

# EFFECT OF QMS ON INNOVATION AND FINANCIAL PERFORMANCE A DEVELOPING COUNTRY PERSPECTIVE

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## Abstract

*This paper aims to examine empirically the influence of QMS implementation on financial performance via innovation in the manufacturing organizations of Pakistan. A questionnaire was developed to collect the data from manufacturing organization. The Structure Equation Modeling (SEM) was used to examine the hypotheses. The findings suggest that QMS implementation has a significant and positive role in improving innovation and financial performance of the manufacturing organizations. Furthermore, it was revealed that the type and size of the (ISO certified) organization did not influence the organizations' innovation and financial performance. These results provide support to the policy makers and top management of the organizations to implement QMS in order to achieve higher operational performance.*

**Keywords :** QMS, Innovation, Financial Performance, Manufacturing Organizations.

**JEL Classification:** E600

## Introduction

ISO 9001 is widely accepted quality standard to maintain Quality Management System (QMS) of the organizations. Prior research suggests that QMS (ISO 9001) adopted by organizations to improve performance of the organization. However, the critics of ISO 9001 argues that this it is too bureaucratic in nature and suppress the creativity in the organizations. For example, Kaziliūnas (2010)

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stated that ISO 9001 is not a flexible quality as it more emphasize on issues related to production process rather than encouraging the innovation and learning activities in the organizations. Similarly, Gotzamani and Tsiotras (2002) stated that standards force organizations to drive away from quality theories and emphasize standardization over customer satisfaction, innovation and improvement. Further Guasch et al. (2007) supported that the ISO 9001 standard specified the characteristic of products and limits the innovation activities in organization Contrary to this view point, previous literature also supported the positive association between QMS (ISO 9001) and innovation (Hoyle, 2009; Pekovic, 2010; Vynaryk & Hanley, 2015; Pivka & Mulej, 2004). For example, Hoyle (2009) stated that the implementation of QMS (ISO 9001) does not create barrier to creativity and innovation activities in the organizations. In addition to this Pivka and Mulej (2004) found that the audits of quality standard help to bring improvements in innovations and inventions in the organization. In addition, previous literature negated the positive and direct correlation between QMS and financial performance (Sun, 2000; Kampouridis et al., 2015). However, rare studies claimed indirect influence of QMS (Kafetzopoulos et al., 2015; Islam et al., 2015; Han et al., 2007). On the other hand, many studies also supported the direct influence of QMS on financial performance (Sharma, 2005).

Our study positively contributes in existing literature in multi-facet ways. First, our study answers the call for additional research on the correlation between QMS(ISO 9001) standard and innovation (Manders et al., 2016; Neyestani & Juanzon, 2017) as the researchers highlight that there is not only a lack of studies on association between QMS and innovation and have also mixed findings. Like, Manders et al. (2016) discovered that many large organizations acquire ISO 9001 to improve product innovation. However, the literature fails to provide clarity whether this standard foster or hinders product innovation, owing to little scientific discussion. Similarly, Neyestani and Juanzon (2017) concluded that quality standard of ISO 9001 does not correlated significantly with the innovation and learning perspective in organizations. Second, there is lack of research which examined the influence of ISO 9001 implementation on innovation (e.g., Saleem et al., 2011; Fatima, 2014), therefore the underlying study examined the relationship of QMS on financial performance directly and indirectly via innovation. According to Bhatti et al. (2013), innovation management is clearly lacking in developing countries and in this context the current research would reveal critical insights of the relationship between proposed variables. Third, our research answers the call of Manders et al. (2016) to examine the impact of contextual factors like type and size of organization on the relationship between QMS and innovation.

In the light of the aforementioned literature, contradictory results were observed regarding the association among implementation of QMS, financial performance and innovation which needs further investigation. Accordingly, the purpose of this research was to examine the effect of QMS (ISO 9001 certification) on financial performance via innovation. In addition, the impact of contextual factors like the type and the size of organization was also examined on the relationship of proposed variables specially in the context of Pakistan. The results obtained from this study would facilitate the

practitioner to have understanding of, the significance of implementing QMS in innovation activities of organization in an emerging market and its effects on the organizational financial gain.

### **Literature Review and Development of Hypotheses**

International Organization for Standardization (ISO) develops the quality standard ISO 9001 as Quality Management System (QMS) in 1987. This standard has been subsequently revised four times.

#### *QMS and Financial Performance*

There is a stream of research studies that find the association between QMS and financial benefits but the results are still unclear and inconsistent. However a systematic review reveals that significant number of studies claimed the positive effect of QMS on financial performance (Aba et al., 2016; Sharma, 2005; Psomas & Kafetzopoulos, 2014; Zhelyazkov, 2016). For example, Sharma (2005) found improvements in profit margin, growth in sales and earnings per share of organizations after implementing QMS. In the same way, Aba et al. (2016) revealed significant improvement in operating performance measured by dividing EBITA of the firms by total assets in US, after certification. Psomas and Kafetzopoulos (2014) also disclosed positive association between them as they found that the financial and market position of ISO 9001 certified firms are significantly better than non-certified firms. Zhelyazkov (2016) analyzed the finding of the research conducted in last two decades and summarized that the implementation of ISO 9001 helps to enhance the sales and profit of organization in the market. Therefore, the following hypothesis is introduced to examine the association of QMS with financial performance in Pakistan's manufacturing sector.

*H1: QMS implementation positively associated with financial performance.*

#### *QMS and Innovation*

Contemporarily, the quality and innovation has gained significant importance and are considered as critical indicators to sustain competitive advantage. Willar et al. (2015) suggested that both quality and innovation are key driving forces to performance. Various researchers even proposed that Quality management is a prerequisite for innovation (Hoang et al., 2006; Naveh & Erez, 2004). The adoption of quality management contributes to economic-efficiency and innovation enhancement activities, which are important in achieving competitiveness levels (Schuurman, 1997). Moreover, it can help to develop culture and environment that foster innovation. Similarly, according to Naveh and Erez (2004) the implementation of ISO 9001 with other management practices like teamwork, will encourage innovation and adherence to standardization.

Prior literature reveals mixed results related to effects of quality management practices on numerous aspects of organizational performance. The same is true for the direct relationship between

QMS and innovation. Like Kuo et al. (2009) stated that the firms temptation to achieve quick certification without true commitment to quality results, increase the bureaucratic culture, that reduces flexibility and innovation. Al-Refaie et al. (2012) surveyed the association quality standard ISO 9001 and innovation in manufacturing companies of Jordan and found that ISO 9001 does not have positive effect on product innovation performance. Moreover, Pekovic (2010) also found insignificant relationship and recommend that quality management system need to integrate with other organizational practices to give positive improvement in innovation. Whereas some reported significant association also like Kafetzopoulos et al. (2015) conducted survey in food manufacturing sector of Greece and identified a positive influence of QMS on product innovation. Vynaryk and Hanley (2015) identified that implementation of ISO 9001 support innovation process in the form of advanced and technological solutions.

Recently, Manders et al. (2016) and Neyestani and Juanzon (2017) explored the correlation between QMS and organizational performance in depth and unearthed that there is lack of studies on innovation. To fill this research gap and to investigate the association of QMS implementation with innovation activities in developing country perspective, following hypothesis is proposed:

*H2: QMS implementation positively associated with Innovation.*

#### *Innovation and Financial Performance*

Today, innovation is considered as one of the important element that help the organizations to gain competitive advantage and economic benefits (Reguia, 2014). Through innovation the firms can respond effectively to the current demand and improve their performance. Earlier the organizations gave more emphasis on quality to enjoy financial benefits, however with the passage of time, the basis of market competition has been shifted from quality to innovation (Hung et al., 2010). Thus, to gain maximum financial benefits organizations needs to adopt both quality and innovation as competitive forces.

Reguia (2014) studied the impact of product innovation on performance and concluded that product innovation brings improvement in productivity, market share, profit margin, effectiveness and efficiency of the organizations. Whereas, process innovation helps to reduce and eliminate errors in process and waste and in turn improve financial performance (Camisón & Puig-Denia, 2016). Contrarily, innovation may not always lead to positive outcomes rather organizations might experience reduced financial performance on account of failed innovative effort (Markham & Griffin, 1998). Literature shows contradictory views regarding any influence of innovation in improving the financial performance. Therefore, it is important to further investigate the relationship between innovation and financial performance. Based on the above discussion, we hypothesize:

*H3: Innovation positively associated with financial performance.*

*Innovation as Mediator*

Up-to-date, various empirical studies have examined the direct effect of quality practices on the different perspectives of organizational performance and financial performance. For example Kafetzopoulos et al. (2015) examined manufacturing firms in Greek and found direct influence of QMS implementation on operational performance and indirect influence on business indicators through mediating role of operational performance. Similarly, the results of Islam et al. (2015) supported the results of study of Kafetzopoulos et al., and conclude significant influence of QMS on non-financial performance indicators and insignificant influence on financial performance in Saudi Arabia.

Literature introduced innovation as an operational excellence indicator to gain the competitive advantage. However the prior studies revealed, not only lack of research but also inconclusive findings regarding the QMS implementation in supporting the innovation process in the organizations (Manders et al., 2016; Neyestani & Juanzon, 2017). Therefore, to bridge this gap, it is important to examine the interrelationship between QMS, innovation and financial performance. We thus hypothesize:

*H4: Innovation mediates the relationship between QMS implementation and financial performance.*

*Influence of Contextual Factors*

The success of quality management system (QMS) implementation, depends on a several contextual factors like sector or organization, size of organization, country, ISO 9001 version, and motivation of the organization (Criado & Calvo-Mora, 2009; Manders et al., 2016; Neyestani & Juanzon, 2017). Literature evidence that the influence of these factors have been rarely examined in empirical studies and conclude inconclusive results, specifically the QMS (ISO 9001) – innovation relationship (Sadikoglu, 2004; Sila, 2007). Manders et al. (2016) calls for research to test the impact of size of firm, nature/type of firm, region, version of standard and organization's motivation on the association between QMS and innovation. Accordingly, to address these controversies, this research analyzed the influence of size and nature/type of organizations, on the proposed relationship in the context of Pakistan's manufacturing sector.

*Organization Size*

A number of studies have different views on how size of company effects implementation of QM and innovation outcomes. For instance, large size organizations have more potential to innovate because they have more resources to invest (Vincent et al., 2004) whereas, the small and medium size firms don't have enough funds to finance innovation projects, as it is stated by Gunnlaugsdóttir (2002) that the process of acquiring and implementing QMS (ISO 9001) in the organizations, is very costly. In the contradiction of this statement, Mangiarotti and Riillo (2014), discovered high effect of ISO

9001 on innovation in small firms. Whereas, Sila (2007), surprisingly found no effect of firm size on QMS success. Ahire et al. (1996) also found that the size of an organization does not appear to impact its ability to effectively implement TQM. It must be noted that firm size is frequently used as a control variable in studies on innovation. However, the mixed results required more research on this area. Thus, following hypothesis was proposed:

H5: The organizations certified to ISO 9001 have significant difference in financial performance on the basis of their firm size.

H6: The organizations certified to ISO 9001 have significant difference in innovation performance on the basis of their firm size.

#### *Organization type*

Industries differ in the nature of production processes. Therefore, the process of innovation may vary in different sectors depending on the access to knowledge, development of technological change rate and connections between organizations. In high technology sectors, the speed of change is rapid whereas it is slow in low and medium technology industries (Manders et al., 2016). The services and manufacturing industries are likely to experience uncommon benefits from QMS. Mangiarotti and Riillo (2014) confirmed that the implementation of QMS has increased technological innovation in manufacturing organizations whereas non-technological innovation has increased in service organizations. Similarly, Criado and Calvo-Mora (2009) outlined the differences in the performance between industrial and service organizations as a result of implementation of quality management practice. The literature suggests that the character of economic sector may influence innovation development (Forsman, 2011).

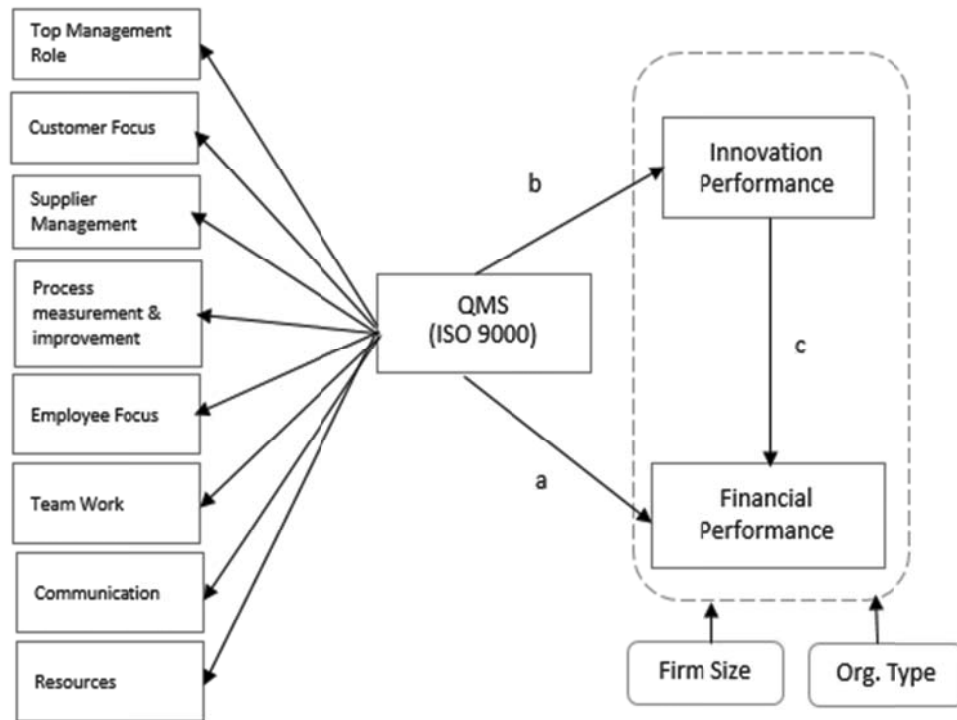
Jayaram, Ahire, and Dreyfus (2010) attempted to resolve this area and concluded a significant effect of type of industry and firm size in the relationship between QM implementation on final outcomes. Criado and Calvo-Mora (2009) interestingly discover that in industrial organizations the level of engagement from the management is different as compared to service organizations. Hence the quality practices are better in industrial sector than services. This ambiguity leads to propose following hypotheses.

H7: The organizations certified to ISO 9001 have significant difference in financial performance on the basis of organization type.

H8: The organizations certified to ISO 9001 have significant difference in innovation performance on the basis of organization type.

### **Theoretical Framework**

Based on offer mentioned hypothesis following theoretical framework has been proposed.



- H1 = QMS → Financial Performance 'a'  
 H2 = QMS → Innovation Performance 'b'  
 H3 = Innovation Performance → Financial Performance 'c'  
 H4 = QMS → Innovation Performance → Financial performance 'abc'

Figure 1: Theoretical Framework

## Research Methodology and Data Analysis

### Instrument Design

The self-administered questionnaire was used for collection of data from manufacturing companies. First part was based of personal information of a respondent and organization. Second part was based on the items to measure influence of QMS implementation on the performance variables. The determinants of QMS were based on ISO 9001:2008 and items were adopted from the studies of Arauz and Suzuki (2004) and Singh (2008). The 5 point likert scale from 1 (strongly

disagree) to 5 (strongly agree) was employed to examine the construct QMS (ISO 9001) implementation in the organization.

The items used to measure innovation were based on Product innovation and adopted from Mangiarotti and Riillo (2014). Like number of product increased, level of newness, speed of new product increased etc. The items of financial performance adopted from the study of Han et al. (2007). The 5-point likert scale ranging from 1 (No improvement) to 5 (improvement to a great extent) was used to assess the responses of both innovation and financial performance.

Further the two contextual factors 1) size of organization (measured on the basis of number of employees in the organization) and 2) type of organization (based on the potential industry-type effects).

### *Sampling*

For this study the manufacturing sector was selected as a population. As it is the second highest sector that contributes 13.5 percent to GDP of Pakistan. The data for this study was collected from 379 manufacturing companies which includes food, textile, chemicals, automobile, constructions, electronic, tobacco etc. All of them are listed in Pakistan Stock Exchange. Total 189 companies responded to the survey with response rate 49.86%.

The majority (70.8 %) of the companies were classified as textile, followed by automobile (9.7%), food (8.6 %), chemical and pharmaceuticals (6.5 %) sectors. Moreover, firm size, was measured in terms of number of employees in organization. The scale was divided in to four ranges, from which, majority of the employees falls in range having employees above 1000 (40.9%), followed with, between 200 to 500 (24.7%), between 501 to 1000 (20.5%) and then minimum contribution was from range less than 200 (13.9%).

### *Measurement Model of QMS*

The confirmatory factor analysis (CFA) was used for measurement model. For CFA of the construct the SEM was used to establish the validity. The initial measurement model of QMS (ISO 9001), had total 8 constructs comprised of 56 items. According to Bienstock et al. (1997), during CFA the items with factor loading value less than 0.5 can be eliminated and this process of deletion can be continuing, till the one fifth items retained. Thus, by following the process defined by Bienstock et al. (1999) the construct of QMS left with 6 constructs, 29 items and the factor loading values ranging from 0.720 to 0.870 (above 0.5 at  $p > 0.05$ ). The remaining CFA of the model showed the satisfactory fit model meeting desired values defined by Kline (2016) in table 2 (i.e  $\chi^2/df = 1.76$ , CFI = 0.93, GFI = 0.81, NFI = 0.85, and TLI = 0.92, RMSEA = 0.06).



**Reliability Analysis:** It measures the internal consistency of the items. Researchers indicate the value of Cronbach's Alpha is one of the most frequent method to test the reliability of the instrument and its recommended cut off point is 0.7 (Saunders et al., 2012). The values of Cronbach's alpha, of all constructs and sub constructs, presented in table 1 are greater than 0.70, thus all the constructs are highly reliable.

**Convergent Validity:** the composite reliability (CR) and Average Variance Extracted (AVE) were measured to determine the convergent validity. The recommended cut off points for CR and AVE are 0.7 and 0.5 respectively. Table 1 shows that the CR and AVE of all the variables meets the recommended values.

**Discriminant Validity:** It measures the degree that the concepts are distinct from each other (Bagozzi et al., 1991). Discriminant validity exist if alpha value of a construct is greater than the average correlation of the construct with other variables in model, (Ghiselli et al., 1981). Thus, the positive values in table 1 (column 7), provide the evidence of existence of discriminant validity.

Table 1  
*Results of Reliability and Validity Test*

Latent constructs	No of items	Cronbach's Alpha >0.7	Composite Reliability CR > 0.7	Average Variance Extracted AVE >0.5	Average correlation with other variables(x)	Discriminant validity (alpha - x)
Top Management Role	5	0.876	0.877	0.589	0.656	0.220
Customer Focus	3	0.829	0.835	0.627	0.626	0.203
Supplier Management	3	0.816	0.819	0.601	0.642	0.174
Process measurement & improvement	7	0.909	0.910	0.558	0.716	0.193
Communication	6	0.895	0.896	0.591	0.661	0.234
Resource Management	5	0.908	0.909	0.666	0.642	0.266
Total items of QMS	29	0.963	-	-	-	-
Innovation	4	0.892	0.892	0.68	0.549	0.343
Financial Performance	4	0.881	0.885	0.66	0.549	0.340

#### *Structure Path Analysis*

Hypotheses of the proposed structure model (Figure 2) were tested by using SEM. According to Kline (2016) the SEM is the more suitable method to examine the relationship among multiple dependent, independent and mediating variables. Table 2 shows that the summary of the goodness of fit indices of different paths. The goodness of fit indices of proposed model, QMS to FP from Innovation were ( $\chi^2/df = 1.711$ , CFI= 0.912, NFI = 0.814, GFI = 0.776, TLI = 0.905, RMSEA = 0.061) meeting the desired values defined by Kline (2016).

Table 2  
Summary of Goodness of fit

Model Test	$\chi^2$	df	$\chi^2/df$	CFI	NFI	GFI	TLI	RMSEA
CFA of QMS(ISO)	646.92	368	1.758	0.928	0.848	0.813	0.920	0.063
Direct path from QMS(ISO) to FP	836.563	485	1.725	0.920	0.830	0.792	0.913	0.062
Direct path from QMS(ISO) to Innovation	839.354	485	1.731	0.920	0.831	0.797	0.913	0.062
Indirect path from QMS to FP through Innovation	1055.38	617	1.711	0.912	0.814	0.776	0.905	0.061
Threshold values*			<3	>0.9	>0.9	Close to 1	>0.9	<0.08

\*(Kline, 2016)

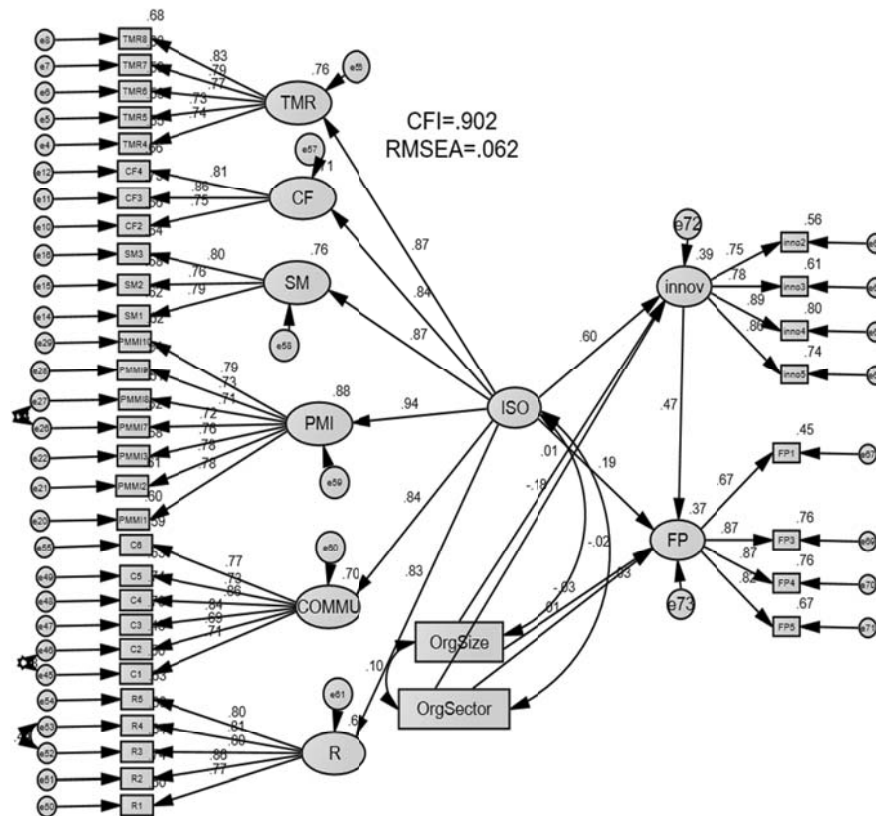


Figure 2 : Structural Model

### Hypotheses testing

Table 3 presents the direct and indirect effects of structural model, checked by using SEM.

**Direct effect:** The regression coefficient between first direct effect showed the significant relation between QMS and financial performance (FP) at unstandardized  $\beta$  (0.545) and standardized value of  $\beta$  (0.470). This result supported the H1 and indicated the positive influence of quality management system on financial performance. Moreover, the direct effect of ISO on innovation (Innov) was observed significant and positive at unstandardized  $\beta = 0.834$  and standardized  $\beta = 0.600$ . Lastly, the third direct effect of innovation on FP was also found significant and positive with unstandardized  $\beta = 0.407$  and standardized  $\beta = 0.470$  which supporting the hypothesis H2 and H3 as well.

**Indirect effect:** The bootstrapping technique at 5000 samples was employed to test the indirect effect among variables. Table 3 presents the indirect effect of path and results of this study showed that the innovation is significantly mediates between ISO 9001 and financial performance with *Indirect effect* = 0.279 (at 95% CI ranging from 0.137 to 0.486,  $p < 0.05$ ). Hence the results support the hypothesis H4. Moreover, it is observed that the direct influence of QMS on FP through mediator innovation, get reduced but remain significant and positive (unstandardized  $\beta = 0.233$ , standardized  $\beta = 0.193$ ) at  $p = 0.031$ , less than 0.05. Hence, innovation mediates partially between the relationship of QMS and FP. The results indicated that the implementation of QMS encourage the innovation activities in the organization and hence the organizations enjoy better financial outcomes.

Table 3

#### Direct Effects of Coefficients of the Hypothesized Model

Hypothesis	Path	Unstandardized Estimate	Standardized Estimate			S. E	Result	
H1	ISO →FP	0.545	0.470***			0.106	Sig & Accepted	
H2	ISO →Innov	0.834	0.600***			0.127	Sig & Accepted	
H3	Innov →FP	0.407	0.470***			0.079	Sig & Accepted	
Bootstrap Results for Indirect Path								
Hypothesis	Path	Unstandardized Estimate	Standardized Estimate	Effect	S. E	LL 95%CI	UL 95%CI	Result
H4	ISO →Innov →FP	0.233	0.193*	0.279	0.108	0.137	0.486	Sig & Accepted

\*\*\**p* < 0.001, \**p* < 0.05, ISO = QMS (ISO 9000 certification), Innov = Innovation, FP = Financial performance  
Bootstrap sample size = 2000, LL = lower limit, UL = upper limit, CI = confidence interval

### *Effects of contextual factors on QMS implementation results*

Table 4 shows the analysis of variance between the four different groups and results showed that size of organization has insignificant influence on innovation (ANOVA,  $t = 0.672$ ,  $p > 0.05$ ) and financial performance (ANOVA,  $t = 0.742$ ,  $p > 0.05$ ) of the organization. Thus, size of organization does not make difference on the product innovation activities and financial performance of organization.

Table 4

*Analysis of difference in mean (size of firm)*

Hypothesize	Below 200	Mean			Levene Test		ANOVA	
		200-500	501-1000	Above 1000	F	Sig	T	Sig
H5: OrgSize → Innov	3.9931	3.7769	3.8866	3.9011	3.116	0.027	0.672	0.570 (ns)
H6: OrgSize → FP	4.1575	3.9750	3.9089	4.0292	2.216	0.088	0.742	0.528 (ns)

*ns = not significant, \*\*\*  $p < 0.001$*   
*OrgSize = Size of Organization, Innov = Innovation, FP = Financial performance*

Similarly, Table 5 shows insignificant impact of the sectors, on the relationship between QMS implementation, innovation and financial performance. The results found no influence of nature/type of organization on innovation (ANOVA,  $t = 1.399$ ,  $p > 0.05$ ) and financial performance (ANOVA,  $t = 0.557$ ,  $p > 0.05$ ) of the organization.

Table 5

*Analysis of difference in mean (type of organization)*

Hypothesize	Textile	Mean				Levene Test		ANOVA	
		Auto	Food	C&P	Others	F	Sig	T	Sig
H7: OrgSector → Innov	3.960	3.627	3.831	3.746	3.733	1.208	0.309	1.399	0.236 (ns)
H8: OrgSector → FP	4.062	3.868	3.918	4.046	3.933	0.767	0.548	0.557	0.694 (ns)

*ns = not significant, \*\*\*  $p < 0.001$*   
*OrgSector = nature/type of Organization, Innov = Innovation, FP = Financial performance, Auto = Automobile, C&P = Chemical & Pharmaceuticals"*

### **Discussion and Conclusion**

The primary objective of this paper was to examine empirically how QMS affects financial

performance and innovative activities in the organization. Secondly, to test the mediating role of innovation in understanding the relationship between QMS implementation and financial performance. Moreover, the moderating role of two contextual factors size and type of organization were also examined on the proposed relationships. Previously significant studies have been conducted to explore the relationship that exists between QMS and performance however the literature does not seem to agree upon QMS implementation positively affects financial performance and innovation. Recent literature highlighted that less empirically evidence is available about the relationship between QMS and innovation. Hence, this study aimed;

- a) to examine whether QMS implementation facilitate the innovation process or not,
- b) the role of innovation as a mediator and
- c) the influence of two contextual factors i.e type and size of organization.

The results of this study has confirmed a significant and positive effect of QMS on financial performance. This result is also consistent with studies done in past that claim positive association between them (Sharma, 2005; Psomas & Kafetzopoulos 2014). Further this study also found that QMS (ISO 9001) positively influence the innovation and supported the findings of various previous studies (Vynaryk & Hanley, 2015; Mangiarotti & Riillo, 2014). It means that the implementation of QMS brings significant improvement in the innovation process of manufacturing organizations of Pakistan. Though the innovation process is not a contemporary phenomenon, however, its significance has increased manifold in an era of competitive advantage (Hung et al., 2010). In addition, results about the direct effect of innovation on financial performance was also significant and positive. The result of this relationship is also consistent with the findings of existing literature (Reguia, 2014; Camisón & Puig-Denia, 2016). Then, we found that innovation positively intervene between the relationship of QMS and financial performance of the manufacturing organizations in Pakistan. This suggest that the ISO 9001 certified organizations are more innovation oriented and hence enjoy better financial outcomes. These results strengthen the existing finding in the literature that implementation of QMS stimulates innovation and negate the myth that ISO 9001 standards certification hinders the creativity and innovation in the organizations.

Moreover, it is interesting to note that during the process of measurement model of quality management system, the constructs - teamwork and employee focus were deleted that support the findings of many previous studies (Asif et al., 2013; Shafiq et al., 2014) which provide evidence that QMS (ISO 9001:2008) does not encourage the involvement of the employee. Contrarily in the literature of TQM the employee focus and teamwork are main critical success factors to improve the quality and organizational performance. Therefore, the certified organizations in Pakistan should understand the importance of these constructs as, employees are key stakeholders and by giving them importance it will improve their moral and efficiency, which in turn improves the innovation performance in organization (Sung & Choi, 2014). Similarly, culture of team work in an organization ensures collective responsibility and in turn employees come up with new innovative ideas.

Finally, we found that the two contextual factors, size of the organization and type of organization, have no significant impact on the relationship between the QMS and its outcome. These results are in line with the findings obtained in previous studies that showed the firms size has no impact on implementation of QMS (Hashem & Tann, 2007; Vincent et al., 2004). According to Sadikoglu (2004), type of firms and size did not affect the success of quality management system. Similarly, Hashem and Tann (2007) indicated that company size is insignificant predictor for adopting ISO standards. These results also support the arguments that ISO 9001 standard can be practice efficiently in any size and sector of organization (Sila, 2007).

In nutshell, this study concludes that the QMS brings positive improvement in financial performance through innovation as mediator. Moreover, this study also found that the positive effect of QMS on financial performance and innovation is not influenced by the size and type of the organization. Thus, any type and size of manufacturing organization can achieve higher financial and innovation results after implementing QMS. Moreover, it is necessary to outline that in the latest version of ISO 9001 (ISO 9001:2015), the attempt is taken to make QMS less bureaucratic. For example, in the revised version there is no need of mandatory SOP's which was there in previous versions. This allow the companies to design the QMS documentation as per their own requirement in a flexible way to enhance the innovative activities in the organization.

This study contributes to existing literature of quality management and innovation. From theoretical perspective, the findings of this paper confirm that implementation of QMS system and standards help to enhance innovation activities and financial position of the organization. Moreover, it helps the academicians to understand the significance of innovation in the correlation between QMS implementation and financial performance. From practical perspective the results of this study would assist the practitioner to know the status of innovation activities in Pakistan's certified manufacturing sector, the role of QMS in fostering innovation activities in an emerging market and its effects on the financial performance of organization.

This study also carries certain limitations. For example, in this study, only product innovation was used to measure the innovation performance whereas, the literature identified different types of innovation like process innovation, technology innovation etc. Hence, in future, it is directed to use other types of innovation to have more clarity in understanding the effectiveness of QMS in enhancing innovation. Furthermore, the impact of institutional quality may also be observed as it can improve the innovation capabilities and financial performance in the organization.

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