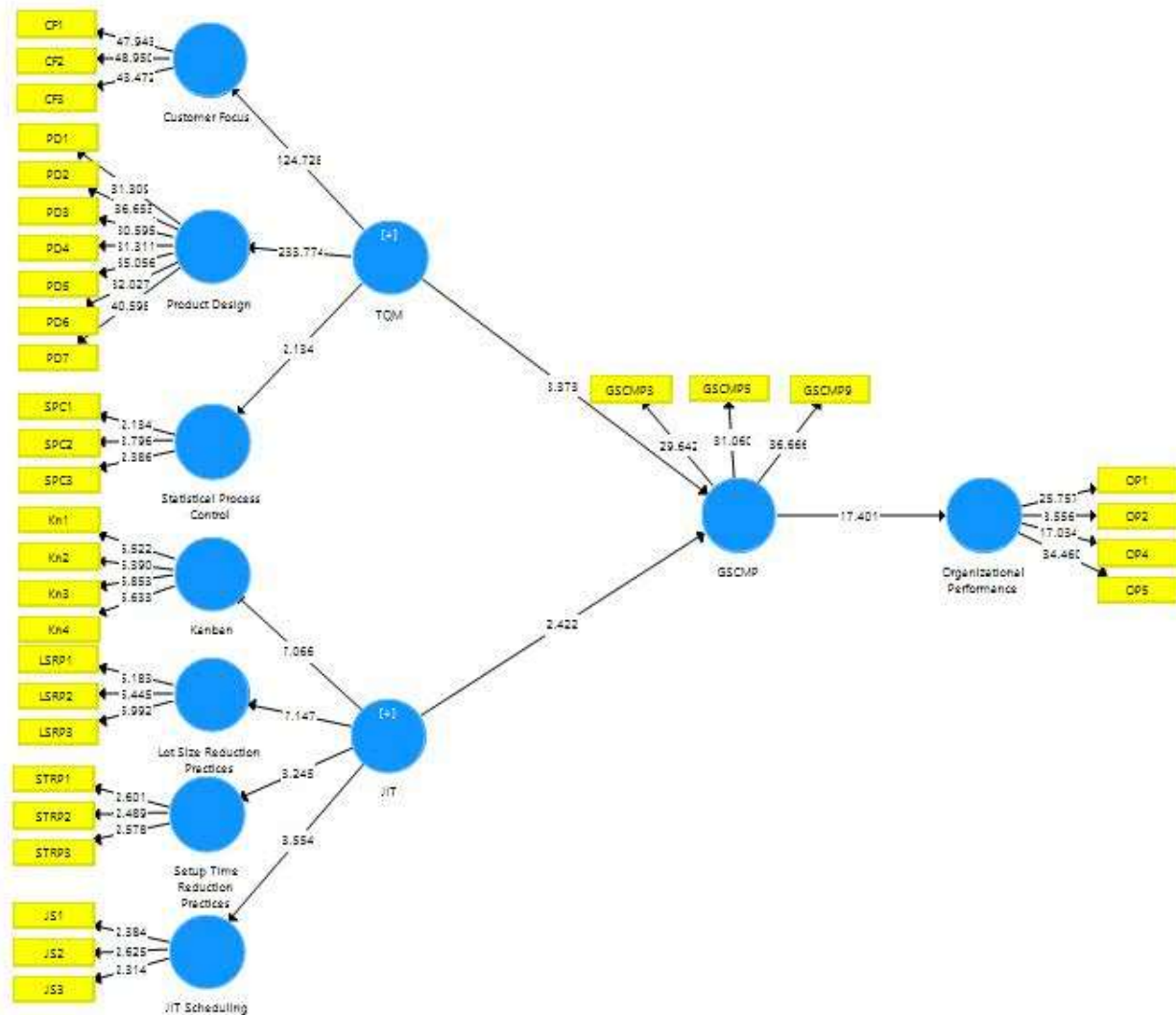


Figure 1:
Estimations of Structural Model

**Table 4: Hypotheses Results**

Hypothesis	Beta	S.E	T Value	P Value	CI ^{BCa} Low	CI ^{BCa} High	Decision
JIT -> GSCMP	0.202	0.084	2.422	0.016	0.012	0.336	Supported
TQM -> GSCMP	0.206	0.061	3.373	0.001	0.069	0.318	Supported
GSCMP -> OP	0.798	0.046	17.401	0.000	0.684	0.873	Supported
JIT -> GSCMP -> OP	0.162	0.068	2.38	0.018	0.018	0.279	Supported
TQM -> GSCMP -> OP	0.165	0.048	3.404	0.001	0.052	0.251	Supported

Note: GSCMP = Green Supply Chain Management Practices, OP = Organizational Performance

* Significance level < 0.05

5. DISCUSSIONS AND CONCLUSION

Despite the fact that JIT doesn't directly influence organizational performance, findings suggest that TQM might stop being enhanced until JIT has been completely applied. Hence, empirical and theoretical backing is determined to establish the consolidated effect TQM and JIT on green supply chain management practices in Indonesian manufacturing companies. The outcomes of the present research are in consistent with prior studies. Chen (2015) discovered that JIT companies execute TQM much more rigorously compared to traditional companies. Additional evaluation of our facts suggests that majority of the responses are above average on each TQM and JIT that establishes reliability for this proposition.

An even more thorough evaluation offers insight into the way the 3 sets of tactics work collectively to favorably influence organizational performance. Based on this further evaluation, we determine that JIT, GSCMP and TQM are complementary methods which blend to boost organizational performance to a much better level than singular implementation of every exercise. Consumers get quality services and products for essentially low price while making sure the green sustainability.

While presently there is limited research related to green and lean, one additional study (Zhu & Sarkis, 2004) was revealed that particularly evaluated the associations between JIT, TQM along with green supply chain management. The moderating effect of TQM and JIT was evaluated by them between the relationship of environmental performance and GSCMP. The preceding research was conducted in China and all of the research hypotheses are found to be significant. The favorable statistics suggest that there are actually essential connection between TQM and JIT along with GSCMP, despite the fact that the interaction influences aren't optimistic as well as substantial. As a possible extension of re-search by Zhu and Sarkis (2004), we present a different design which features TQM and JIT as determinants to GSCMP rather compared to moderating variables.

Outcomes of the research suggest that distinctive TQM and JIT practices incorporate supporting the application of GSCMP that result in enhanced organizational performance. JIT was formulated before TQM and also can serve as the basis for the effective execution of TQM. The setup of JIT produces effectiveness abilities across all operation. This effectiveness is needed before TQM strength abilities is completely utilized. JIT is centered on the waste elimination creating higher effectiveness. Green supply chain management practices are centered on the green wastes elimination.

5.1 Limitations

Although the goals of the research are achieved, one can find limitations which must be viewed while inferring the outcomes. The respondents are confined to only administrators of Indonesian manufacturing firms. Additionally, like almost all survey based scientific studies, there's issues associated with both non response bias and common method bias. Evaluations suggest that the biases don't result in considerable issues, however. An extra limitation on this research would be the fairly low response rate. We feel the sample is representative and diverse of Indonesian companies but know that the research might be considerably improved by using a greater rate of response. Whereas, the emphasis of the present study was on setting up the associations between TQM, JIT along with GSCMP and also the collective effect of such activities on organizational performance. Further, it must be mentioned it's essential to be aware that many other constructs like tradition, manufacturing sector attributes, marketplace attributes might also influence the level to which the analysis constructs influence performance.

Zhu and Sarkis (2004) established association among the study variables primarily based on evaluation of companies operating in China. The present study validates the favorable substantial association with a Indonesian response. The outcomes of this particular research support the hypothesis that businesses with developed TQM and JIT plans must be far better in a position to follow green supply chain management practices and enhance organizational performance. We suggest that further investigation be undertaken to evaluate this particular single design which features customer emphasis, high quality, low cost, environmental sustainability and responsiveness.



5.2 Implications

The favorable outcomes related to TQM and JIT are more developed. JIT plans need to minimize the costs related the generation, eradicating all types of waste and distribution of services and goods, therefore improving earnings. TQM affiliate plans assist a customer concentration yielding products and services which satisfy customer demands triggering improved sales as well as market share that also means enhanced earnings. Green sustainability was created as an innovative strategic imperative. Consumers requires products and services which are ecologically favorable and are made and delivered through systems which don't harm the atmosphere. The outcomes of this particular study propose that manufacturing executives make sure that TQM and JIT plans are in position and working very well before trying to adopt the strategy of green supply chain management.

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