

The Role of HR Practices in Enhancing Firm Supply Chain Performance

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Abstract— The supply chain management is an emerging discipline, which during the course of three decades has emerged from an operational function to a competitive strategy. The authors have employed different theoretical models to explain the success factors of supply chain management. The current study is carried out to explain the relationship between HR practices and supply chain performance. In addition to that the current study, is also interested in finding the impact of organizational culture in the relationship between a set of HR practices and supply chain performance. To achieve the research objectives, we have employed two step smart PLS technique, which is one of the robust SEM technique of recent times. We have used the smart PLS as statistical tool to achieve the research objectives the data by mean of an adapted survey instrument in the form of questionnaire is collected from the operation and finance managers of Indonesian manufacturing firms. The results of the current study are providing support to the hypothesized results. The direct and indirect relations appear positive and significant. The current study which in author knowledge is among few pioneering studies on this issue, will be helpful for financial experts, operation managers, academicians, researchers and other policy makers in formulating policies.

Keywords: Supply Chain performance, HR Practices, PLS

1.0 Introduction

The technology is developing rapidly in today's business environment. The lifecycle of the products is getting shorter and competition is getting intense. Therefore, it is important for organizations to find ways to get competitive advantage. It is because competitive advantage of an organization is mainly dependent upon the efficiency of operations and their productivity in overall company [1]. The competition at the global level is forcing the firms to provide outstanding performance. In order to compete at the global level, it is vital to produce right product, at the right time and deliver it timely

as well. Whereas, resources are required to create such mobilization by the firms. Therefore, it is important for the organizations to cooperate with each other and create partnership-based coordination [2].

In early 1980's, term supply chain management was used first time by the consultants. Since then its been frequently used and gained the attention of organizations and researchers as well [3], is considered and most discussed topic so far in literature [4] and known as important strategic element [5]. In the manufacturing environment, competition is shifted from single firm to certain supply chains. Therefore, the firm with versatile and agile supply chain can get effective competitive edge [6]. For a credible and effective management of consumer and customers, there is need of joint effort of distributors, manufacturers and suppliers [7].

As the focus of supply chain on the management processes within the boundaries of organization, measuring the performance is important for effective control and operation. The ability of management to integrate the organizations network of relationship at business level is the thing upon which the success of the firm is dependent. It is because such management practice allows the organization to improve the decision-making process and minimize the customers response and cost as well. As the complexity of supply chain is increased, there is need to measure these systems to deliver useful insight for optimization of supply chain [4].

One of the management tool is the human resource management through which employees of the organization are treated as asset [8]. There are three approaches identified by [9] regarding human resource management. (a) the initial name of human resource management was personal management which was later on changed without alteration of overall practice. (b), Human resource management is the tool which describes the responsibilities of departments and personal level and (C), it is positive utilization of human capital, so it is part of strategic management. Furthermore, in order to maintain relationship with labor this can

be used as an effective tool by dealing with the issues related to safety and creating equality throughout the organization [10]. Researcher stated that the process of utilizing the performance of an individual to achieve certain goals which are set by the higher management of the organization is known as human resource management. The same way, the performance, attitude and behavior influence the policies of human resource management strategies and practices.

[12] mentioned that activities of human resource are classified into four categories namely compensation, evaluation, training and selection [13]. Generally, evaluation, compensation, training and selection are viewed as practice at ultimate in terms of generating performance of the supply chain [14]. People working in an organization are strategically important for that because execution of strategies is done by the people who are working in that organization.

Most of the research conducted recently in the area of supply chain performance is basically from the fields related to information technology, information system and operations. It is not unexpected that such research will pre-dominate, given that supply chain emphasizes on the integration of a number of activities between the parties of supply chain that can be achieved through IT systems and operational processes. Naturally, the focus of these researchers is on the operational aspects of supply chain with limited reference regarding different aspect of human resource. There is lack of literature regarding the impact of several human resource related issues on supply chain, and its also fact that these issues can have influence on the high level regarding the performance of the supply chain. Such as, IT is used by all the firms that are involved in the supply chain process of the firm, but human resource is required to generate these activities related to supply chain. Same way, in order to achieve success, certain capabilities are required in order to develop partners for the supply chain. For example, developing trust issues among the partners, development of the organization that is flexible, looking for coordination in supply chain, reducing the cost of inventory and increase of transparency. In order to attain these capabilities, people are required in the firm who has the capabilities and skills to execute these operations [15]. Along these skills, HR practices are also required by the organizations like reward systems, compensation and training that can re-in force the behavior in the employees.

As mentioned the importance of supply chain in the business, it is also very important to include all of the aspects of management including human resource to improve the performance of supply

chain. The current study tries to fill the gap among the relationship between human resource practices and supply chain performance [16]. In the present research, the literature regarding the human resource practices such as training, compensation and leadership will be analyzed. Moreover, the impact of these HR practices is examined on supply chain performance along the moderating role of culture.

2.0. Literature Review

Despite the fact that the organizations and managers working there realize the importance of supply chain management, but still there are lack of measures to analyze the performance of supply chain [5] [17]. Measurement of supply chain performance may be the thing that lead to better understanding related to supply chain and helps regarding the reveal and test the viability of the strategies of organization. Moreover, [18] pointed out that measurement of the performance related to supply chain provides information and feedback, increase communication among employees, helps in revealing the progress and diagnosis of the problems within industry as well.

Measurement of the performance can be utilized to assess the strategies and their effectiveness in supply chain management. Moreover, identifying the success and the opportunities which can be utilized in future can be identified this way. A critical contribution in the process of decision making in the supply chain management is shared by it, especially for the re-planning process regarding the strategies and objectives of the firm [3].

In past literature, issue regarding the evaluation of supply chain performance is well debated. Scholars have identified supply chain management as the task which is very complex. It is because of the fact that a number of actors are included in the supply chains [19].

There are different characteristics of supply chain in different organizations and industries. Furthermore, different techniques and applications are required for them. [20] mentioned that supply chain management integrates the demand and supply throughout the company. Therefore, inter and intra relationships of the firm are discussed in supply chain management [21].

The supply chain performance of the organization refers the extended activities of the supply chain in order to meet the requirements of the consumer, including the availability of the product, delivery on time, all the required capacity and inventory in the supply chain in order to deliver the best performance. Boundaries of the companies are crossed in the performance of the supply chain because basic material is included in it, along the

finished products, sub-assemblies and components. It also covers the distribution of products through a number of channels. Cross functional lines are also crossed in it such as R&D, marketing and sales, distribution, manufacturing and procurement. In order to compete in this new business environment, there is need to improve the supply chain on the regular basis [23].

The big obstacle which is faced by the supply chain is the measurement of the performance regarding supply chain [24]. To measure the performance, very vague terms are used on regular basis like adequate and inadequate [25]. Because of different supply chain performance entities like customers, wholesalers, manufactures and suppliers the analysis regarding performance of supply chain is very tough and complex.

In past literature, three measures regarding performance of supply chain management are discussed like flexibility of supply chain delivery, time to identify customer responsiveness, and inventory cost [26]. It is essential to measure the flexibility of supply chain in order to measure the supply chain responsiveness. This process deals with the services and product delivery identified by the customer in the market as soon as possible. The responsiveness of supply chain will be better as the flexibility will be higher for example, the changing needs will be met by the supply chain of supply chain is very flexible. Additionally, such supply chain will help the customers as well to view the favorable outcome of supply chain [5]. The construct regarding delivering the supply chain flexibility is operationalized like supply chain's ability to deliver or change the orders according to the needs and demands of the customers [27].

From the perspective of supply chain, there is need to optimize the levels of supply chain because maintaining inventory creates problem and expensive as well [28]. The measures of inventory cost measure the costs related to the inventory with scrap that is involved. Furthermore, its operationalized in terms of associated cost with inventory management in stock and loss in the sales of the product because of lack of inventory [5]. Time for customer responsiveness is one of the important measures regarding the supply chain performance because it involves placement time and delivery time. Such dimension of supply chain performance is measured in terms of demand of customers and ability to meet this demand timely [29].

[5] revealed that performance of supply chain management can be divided into non financial and financial measure. [30] categorized measures of supply chain performance into five processes of supply chain like customer satisfaction, return, deliver, make, source or plan. And whether innovativeness, flexibility, quality, time and cost is measured by this. Moreover, it is also important to

measure that they are qualitative or quantitative measures. As mentioned earlier that these measures can be categorized into tactical levels of management, operational and strategic levels as well.

The time based and costs are mainly measured in the plan category and quantitative in nature as well. These measures include value added productivity, cost of goods sold, return on investment, profit and sales. On the other hand, source category mainly consist of measures that are quality based such as extent of mutual planning, supplier rejection, defect free measures to the supplier and partnership level. The costs measures like work in process, inventory obsolescence, manufacturing cost and cost of resources are part of make category. The approaches related to quality-based measures, time, and costs are related to deliver category [25] and are considered as quantitative measures. On the other hand the measures that are related to flexibility including transport and delivery flexibility; delivery performance, quality of delivered goods, and delivery reliability. In the category of return on investment measures regarding satisfaction of the customers are considered.

The practices related to human resource are defined as set of activities at the organizational level with the aim of managing the pool related to human capital and making sure that employed man power is working to achieve the objectives and goals of the organization [31]. By adopting certain human resource practices like awarding good remuneration influence positively on the individual performance of the employees lead to the positive impact on the overall performance of the organization and create powerful connection with human resource of the organization and overall performance as well [31].

[32] found that there is positive relationship between supply chain performances like commitment, deliverability, flexibility, cost reduction and quality and practices of human resource management like incentives and compensation, recruitment and selection process, training, and leadership. Thus, In order to find, recruit and retain the employees who are committed and skilled, one of the strategic term and mechanism is human resource management. It is because human resource management is the management of people and work to achieve desirable goals of the organization [33]. Researchers also described human resource management as combination of carefully designed practices designed to improve effectiveness of the organization and outcomes related to performance as well [34].

Researchers have produced list of best human resource practices like (a) using the selection and recruitment process carefully to contribute with full potential (b) train the hired individuals regarding

the activities of the organization. (C) providing proper job description and good remuneration to ensure commitment and flexibility among the employees. (d) to ensure two way process with employees and organizations, making sure proper communication (e) employees should take ownership of the work which they are doing to reach the financial performance goals of the firms in which they are working [35].

On the other hand [36] identified a list of human resource practices that contributes towards the performance of the organization (a) proper and carefully designed process of selection and recruitment such as right first-time recruitment, zero defects recruitment, total quality recruitment etc. (b) learning and training (c) remuneration system should be designed to satisfy the monetary needs of the employees so they remain motivated (d) flexible job design and working in team (e) involvement of the employees with the leaders of organization (f) linking the appraisal system with performance of the employees.

In another research conducted by [37], more emphasis was placed on selection and recruitment process, remuneration system, enhancing skills under good leadership, acquiring skills from other sources as well because certain skills are important to acquire certain opportunities. The practices regarding the motivation of the employees are very critical as well because opportunities and skills are acquired by the employees, so they should have motivations to fulfil these opportunities by using the skills. In the end, remuneration and practices regarding enhancement of skills under supervision of leadership and job involvement are critical in reaching organizational performance.

[25] has argued that the impact of HRM on performance depends upon worker's response to HRM practices, so the impact will move in direction of the perception of HRM practices by the employee. It has been proven that the presence of strong recruitment and selection practices, promotional opportunities, grievance resolution mechanisms, flexible benefit plans, employee responsibility, autonomy and team work were found to relate positively to organization commitment while compensation cuts were negatively associated with organizational commitment [38].

The integration of important business processes with suppliers that provides information, services and products to value add the process through consumer is called supply chain management. One important dimension of supply chain management is the dimension of human which focuses on the cooperation and communication which takes place between all the parties involved in creating supply chain. [39] concluded that supply chain management is the integrated approach of business which collaboration based. This collaboration is not

only on the functional areas of the business but to the all parties involved in supply chain based on human dimension [40].

The most important aspect for the integration of organization is human [41]. It is because collaboration of large number of people is required for the integration process. For the collaboration of human, proper human resource system is required for information sharing and cooperation. In past both supply chain and human resource are treated separately most of the times despite the fact that both of these are closely linked to each other [42]. On the other hand [43] opposed the perspective of human resource management for the research regarding human resource.

For the success of supply chain management of the organizations, human dimensions in these organizations need committed seriously. Most of the organizations neglect the impact of human resource and only focus on information technology aspects of supply chain but same kind of attention is to need be given to human resource factors [38]. Thus, there is need of proper system of human resource for greater satisfaction of customers through supply chain management [44].

Though several Human resource practices are recognized with application of supply chains operations, but culture is the feature which is still to be recognized. The importance of organizational culture in context of supply chain performance is discussed in past literature [55] as organizations are gradually developing strategic relations by adoption of good strategies of supply chain for achievement of success ([56]; [57]). The cultural fit of organizations is recognized vital element having relationship with supply chain to attain success [48]. [49] done a global research and highlighted the significant relationship of variables of organizational culture and supply chain performance.

Supply chain relations benefits are reported for example enhanced time to market, profit maximizing, market share and supply chain lead time reduction [53]. Though, for the increase of benefits, management of organizational culture is important among supply chain partners [50], as properly aligned culture within supply chain is an essential component to deliver desired performance results [47]. Additionally, [51], discussed the significance of attitude, behaviors and values in context of supply chain to get enhanced performance outcomes.

[46] developed a theoretical outline of several organizational associations and reported that generally, organizational dealings are not managed properly if organizational culture is not aligned.

Generally, organizations develop and enhance their Human Resource practices to develop and align organizational culture as HR practices accompanied by the culture efficiently influence

the overall success of organization. Several studies show the positive and significant association between HR practices and organizational culture [54]. [44] have described that interface of employee with its organization is important to completely utilize human resources skills and knowledge.

Similarly, organizational context is related to the human resource practice of training showing the link of training with the culture [55]. The culture of an organization is highly influenced by the growth of training programs of work force to alter the behaviors of its employee [65-69].

[52] have discussed in the relationship of compensation and leadership with the organizational culture. They have described that good compensation and leadership exerts positive thinking in the employees regarding the organizations and this helps to motivate the employees. Taking the leadership together with HR practices into consideration, [45] have discovered a significant relationship exists between culture and leadership of organization.

H1: Training will positively impact the supply performance.

H2: Compensation will have positive impact on supply performance

H3: Leadership will positively impact the supply performance

H4: Organizational Culture will positively impact the supply Performance.

H5: Organizational Culture will moderate the relationship between training and supply performance.

H6: Organizational Culture will moderate the relationship between compensation and supply performance.

H7: Organizational Culture will moderate the relationship between Leadership and supply performance.

Figure 1 depicts the theoretical framework of this study. The resource-based theory and agency theory are used to conceptualize the framework shown in figure 1.

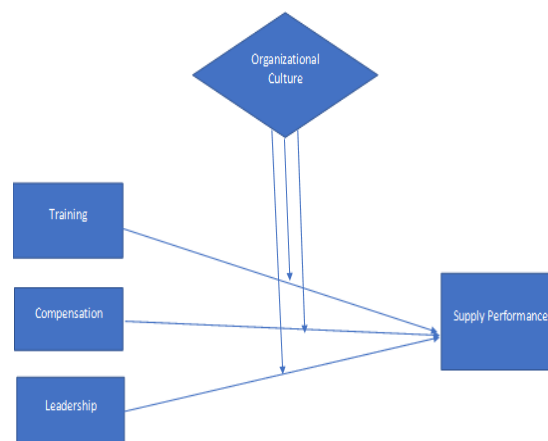


Figure 1: Conceptual framework

3.0. Methodology

This study is of surveys-based research design because it focuses on an aspect of study where previous studies have been conducted, but still require further study to attend other questions that are yet to be given answers. The choice of this research design is based on the methods and techniques used for the conduct of the research because it elucidates how data would have been gathered and analysed towards the realization of the research objectives. This study is using a survey research as its quantitative approach of study. Thus, questionnaire is suitably appropriate as a gathering instrument. Using questionnaires in survey researches is as important as structuring the questionnaire [62, 63, 64]. Perhaps, this is true as there are a lot of challenges that may adversely tamper the validity of the data and the rate of response [62]. In order to get rid of those challenges, this study followed the suggestions by Hair et al. [62] a) and took different precautions such as abiding by the research ethics of protecting the respondent's identity, appropriate and unambiguous scaling of items and separating items according to constructs. The instrument items designed for this study is subjected to both content and construct validity testing. The newly-constructed questionnaire and adapted parts were evaluated for content validity and feedback from the respondents was taken into account for further improvement. Also, a pilot study to test the internal validity of the constructs that are to be investigated by this study is recommended. Sample depicts a selection of some part of an aggregate on the basis of which a statistical inference is made about the aggregate. Therefore, the employees in the manufacturing sector of Indonesia are the sample of this study

4.0. Research Analysis and Discussion

The core objective behind carrying this study is to investigate the relationship between set of HR practices and supply chain performance. For this purpose, the methodology is selected with an intention to examine the relationship between latent variables. According to Hair et al., [62], the smart PLS is one of the most suitable technique for this kind of the study where one is interested in exploring a comparatively unique conceptual model. There are other suitable techniques which can be used such as AMOS, but the current data set is meeting the assumption of PLS AMOS. Researchers' arguments for choosing PLS as the statistical means for testing structural equations models are as follows 1). PLS makes fewer demands regarding sample size than other methods; 2). PLS does not require normal-distributed input data; 3). PLS can be applied to complex structural equation models with a large number of constructs; 4). PLS is able to handle both reflective and formative constructs; and 5). PLS is especially useful for prediction.

The first step in a most recent generation of PLS, which is smart PLS is the assessment of inner model. In the inner model assessment we assess the reliability, and validity as well as the loading of the factors and constructs used in our study. The values of inner assessment models are shown in table 1. The results indicate that all the values are above the threshold level. Therefore, it is revealed that the current study attained convergent validity.

Table 1. Convergent and Discriminant Validity

	Indicators	Loadings	CR	AVE
COMP	COMP1	.822	0.815	0.712
	COMP2	.905		
	COMP3	.990		
	COMP6	.925		
CL	CL1	.843	0.895	0.772
	CL2	.855		
	CL4	.802		
	CL6	.925		
TRN	TRN1	.884	0.932	0.617
	TRN3	.955		
	TRN4	.903		
SCP	SCP1	.822	0.910	0.671
	SCP2	.855		
	SCP3	.722		
	SCP4	.825		
	SCP5	.841		
	SCP6	.800		
	SCP7	.880		
	SCP8	.881		
	SCP9	.826		
	SCP10	.821		
	SCP13	.882		
	SCP15	.928		

	SCP16	.840		
	SCP17	.921		
	SCP18	.882		
LEAD	LEAD1	.821	0.925	0.719
	LEAD2	.882		
	LEAD3	.928		

After reliability of instrument through inner model assessment the next step is the examination of validity. To examine the validity, we have used the discriminant validity which is normally measured through average variance extracted. The

Table 2. Discriminant Validity

	1	2	3	4	5
COM	0.898				
CL	0.821	0.798			
TRN	0.718	0.650	0.801		
LEAD	0.628	0.650	0.743	0.650	
SCP	0.627	0.730	0.823	0.734	0.821

The second step in SEM-PLS analysis is assessment of structural equation modelling. Following the study of Hair et al. [], we have measured the structural equation model for direct and indirect results of this study. Indirect effect was examined to check the moderation. In this process, the p-value was considered. According to the direct results, it is shown that all hypothesis has a p-value less than 0.05. Therefore, it accepts H1, H2, H3. And H4. Following the study of Hair et al., [62-75], we can argue that the hypothesis are accepted significantly.

Table 3. Direct Effect

	(β)	SD	T-value	P-Values
H1	0.211	0.043	3.234	0.000
H2	0.207	0.043	-4.810	0.000
H3	0.457	0.119	-3.656	0.000
H4	0.532	0.132	3.978	0.027

The sub section of second section is the assessment of indirect relationship of organizational culture in the relationship between HR practices and supply chain performance. These results of moderation show that for both mediation hypothesis, the t-

value is above 1.96 and p-value is below 0.05 which accept H5, H6, and H7

Table 4. In-Direct Effect through Moderation

	(β)	SD	T-value	P-Values
H5	0.109	0.018	4.319	0.000
H6	0.129	0.016	5.339	0.000
H7	0.112	0.021	6.331	0.000

To further confirm the how much independent variable are bringing the impact on the dependent variable we have measured the value of R-square. The R-square value of CI is 52.1 percent.

Table 5. Expected Variance

	R ²
CA	49.1%

The results of the current study have shown a great deal of agreement with the hypothesized results.

5.0. Conclusion

The Human resource management is merged as key tool of success for any business and same is the case of supply chain management. The supply chain management is an emerging discipline, which during the course of three decades has emerged from an operational function to a competitive strategy. The authors have employed different theoretical models to explain the success factors of supply chain management. However, the single one strategy is not sufficient to explain the as these are interdependent therefore the current study has examined the impact of HR practices on supply chain performance. The integration of important business processes with suppliers that provides information, services and products to value add the process through consumer is called supply chain management. The current study is carried out to explain the relationship between HR practices and supply chain performance. In addition to that the current study, is also interested in finding the impact of organizational culture in the relationship between a set of HR practices and supply chain performance. One important dimension of supply chain management is the dimension of human which focuses on the cooperation and communication which takes place between all the parties involved in creating supply chain. The practices regarding the motivation of the employees

are very critical as well because opportunities and skills are acquired by the employees, so they should have motivations to fulfil these opportunities by using the skills. In the end, remuneration and practices regarding enhancement of skills under supervision of leadership and job involvement are critical in reaching organizational performance. To achieve the research objectives, we have employed two steps smart PLS technique, which is one of the robust SEM techniques of recent times. The results of the current study are providing support to the hypothesized results. The direct and indirect relations appear positive and significant. The current study which in author knowledge is among few pioneering studies on this issue, will be helpful for financial experts, operation managers, academicians, researchers and other policy makers in formulating policies.

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