

# Effect of Supplier Selection on Quality Control

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**Abstract:** *Supplier selection is one of the factors impacting quality since it raises the rejection rate and reduces productivity. Despite the fact that cost has been extensively researched in the recent past, few studies concentrate on the mediation influence of performance and conformity. Main goal of this study is to look at the relationship between lead time, supplier sustainability, services, risk factors, supplier capacity, performance, conformance, and cost when choosing a supplier, as well as the mediating function of performance and conformance on cost. For the objective of this study, a sample of 250 experts from various steel sectors professionals was chosen. In addition, the SmartPLS 3.0 programmer was utilized to evaluate the data. Using the PLS-SEM, determine whether the model is fit. The independent variable (lead time, supplier capacity, service, and supplier sustainability) According to the results of this survey, has a big positive impact on cost. The research indicates that there is a mediating influence on performance and conformity between lead time, supplier sustainability, risk factor, services, and cost. This research can assist supply chain managers in selecting suppliers and maintaining quality control. The findings may help firms in identifying new suppliers, resulting in increased productivity and profitability.*

**Keywords:** *Conformance, Risk Factor, Performance, Cost, Lead Time, service, sustainability of supplier, and supplier capacity.*

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## Introduction

A number of risk and socioeconomic characteristics impact the decision to choose a supplier in a supply chain, which are typically incorporated as restrictions or filters (Wang et al., 2010). Developing a more systematic and open approach to purchasing decisions, particularly in the area of supplier selection, may help to encourage authentic supplier selection (Carter et al., 1998). Managers regard quality to be the most critical supplier feature, according to the majority of the articles referenced above. The conceptual articles emphasize Managers should not choose suppliers based solely on price (Khan et al., 2018). Supply relationship management in supply chains looks for exceptional suppliers that can deliver low prices and high quality (Wang et al., 2010). The final buyer-supplier relationship is heavily influenced by the selection of a suitable provider.

The direct and indirect consequences of inadequate decision-making related to supplier selection have become more serious (Thiruchelvam & Tookey, 2011). This interrupts the entire supply chain procedure and has an influence on the quality of the goods purchased, requiring the end-user to make a quality compromise in the end. The final buyer-supplier relationship is heavily influenced by the selection of a suitable provider. If the technique is done correctly, a

best-quality, longer-lasting connection is more likely (A. H. I. Lee et al., 2009). Appropriate supplier selection can help you save time and optimize your supply chain. May help their suppliers by offering information, skills, and As a result of their experience, they gain from improved delivery performance and reduced manufacturing delays caused by low-quality materials (Ghodsypour & O'Brien, 1998; Lee et al., 2009). Supplier selection is a common practice that has economic, environmental, and social benefits (Shoaie et al., 2019). It will increase the quality of the final product and reduce the lead time (Kannan & Tan, 2006).

Quality control includes regular analyses of entering materials and how they impact the outcome of produced items (Azizi et al., 2015). Today's firms consider quality as a significant strategic component of competitive advantage, and enhancing product quality remains a primary focus (Kaur et al., 2019). Quality control is focused on the problem of preventative effort rather than simply removing defective outputs through evaluation procedures. Quality is a complex concept. Certain characteristics and attributes gain or lose relative value over time (Lüdeke-Freund et al., 2018). A good supplier selection leads to the establishment of connections amongst a manufacturer and its suppliers, which is imperative since a lack of coordination creates unnecessary delays, which leads to poor customer service due to quality issues (A. H. I. Lee et al., 2009). In any organization, selecting the right supplier is crucial since it lowers unit pricing and improves corporate price competitiveness (Luthra et al., 2017).

Companies are now up against fierce competition, forcing them to look at new ways to improve quality while cutting costs and shortening lead times. As a result, it's vital to place a greater emphasis on Supplier selection and evaluation, as this may assist minimize rejection rates, prices, and period to arcade while also improving merchandise quality. They have the potential to have a significant influence on production costs and lead times. Although a range of strategies and models for selecting and evaluating suppliers have been employed (A. H. I. Lee et al., 2009)

We see a lot of item rejections in manufacturing organizations due to hurried purchases and poor supplier selection, which reduces the quality of purchases and has an influence on the entire efficient supply chain model. The purpose of this study is to determine how supplier choosing criteria improve, improve or change quality control in Pakistan's steel sector.

### **Literature Review**

Supplier selection (SS) has a direct influence on obtaining high-quality items and, ultimately, customer satisfaction (MacGregor-Fors et al., 2019). Supplier selection is defined as a multi-criteria dilemma with both qualitative and quantitative features (Ghodsypour & O'Brien, 1998). In one of their early studies on the issue, Weber et al. (1991) identified approximately 20 supplier attributes that managers trade-off when selecting a supplier. As a consequence, choosing the right supplier opens up a lot of opportunities for firms to supply high-quality items at reasonable prices. The supplier selection process consists of key steps to determine the need for a new supplier, that include (i) identify and develop selection criteria, (ii) initial screening of potential suppliers from a large list, (iii) final supplier selection, (iv) continuous evaluation and evaluation of selected suppliers (Mukherjee, 2016). A strong supplier selection may help an organization lower operating expenses and enhance the quality of its final products in the long run (Kumar et al., 2018).

Outstanding to the important influence of supplier individualities on cost, quality, delivery, and service in attaining supply chain goals. A firm's competitiveness is strongly reliant on its suppliers, who are becoming increasingly important in the supply chain (SC) (Narasimhan & Talluri, 2009). Proper supplier groups may help a company's social and

financial structure by cutting costs and confirming continuous customer consummation (Zimmer et al., 2016). In today's supply chain options, appropriate suppliers are required for cost efficiency. Choosing a low-performing supplier offers a lot of disadvantages that negatively affect firms in a variety of ways, including lost time spent repeating operations (Luzon and El-Sayegh, 2016). Excessive purchase and procurement prices are a concern, but good supply base building is also essential, thus this decision will have a direct impact on the business continuity of a company (Rezaei et al., 2016). Hence, choosing and assessing suppliers is essential for maintaining and expanding a productive and efficient supply chain.

Advances in quality management throughout the 1980s led to an increasing global acceptance of the concept of corporate improvement through quality control (Azizi et al., 2015). Today's organizations see quality as a top focus (Kaur et al., 2019). Quality control is frequently mentioned as a feature of a high-quality service. Given the necessity of consistency in production, more or better manufacturing equipment receives financing for quality control systems (Ammar et al., 2021). Quality control is performed on a regular basis. Incoming material assessments are part of the materials quality control process. Quality effort must be pushed from the top of the company down to the employees, and managers must encourage this attitude (Parikh et al., 2016). Critical issues like quality, material handling costs, and delivery time constraints are all managed by a comprehensive documentation system. Quality was the responsibility of the quality assurance section. The majority of organizations are now understanding that they need to change their culture to one in which quality is everyone's responsibility (Narasimhan & Talluri, 2009).

Companies utilize an endless variety of approaches and procedures to launch a quality improvement program, and the method chosen and how it is implemented influences how the program is seen by workers (Jarrett et al., 2019; Narasimhan & Talluri, 2009). According to the research, combining quality control activities with cost management may considerably help to greater manufacturing performance in the business, as well as the realization of core competencies for dealing with global challenges. The first step in any quality improvement process is for an organization to confess that it has a problem and that it has to change its culture and structure in order to improve (Parikh et al., 2016). To achieve their suppliers' quality requirements, they understand their suppliers' interior processes and advance component efficiency in close partnership with their suppliers' factories (Ammar et al., 2021). Integration can be described as the capacity of various supply chain partners to collaborate to achieve mutually acceptable outcomes (Kaur et al., 2019). Thanks to digital technology paired with increasingly complicated procedures and smarter processes, high-performance teams will be able to continuously supply consumers with high-performance and quality goods (Ammar et al., 2021).

### **Cost**

Because of its influence on a company's competitive edge, the notion of supply chain management (SCM) has achieved traction in today's market. SCM is the discipline of improving the supply of products, services, and associated evidence from supplier to customer, and it is concerned with the efficiency with which the parties involved in the provision of the product as a whole deal with ultimate consumer demand in terms of cost (Cowan, 2013).

### **Mediating Effect of Conformance**

The results suggest that the most important factors influencing these key aggregate indicators are cost awareness and how the supply chain implements cost efficiency and cost

control measures. Confidence-based conformity awareness for high-quality, on-time delivery, and contextual awareness based on resource usage accuracy, availability, and transparency are additional aspects of thematic analysis. Changes and delays to meet customer needs in the supply chain related to materials (S10 and S11), orders (S8), and quality (S8) are characterized by conformance-related awareness (P2). In this regard, the perceived uncertainty depends on the level of confidence in the supply chain for high quality, on-time delivery. In the supply chain, confidence levels support orchestration and help practitioners improve operational performance and R & D support (Durugbo et al., 2020).

Organizations that embrace the SCO culture can consider a variety of factors when choosing a supplier to improve the quality of design and compliance. The organization is more responsible for shared SCM collaboration and strives to select suppliers that accept site ratings from a cultural perspective (Kannan & Tan, 2006). These two requirements suggest that the supply chain must have a strong SCO culture. Organizations with an SCO culture show a high level of trust and commitment to their supply chain partners and are more likely to live up to their expectations (Lee & Kim, 2023; Tiwari et al., 2023). In addition, it is observed that a high level of compatibility (as one of the shared values of the SCO culture) of an organization will force the organization to select suppliers that are compatible with its goals and objectives (Salimian et al., 2020).

One of the most important processes in supply chain management is supplier selection. New supplies for the important role that suppliers play in terms of service flexibility, product / process technology, supplier profitability, supply suitability, quality of conformity, and relationship density that impact supply chain companies' profits. Chain strategies include the following: This has become even more important. Supplier selection is a multi-criteria decision-making problem where certain factors are more relevant than others. Many input facts for decision making are not known exactly in real life (Li et al., 2012).

By building standardized modules and coordinating supply chain design with product modularization, companies can significantly reduce product development time. The project team can start the project with the current standardized module or use the module as a template to work with the supplier to build a higher-quality original product. Product modularization standardizes product components and avoids unnecessary variability between products (Spivak & Brenner, 2018).

A number of supplier concerns connected to SCM were also uncovered in this investigation. Firms that use SCM outsource more today than in the past, and they use suppliers that can provide a strategic value to the company in terms of product quality, delivery responsiveness, and flexibility. As a result, the competence and conformity of second-tier suppliers has become a critical concern. The consequence is that buying managers should play a more active role in finding first- and second-tier supplier connections and become involved in their management. This study backed up a number of previous research results indicating quality, customer service, and delivery criteria are more significant than product pricing when it comes to supplier selection and assessment (Salimian et al., 2020).

Assessing risk exposures from new or existing suppliers requires systematic risk factor analysis when talking about the impact of risk factors on compliance related to the impact of supplier choices for quality control. Risk factors are a collective concern of all business operations related to key characteristics that must be demonstrated before a supplier can be recognized as a reliable source of information (Haraguchi et al., 2023). This is defined as an essential characteristic that a supplier must demonstrate before it can be certified as a reliable source of information. Twenty-eight years after Dixon investigated supplier choices,

specification compliance and on-time delivery proved to be the most important characteristics as part of the consistency factor. The supplier that does not show acceptable performance in these two categories is excluded from consideration throughout the selection process, so these issues are contractual eligibility. As a result, before focusing on other competitive initiatives, suppliers must ensure that they are achieving their customers' expectations in these two important areas (Westphal et al., 1997).

**H1: Conformance mediates between:**

- a) Sustainability and Cost
- b) Lead Time and Cost
- c) Services and Cost
- d) Supplier Capacity and Cost
- e) Risk Factor and Cost

**Mediating Effect of Performance**

Supply chain management is hailed as a go-to method for boosting competitiveness, Firms embrace supply chain management because it gives new chances to decrease cost, improve quality, and reduce reaction time as competition encourages them to discover better methods to satisfy consumer expectations (Adida & Perakis, 2014; Cachon & Lariviere, 1999). Operative monitoring in responsible SCM, such as audits and third-party certification, can encourage suppliers to enhance their technical skills in green and social concerns, hence improving their sustainability performance. In the South Korean automobile sector, for example, buyer's new green procurement strategy originated and promoted the growth of a supplier's environmental competencies (Damert & Baumgartner, 2018). Previous research has found that buyer-imposed codes of conduct and audits have a considerable beneficial impact on the working conditions of suppliers in developing nations (De Neve, 2009). It has also been noted that buyers' support for responsible SCM improves supplier performance, Includes environmental, social and operational performance. Literature shows that the technical and relationship skills of large buyers (i.e. world-leading brands) support knowledge transfer and suppliers can solve environmental and social problems Increase (Luthra et al., 2017; Parmigiani et al., 2011).

The performance of the system and subsystems determines whether a SC system succeeds or fails. The global economy has altered dramatically during the last two decades for a variety of reasons. The modern corporate environment is characterized by increased complexity, instability, risk, and unpredictability (Salimian et al., 2017; Zhang & Figliozzi, 2010). However, as a result of globalization, SC operations have been exposed to a variety of threats. In general, companies collaborate with suppliers only for the sake of profit maximization; risk mitigation is a relatively new goal in the Supplier selection process. Supplier selection risks include product quality risks, environmental hazards, service risks, conflicting regulatory requirements, supplier profile risks, geographic location, dislike of nature, deadlines and lead times, financial status, performance, import restrictions and response to changes. There is flexibility and so on. And technology and R & D support. For a suitable and long-term supplier selection process, both positive and negative elements of suppliers should be evaluated. As a result, multinational organizations must manage and analyze every chance to improve their operational performance in order to remain competitive in the marketplace by choosing the right trade partners (Yazdani et al., 2020).

Human labor is an integral part of the value creation process of the service supply chain, and physical handling of products leads to standardized, centralized procedures and control of the manufacturing supply chain, but many decisions are made locally. This is completely impossible with the service as it is done. And the volatility and uncertainty of the results is increased by human involvement. In addition, service supply chain efficiency focuses on capacity management, resource flexibility, information flow, service performance, and cash flow management. These difficulties are very different from those faced by industrial supply networks and require a thorough assessment of the service supply chain. We need to better understand these issues (Sengupta et al., 2006).

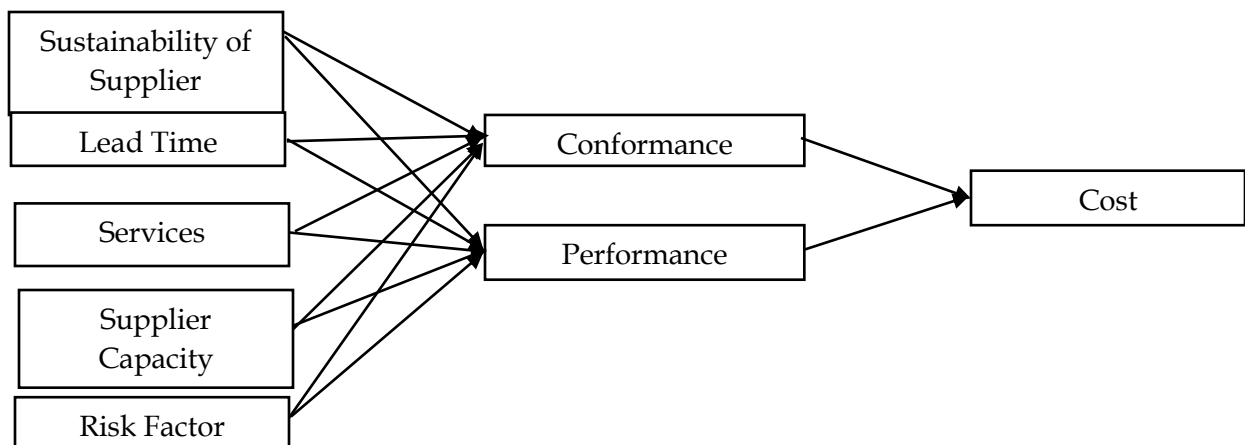
Contract terms have gotten a lot of attention because of their influence on ordering strategies and supply chain performance. When the supply chain works as a team, it performs better under diverse information and management frameworks. Another study presents a one-period model with identical vendors served by a supplier facing stochastic volume shocks, which is similar to ours (Lee et al., 2009). When capacity is in short supply, it is distributed proportionally to orders. They illustrate that shops may overstate their orders as a result of rivalry for limited capacity (Cachon & Lariviere, 1999).

Fluctuations in customer demand are one aspect that can impact SC performance. However, to analyze the systematic impact of lead-time fluctuations, end-customer demand is considered fixed and known at all stages of the chain. This final assumption eliminates the impact of demand forecasts, which can distort demand data, especially early in the chain. These assumptions can reduce the impact of order bundling (due to order cost), customer demand volatility, and forecasting. Using this method, you can calculate the pure impact of LT uncertainty on SC inventory system metrics such as order variance, Bullwhip effect, and performance indicators (Heydari et al., 2009). Based on the above mentioned discussion, this study formulates the following hypothesis:

**H2:** Performance mediates between

- (a) Sustainability and Cost.
- (b) Lead Time and Cost.
- (c) Services and Cost.
- (d) Supplier Capacity and Cost
- (e) Risk Factor and Cost.

### Conceptual Framework



*Figure 1: Conceptual Framework*

## Methodology

The study is quantitative and an empirical test of the hypothesis is considered appropriate (Fernandez & Moldogaziev, 2013). A representative sample of the population is required as it is impossible to get answers from a large group of people surveyed (Pongsakornrunsilp et al., 2013). According to the annual reports of several Pakistani steel companies, the population covered by this survey includes all steel industry employees working for private Pakistani companies and has more than 300 people. There were different perspectives on sample size selection. It was expressed. To perform multivariate analysis, we recommend that each variable has at least 29 responses. Similarly, some researchers advise that a sample size from 250 companies is appropriate for the study, while others recommend choosing a sample size based on confidence intervals and confidence levels (Black & Babin, 2019). To obtain data from the respondents in question, this research study used a "convenient" sampling strategy. This method allows researchers to select respondents based on their level of comfort. After collecting the data, we used statistical tests to empirically analyze the relevant information. Descriptive, reliability, and validation tests were performed using SPSS17 and SmartPLS 3.0 for this purpose (Ansari, 2020).

### Instrument Development

Conformance (5 items)(Ekholm, 2009), cost (5 items)(Cowan, 2013), lead time (5 items)(Julius, 2016), performance(5 items), service(5 items)(Ting & Cho, 2008), supplier capacity(5 items)(Swaminathan et al., 1997), risk factor(4 items)(Alikhani et al., 2019), and sustainability of supplier(3 items) The questionnaire had a total of 41 items, comprising demographics, and 37 items replicating the selected components. A 5-point Likert scale was utilized to fill out the surveys, with 5 representing "strongly agree" and 1 representing "Strongly Disagree." The dependability of the instrument used in this study has previously been proven, which implies that the Cronbach alpha is more than 0.7, which is a good sign (Andersson & Lurie, 2018).

## Results

The marital status of the respondents was found to be 131 (58%) single, 22 (9%) committed, and 73 (33%) married, according to the results portrayed in this study. All of these responders work in Pakistan's steel industry. In terms of education, there were 88 (39%) respondents with a graduate degree and 138 (61%) respondents with a postgraduate degree.

### Descriptive Statistics

Normally, if your data does not follow a normal distribution, you will not be able to perform regression analysis on your data. Descriptive analysis is used to determine the univariate normality of the collected data. If the skewness and kurtosis range is 3 to +3, the data is considered normal (Adida & Perakis, 2014; Hair et al., 2010). Table 1 shows the overall results of the descriptive statistical analysis. This includes sample mean, standard deviation, kurtosis, and skewness.

*Table 1: Descriptive statistics*

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Conformance	1.8	5	3.514	0.738	-0.385	0.329
Risk Factor	1.25	5	3.526	0.856	-0.949	1.091
Sustainability	1	5	3.418	0.960	-0.756	0.374
Cost	1.6	5	3.474	0.777	-0.594	0.109

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Lead Time	1	5	3.328	0.832	-0.908	1.366
Performance	1.6	5	3.729	0.791	-1.207	1.469
Service	2	4.8	3.712	0.721	-0.931	0.097
Supplier	2	5	3.664	0.697	-0.978	0.435

### Reliability Analysis

The Cronbach's alpha value is used to evaluate items that are closely related to the internal integrity of the normal distribution data. If the alpha value is greater than 0.7, the data is considered reliable (Garson, 2016; Hair Jr. et al., 2017). The equipment used in this study was obtained from a previous study, but reliability tests need to be repeated due to cultural differences and respondents' comprehension (Ansari et al., 2017; Ramish, 2020). Therefore, for the purposes of this study, reliability tests using Cronbach's alpha have been performed and the results are summarized in a table 2 provided below:

*Table 2: Reliability Analysis*

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Conformance	0.730	0.743	0.818	0.475
Cost	0.825	0.839	0.880	0.599
Lead Time	0.796	0.856	0.856	0.546
Performance	0.855	0.880	0.896	0.636
Risk Factor	0.743	0.786	0.835	0.565
Service	0.837	0.856	0.885	0.607
Supplier Capacity	0.713	1.056	0.786	0.440
Sustainability of Supplier	0.724	0.729	0.844	0.644

This table shows that cost compliance is the least reliable ( $\alpha = 0.730$ ,  $M = 3.514$ ,  $SD = 0.7385$ ) and performance is the most reliable for cost ( $\alpha = 0.855$ ,  $M = 3.729$ ,  $SD = 0.791$ ). Overall reliability value of the equipment used in this study, that is, alpha is 0.773, which includes both independent and dependent variables (Ahmed & Ansari, 2020).

### Correlation Analysis

Correlation analysis is used to determine whether or not there is a link between variables. The correlation analysis test verifies multi-collinearity among variables and is required for regression analysis to be performed. Scholars recommended that the correlation between the constructs be between 0.20 and 0.90, or else the item be removed. The items can also be combined if the correlation coefficient is larger than 0.90 (Ansari, 2020; Bell & Bryman, 2007; Hair et al., 2010). Table 3 shows the findings of the correlation study.

*Table 3: Correlation Analysis*

	Conformance	Risk Factor	Sustainability	Cost	Lead Time	Performance	Service	Supplier
Conformance	1							
Risk Factor	.638**	1						
Sustainability	.384**	.717**	1					
Cost	.404**	.668**	.770**	1				
Lead Time	.412**	.670**	.352**	.391**	1			
Performance	.548**	.679**	.704**	.702**	.585**	1		
Service	.550**	.579**	.582**	.525**	.476**	.811**	1	
Supplier	.247**	.244**	.316**	.286**	0.056	.389**	.366**	1

### Construct Validity

Since the sample used in this study is different from other studies, the application in the context of the Pakistani setting may affect the results. Therefore, convergent and discriminative validity tests are used to determine the validity of the construct (Ab Hamid et al., 2017; Fornell & Larcker, 1981). The AVE can be used to decide the convergent validity test (common variance explained), the values of which ought to be greater than 0.5 (Hair et al., 2010).

The square root of variance extracted is calculated during the discriminant validity test to check whether it is greater than subsequent correlation pair values (Ansari, 2020; Roy et al., 2020). As shown in Table 4, the data from the respondents in this study meets the criteria for discriminant validity.

Table 4: Discriminant Validity

	1	2	3	4	5	6	7	8
1. Conformance	<b>0.689</b>							
2. Cost	0.443	<b>0.774</b>						
3. Lead Time	0.487	0.379	<b>0.739</b>					
4. Performance	0.537	0.725	0.642	<b>0.798</b>				
5. Risk Factor	0.715	0.702	0.665	0.733	<b>0.752</b>			
6. Service	0.533	0.541	0.510	0.82	0.618	<b>0.779</b>		
7. Supplier Capacity	0.300	0.389	0.26	0.531	0.43	0.449	<b>0.663</b>	
8. Sustainability of Supplier	0.431	0.783	0.357	0.727	0.728	0.579	0.444	<b>0.803</b>

### Structural Equation Modeling and Mediation Analysis

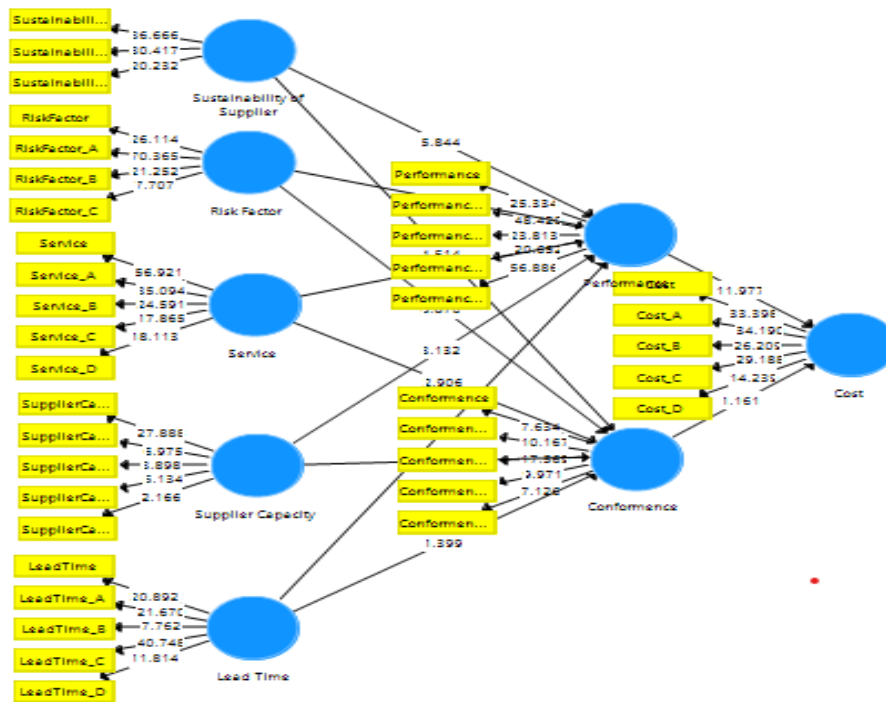


Figure 2: Structural Equation Modeling Using Smart PLS

The entire model was tested using SmartPLS 3.0 software. PLS Algorithm was used to conduct the statistical analysis and it was confirmed that no item is retained that has the loading less than 0.5 (Hair et al., 2010). Bootstrapping test was used to test the hypotheses with subsamples of 2000 (Garson, 2016). Table given below depicts the summary of results.

Table 5: Mediation Analysis

	Original Sample (O)	T Statistics ( O/STDEV )	P Values
Lead Time -> Performance -> Cost	0.192	8.414	0.000
Risk Factor -> Performance -> Cost	-0.015	0.324	0.746
Supplier Capacity -> Performance -> Cost	0.082	3.136	0.002
Sustainability of Supplier -> conformance -> Cost	-0.020	1.272	0.203
Risk Factor -> Conformance -> Cost	0.063	1.130	0.259
Service -> Conformance -> Cost	0.017	1.159	0.247
Supplier Capacity -> conformance -> Cost	-0.001	0.166	0.868
Lead Time -> Conformance -> Cost	-0.006	0.815	0.415
Sustainability of Supplier -> Performance -> Cost	0.228	4.971	0.000
Service -> Performance -> Cost	0.304	9.148	0.000

The results of the test designate that there is a significant effect of lead time through performance on Cost, Supplier capacity through on performance on cost, Sustainability of supplier through performance on cost and Service through (Kline, 2011) on cost (See Figure 2). Consequently, performance and conformance can be measured as a mediating factor between Lead Time, Risk Factor, and Supplier capacity (Asyraf & Afthanorhan, 2013), of supplier, Risk Factor, Service, Supplier capacity and cost. For evaluating the mediation analysis, the bootstrapping method with subsamples of 2000 is used in this research. After performing the bootstrapping test, it was found that the definite indirect effect of lead time, supplier capacity (Garson, 2016), of supplier and service through performance on cost is significant, but the relationship between Risk Factor sustainability of supplier, service, supplier capacity, lead time through conformance is non-significant.

### Discussion and Conclusions

We attempted to illustrate the importance of supplier selection in terms of quality control, as well as the influence of sustainability, risk factor, service, supplier capacity, and lead time on mediating variable conformance and performance and then mediating variable cost implications. The findings of this study's selected hypotheses were found to be compatible with those of earlier investigations. The specific findings of this study are detailed below to better illustrate the justification of the hypothesis in relation to earlier investigations.

#### Hypothesis 1 Results and Implications

The influence of a supplier's risk factor on supplier selection and quality control was hypothesized in Hypothesis 5. This investigation supported the hypothesis that was chosen. The findings show that as the supplier's risk factor rises, it has a negative impact on compliance, which has a direct cost impact. This result is also in line with earlier research answers, which suggest that when a supplier's risk factor increases, the supplier's conformance will exhibit non-significant behavior in terms of conformance and cost (Rezaei et al., 2016).

The findings show that if the supplier's level of service declines, it will have a negative impact on compliance, which would have a direct cost impact. This result is also in line with earlier research findings, which suggest that when a supplier's service is poor, the supplier's conformance would exhibit non-significant behavior in terms of conformity and cost (Li et al., 2012).

The findings show that when a supplier's degree of sustainability rises, it has a good impact on performance, which has a direct impact on cost. This result is also in line with prior research findings, which show that the greater the supplier's sustainability, the better the supplier's performance in terms of both performance and cost (Salimian et al., 2017).

The findings show that when the supplier's lead time rises, it has a negative impact on compliance, which has a direct cost impact. This result is also in line with prior research findings, which suggest that the longer the lead time, the less significant the behavior is in terms of conformity and cost (Abdel-Basset et al., 2018).

The findings show that if a supplier's capacity declines, it will have a negative impact on compliance, which would have a direct cost impact. This result is also in line with prior research findings, which suggest that the smaller the supplier capacity, the less significant the behavior of the supplier in terms of conformity and cost (Cengiz et al., 2017).

The findings show that when the supplier's level of service improves, it has a good impact on performance, which has a direct impact on cost. This result is also in line with prior research findings, which show that the greater the quality of a supplier's service, the better the supplier's performance in terms of both performance and cost (Sengupta et al., 2006).

### **Hypotheses No 02 Results and Implications**

The findings show that when a supplier's level of sustainability declines, it has a negative impact on compliance, which has a direct cost impact. This result is also in line with prior research findings, which suggest that when a supplier's sustainability is poor, the supplier's conformance would exhibit non-significant behavior in terms of conformance and cost (Luzon & El-Sayegh, 2016).

The findings show that if the supplier's lead time is reduced, it will have a favorable impact on performance, which will have a direct impact on cost. The findings are consistent with previous studies that showed that shorter supplier lead times improved supplier performance in terms of both performance and cost (Heydari et al., 2009).

The findings show that if the supplier's capacity grows, it will have a beneficial impact on performance, which will have a direct impact on cost. This result is also consistent with past research findings, which show that the larger a supplier's capacity, the better the supplier's performance in terms of both performance and cost (Cachon & Lariviere, 1999).

The findings show that when the supplier's risk factor rises, it has a negative impact on performance, which has a direct cost impact. This result is also in line with prior research outcomes, which suggest that the higher the supplier's risk factor, the less significant the supplier's performance in terms of both performance and cost (Shoaie et al., 2019)

### **Limitations and Future Research**

This research was conducted by selecting the sample from a metropolitan city of Pakistan. In future, the respondents from rural areas can also be considered to test the hypotheses. Moreover, the psychographics and demographics were not considered to be a part of the model which was tested in this research. Future research may consider this gap and identify the psychographics related factors to be used.

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