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THE EFFECT OF TRUST AND INNOVATION ON SUPPLYING CHAIN PERFORMANCES IN THE INDUSTRIAL ESTATES OF THE CITY OF KERMANSHAH

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ABSTRACT

This study examined the impact of trust and innovation on the performance of supplying chains which carried out in the city of Kermanshah. The study population consisted of all the enterprise directors. This study is a descriptive study regarding the methodology of research and in terms of purpose is functional which the data gathered on the base of survey information. Sampling carried out randomly from the population of 186 persons. The data collection instrument consisted of a standard questionnaire of 48 questions, evaluating and approving by experts and academics which tested by the validity of KMO test. Furthermore, the reliability was tested by distributing questionnaires among the population and the study analyzed by 18 SPSS software and Cronbach's alpha. The results of structural equation modeling and path analysis showed that there was a significant relationship between trust and innovation in industrial firms in the Kermanshah city.

Keywords: Trust, Innovation, performance of supply chain, industrial companies

1. INTRODUCTION

Nowadays, innovation in the utilization is of competitive advantages, especially in large organizations which is very important for their companies and organizations as without continuous innovation, the competition will be removed. Now, more than half of earnings of NGOs, especially in high-tech industries and organizations, such as information and communication technology industry, products with less than five years of their life going on. Moreover, innovation in various sectors of trade, industry and services, are remarkably increasingly and trying to increase to maintain their competitive advantage. Thus, innovation is crucial for competitiveness in the fields of industry trade and services (Raple and Haryngtn, 2000). In this day and age, confidence in the manufacturing economies as pivot of concept for development and the existence of social capital in an organization is considered. The importance of trust in facilitating of social interaction and the business as an integral part of relationships within the organization is importantly recognized, since the cooperation and development of relations are an intrinsic part of the supply chain. In the current competitive market, businesses and productive firms in addition to the company's internal resources, committed to manage and monitor resources and elements which come from outside of the company. Accordingly, activities such as procurement, production, maintenance and warehouse, inventory control, distribution, supply and service to customers that previously were done at the corporate level have been moved to the level of the supply chain. In the meantime, supply chain performance, as an important factor in the development of coordination and cooperation among the various

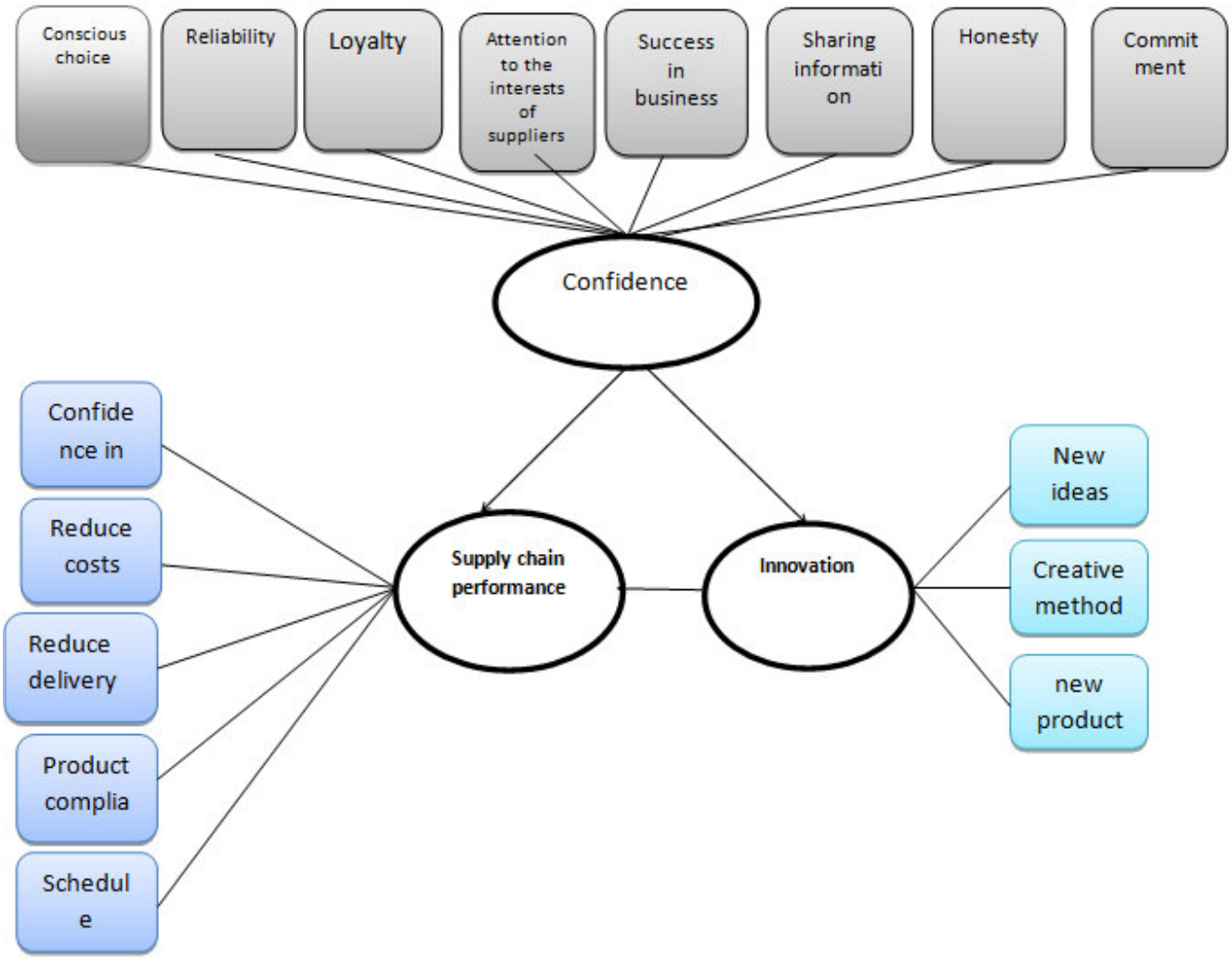
elements of the supply chain plays a vital role in improving the performance of companies in the supply chain .The country managers are faced with a serious problem of performance measurement. The proper functioning of the supply chain is a key role in the success of an organization and achieves sustainable profitability goals, especially in this regard with the establishment of system of performance measurement. Also, improvement of continuous supply chain its performance is recommended, according to the supplier to the customer. The development of a performance measurement system in the supply chain can effectively help in the creation and delivery products on time and cost less to an organization. The high cost of Iranian organizations and increasing competitiveness of organizations can be considered as a serious option to produce JIT .These days, confidence as the main factor of development and social capital in an organization is important. The importance of trust in facilitating social interaction and the business as an integral part of relationships within the organization is recognized. Since the cooperation and development of relations are an important part of the supply chain, many studies have sought to combine elements of key relationships and trust in these models to explain and predict higher performance to supply chain management (a Panaidies and Loven, 2009). In this view, trust as a factor in the implementation of cooperation in the supply chain is the major reason for the success of many of the activities in the world. To realize all the benefits of supply chain systems such as collaborative planning, forecasting and replenish, inventory management and completing ongoing programs which needs organizations to cooperate with each other is one of the important aspects of trust. According to Narasiman and Nayer (2005), trust among members of the supply chain directly leads to increase the delivery capabilities of the paired buyer and seller. Trust between suppliers and producers provide a close supply chain that facilitates the use of on-time delivery in the automotive industry in many economies. Responsive and quick implementation of supply chain leads to an increased level of confidence that this also applies to the automotive industry. Studies show the importance of supply chain executives to non-system supply chain, disabling efficient execution. On the other hand, empirical studies show that the full benefits of supply chain integration strategy for understanding and cooperation between members of the supply chain and continuing studying due to a better understanding of each other's businesses and help groups to improve its supply chain process through the provision of innovative solutions. Confidence as some central concept efforts to identify factors predicting the performance of the business relations in different industrial sectors and their supply chain. In addition, the concept of innovation is inseparable from efforts to improve quality and performance. The central concept is trying to achieve competitive advantage in the supply chain, through the creation and evolution of information technology to facilitate new operational methods in order to improve performance and increase the effectiveness of lead service. The development of innovation during this period through the relationship between suppliers and manufacturers can be achieved (Panaids and Loven, 2009). Trust as a strong predictor of positive performance in trade relations is known .Assuming that the confidence in the supply chain has not been properly evaluated in studies, in this study we are going to examine the impact of confidence and innovation on the performance of a supply chain. With this regard, several studies have been done which can mention to the studies of Kannock and Kiefer (1997); Selnes and Salis (2003), Vas and Hidi (2004), Holt et al. (2004), Cannan and Tan (2006), Hasman (2005), Harley and Holt (2004), Landry (2002), Woodside (2005), Hedfild and Nicole (2002), Holt and Kitchen (2001).

2. CONCEPTUAL MODEL

This conceptual model is based on a theoretical model to study the relationship between numbers of factors that are too important. This framework flows in the realm of the rational species flow. According to the former general framework, this research is shown in the figure and model. As shown in the conceptual model, the independent variable is trust, mediator is innovation and the dependent variables is supply chain performance.

Figure 1
The Conceptual Model of the Research

Conceptual model of the study



3. METHODOLOGY

This research according to its purpose is an applied research. The classification research on objective is functional and on descriptive is a survey-based method. According to the collected data, the study is a cross-sectional. Questionnaires are used in this study. In fact, this study gathered data to describe the current situation to answer questions and test hypotheses for this research. The population of this research was managers and experts of industrial companies in the city of Kermanshah. Since the study population consisted of employees of industrial enterprises was in the city of Kermanshah, amongst this population, samples were selected through the stratified random sampling. The number of population was 360 people which have been reported by the organization. Using Cochran formula, 186 people from the community selected.

The sample size is selected according to the study population.

$$n = \frac{Nt^2pq}{Nd^2+t^2pq} = \frac{360*(1.96)^2*0.5*0.5}{360*(0.05)^2+(1.96)^2*0.5*0.5} = 186$$

To collect the data required by the study, a questionnaire was used and distributed. To collect data for this study, three standard questionnaires

were used. This data will help us to find the necessary criteria for the research. In fact, this study is seeking to collect data to describe the current situation to answer questions and test hypotheses for research. The main tool for data collection in this study is questionnaire. The questionnaire of this study was Panaidys and Loven (2009) .In order to estimate the model, structural equation was used. The structural equation modeling (SEM) is a technique of multivariate analysis which is a very strong regression from multiple regression family. This model is general linear model GLM that allows researchers to examine the same species. The assessment of structural equation modeling can be done by two methods: analysis of covariance structure or structural linear equations and partial least squares (PLS). Structural equation modeling is a comprehensive statistical approach to test the hypothesis regarding relationships between variables and the latent variables. Measured variables are variables that can be observed and measured directly, these variables observed variables, which these parameters or variables also are called manifest. Latent variables are variables that are not directly observable and must be inferred from the measured variables, these variables measured by the covariance between two or more variables. The technique of structural equation modeling is a combination of two analyses: factor analysis (measurement model) and the analysis of course-extended (structural model). The measurement model assesses the relationship between measured variables and latent variables by identifying the structures of latent variables. In other words, the models determine how latent variables associated with observable variables or through them and each index are determined to what extent the underlying concept of dimensions. The structural model only shows the relationships between latent variables. In other words, the objective is to detect both direct and indirect effects of latent variables which independently associated with latent variables.

3.1. Reliability

In this study, in order to determine the reliability of the test Cronbach's alpha was used. The method for calculating the consistency (consistency), the instrument was used. The higher alpha there is, the higher reliability of the scale would be .According to the table (1), Cronbach's alpha for each of the four sections shows the desirability of collecting data.

Table 1
The results of reliability of test

	Confidence T1…T25	**Innovation** E1…E8	**Supply chain performance** S1…S16R
α Cronbach's alpha	0.901	0.738	0.893

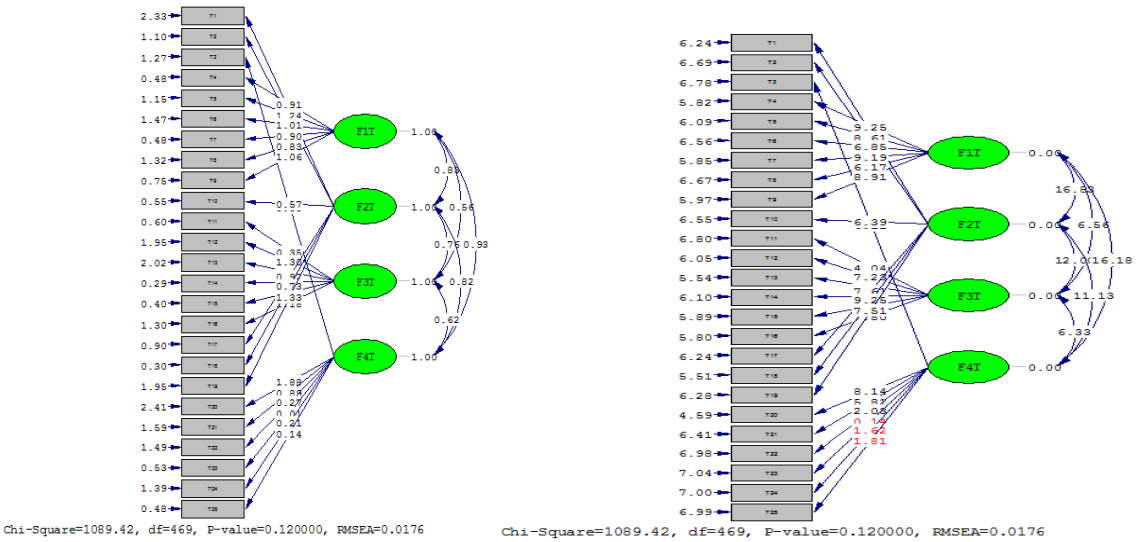
Source: Calculations' researcher

3.2. Exploratory factor analysis and confirmatory

Exploratory analysis is used when enough evidence to form a reasonable hypothesis about the number of factors to determine the number or nature of the factors that explain the distribution of variables is unavailable. Therefore, exploratory analysis is used as a method to develop and produce a theory and is not considered as a theory test. All methods tend to achieve similar results with principal components analysis .In this section, we focus on the analysis of confirms that the measure a part of a pattern. The theory test is a confirmatory factor analysis model where the analysis begins with a previous hypothesis. This pattern has been observed on the factors and variables and other variables (latent variables) and the factor structure hypothesis for correlation observed is used. Confirmatory factor analysis is a complex algebraic and for any calculations always used LISREL or equivalent programs. The below graphs confirmed the exploratory factor analysis and provide the appropriate conditions for the analysis.

Figure 1

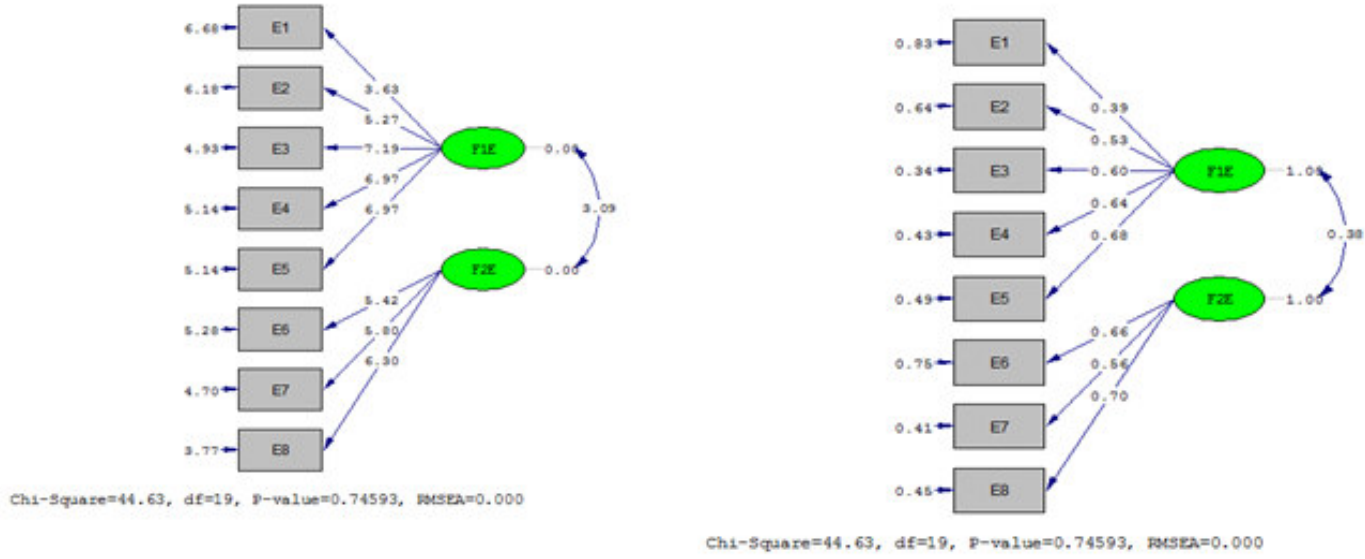
The variable measuring trust with measured values of t



Source: Calculations' researcher

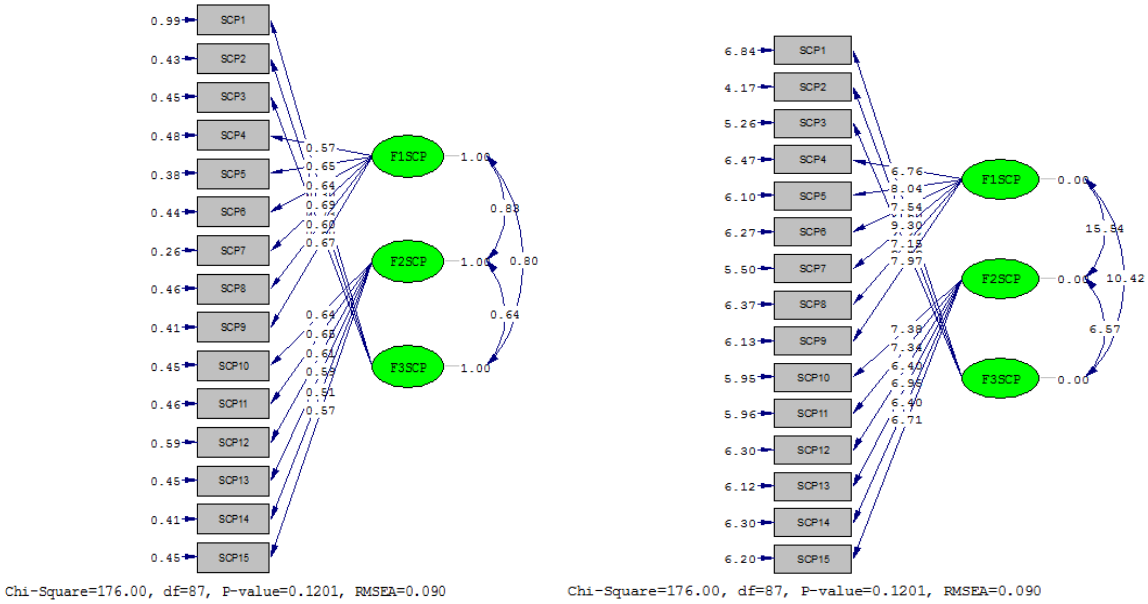
Figure 2

Model of variable measurement of innovation with t-values



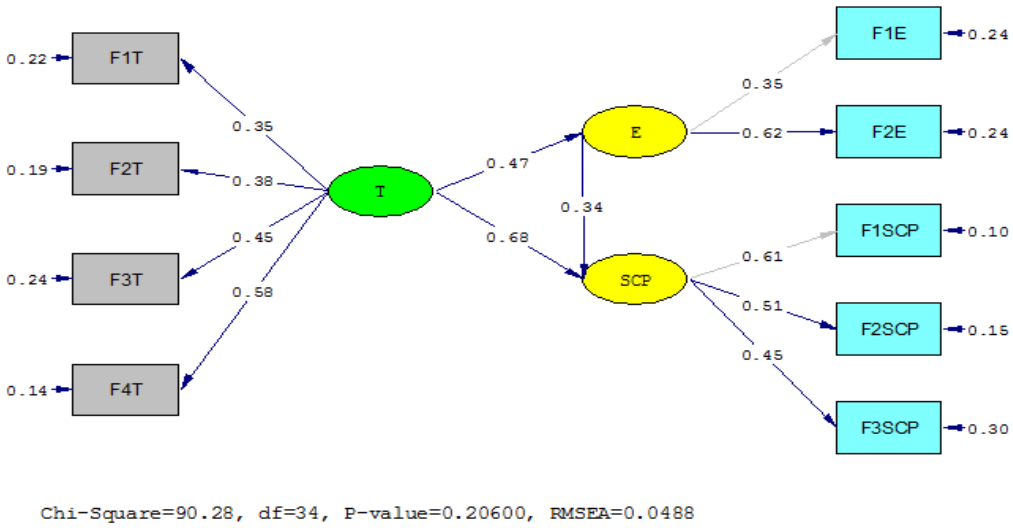
Source: Calculations' researcher

Figure 3
Measurement model supply chain performance with t-values



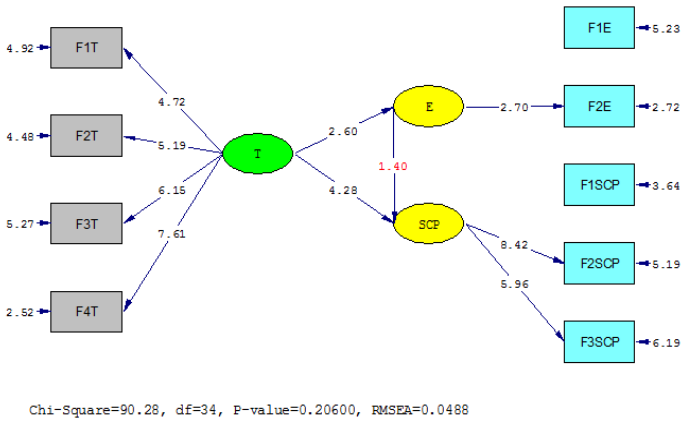
Source: Calculations' researcher

3.3. Path analysis and estimation of model



The structural model is hidden causal relationships between variables. The objective is to detect both direct and indirect effects of latent variables which are exogenous and endogenous which is used to analyze the path of the research model. At this stage, we estimated the conceptual model. At this stage, it is necessary to introduce the values of the factor scores. In addition, structural model estimated in this.

Figure 4
The first model with t-values



The aim of this study as an experimental study was to explore the meanings and concepts mentioned in the previous sections. Therefore, data obtained from the questionnaires were analyzed and we have seen that the extended measures and models are authentic, valid and were statistically significant. In order to exploit the results of model estimation, model must be fully interpreted. To interpret the results of the structural model, the model should be appropriate and fitted goodness and using some tests to confirm the suitability of the estimates. In such circumstances, the results can be trusted on the model. The indicators in this study can be concluded that the model was a good fit and reliable and can cite to the results .It is notable that this study was based on the proposed model which is seen in the above figure. In addition to direct effects, indirect effects through mediated variables of innovation are obvious. For a correct interpretation, the overall effect of direct and indirect effects should be considered. The direct and indirect effects is shown in the table (3).

Table 2
The results of the analysis (structural model)

The total effect(1)+(2)	Indirect path (2)	Direct path(1)	Path ofto ←
0.47 (2.6)	-	0.47 (2.6)	ConfidenceInnovation ←
0.84 (7.77)	0.16 (1.39)	0.68 (4.28)	ConfidenceSupply chain performance ←
0.34 (1.4)	-	0.34 (1.4)	InnovationSupply chain performance ←

Note: The number of above rows is path's coefficients and the bottom row is t-values of the path.

In this chapter in to order to review research objectives and to test the hypothesis, the factors affecting estimation of models and measurements were evaluated. Significant judgments about the suitability of the models and paths carried out according to the criteria of fit and t-values.And the results show a significant effect of reliability on the performance of the trust supply chain.

3. CONCLUSION AND RECOMMENDATIONS

As has already been mentioned, in this study, reliance on innovation and industrial companies in the city of Kermanshah assessed. The evidence suggests there is a significant relationship between the variables. The results of the analysis indicate that any of the variables have a significant relationship of trust, innovation and supply chain performance. The existence of trust between managers, employee and suppliers of raw materials can provide the satisfaction of working and life, and works relating to produce new ideas that guide the thinking and innovation better and can take advantage of these thoughts. With creating innovation by the organization, the competition can be used as a competitive advantage and a way to reach organizational goals which are predetermined. In so doing, this led to the development of organization. The trend of innovation in supply chain systems and processes by investing in certain assets are related to the producers and suppliers, respectively. Trust reduces the risk of opportunistic behavior of its members, and hence the possibility of investing in innovations to give improved supply chain. Acceptance of innovations to contribute to the performance and effectiveness of the company is taken into account. In the field of supply chain management, willingness to innovate, especially in terms of supply chain integration, is necessary. For example, advanced connectivity with customers, the company will be able to transmit and receive information to act on its promise to customers. The acceptance of new ideas to improve administrative efficiency and adapt to new technologies will help to improve supply chain performance. Supply chain performance is one of the critical factors any organization to complete the process and raw materials on the production line to reduce costs, expedite production and placement of products and commodities produced in the customers. Integrations between supply chain members is primarily to achieve the objectives of the logistics and also to facilitate compliance with the most recent information technology which lead to logistics innovations to entire supply chain. Use and application of information technology would increase the performance of orders, purchase of raw materials and customers' access to product features in the company's supply chain performance. Doing so rises a competitive advantage for the organization .Trust and innovation has a major impact on supply chain performance. By building trust and respect of both the manufacturer and supplier of raw materials, interests and satisfaction would achieve. The occurrence of honest and reliable suppliers for managers of industrial companies is important. Hence the relationship with suppliers of raw materials due to the demands of the production will improve supply chain performance. Also, manufactures' products in less time, leading to lower production cost and providing the products in the shortest time in the market and for consumers. Cultural and creative thinking as well as the use of innovative ideas among employees would create a competitive advantage. Trust is one of the major factors for every person and organization. If the supplier of raw materials has not trusted to the contracts signed with the confidence, they do not anything even with advance planning. The other party cannot adhere to their commitments if the buyers of raw materials and products do not follow their duties. Therefore, confidence and contracts from both sides is important. It is offered to industrial companies that focusing on this issue by creating confidence among suppliers and employees increased innovation. Trust is one of the most important factors of suppliers of materials and product manufacturer in industrial companies to identify and focus on this point. Trust is encouraging for both sides. Supply decisive when sending orders to organizations if it is true and it will comply with the manufacturer's assurances. So, the enterprise directors recommend the establishment of trust and confidence between suppliers and producers which make progress on both sides and lead to increase satisfaction and stronger long-term relationship. There is mutual trust which increases exchanges between the supplier and the manufacturer. Innovation is vitally an important for managers. It in the different sectors of production and the raw materials can bring an organization to its goals. According to the needs of each sector and the promotion of innovation, production can accelerate, leading to reduce the additional costs .

Therefore, it is recommended that managers of industrial companies with innovation provide the needed information to their employees. In addition, by creating innovation in products, the competition will enhance and improve supply chain performance.

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