Corporate Entrepreneurship and Financial Performance of PSX Listed Manufacturing Firms. Do the Alliance Formation Orientation and Total Quality Management Matter?

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Abstract

The prime objective of the current study is to examine the relationship between corporate entrepreneurship and FP of manufacturing firms listed in PSX. In addition to that, the mediating role of alliance formation orientation and total quality management in the relationship between corporate entrepreneurship and FP of manufacturing firms listed in PSX is also examined. Using random sampling, the final sample appeared as 347. To answer the research questions, we have used PLS-SEM statistical technique. The reason behind using this technique primarily that the aim of current study is to check the weather there is any mediating effect on relations. The second foremost reason of using this technique is that there is no issue if the data is normally distributed or not. Mostly reaches of social science indicates the normality issue in data. So, for such studies PLS is the more appropriate technique, because it can easily handle the abnormal data. The response rate of present study is 63.2% which is significantly high. The survey results have supported the hypothesized results. This study is among the pioneer studies on the issue and will be beneficial for researchers and policy makers.

Keywords: Corporate entrepreneurship, financial performance, Alliance formation, TQM, Pakistan

Corporate entrepreneurship (CE) is a vital management discipline which has been evolved into strategic orientation for dealing with external adaptation issues. During the course of three decades, such issues were encountered by firms, who seek to achieve sustainable competitive advantage in the global market (Kreiser, Kuratko, Covin, Ireland, & Hornsby, 2019). The term CE, which in literature also referred to the entrepreneurial orientation of an acclaimed organization, has emerged as one of the significant determinants of firm performance and particularly financial performance (FP). Since the 1980s, researchers and practitioners have shown a keen interest in this concept due to its significant effect on firm performance (Murimbika & Urban, 2014). However, earlier studies have not adequately addressed the relation between performance and CE.

Majority of studies conducted in this area have predominantly analyzed the impact of corporate entrepreneurial orientation on the profitability and growth of an organization (Murimbika & Urban, 2014). Although, a few studies have reported a strong corporate entrepreneurial impact on FP (FP), while other studies have failed to find any strong interaction. Furthermore, most of these researches were based on advanced and robust economies. The present study aims to assess the impact of the corporate on the FP of Pakistani firms. Therefore, firstly, the study will explain the CE concept in detail. Secondly, the historical background of this concept will be discussed, including five CE dimensions; followed by the examination of CE impact on the performance of firms, and lastly, the study will perform empirical research to analyze and measure the effects of CE on the Pakistani firms' FP.

The alliance formation has a significant impact on the firm financial as well as non-FP (Vaznyte & Andries 2019);. There are several studies conducted about AF and performance, which

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reported inconsistent finding. Among the studies that reported a positive association between the two constructs includes Vaznyte and Andries (2019); Weinzimmer, Michel, and Franczak (2013); Wilson, Perepelkin, Zhang, and Vachon (2014). Based on the above recommended the inclusion of a moderating variable such as CE between AFs to performance relationship. This is in line with Baron and Kenny (1986), assumption that where there are inconsistent or completing findings, then there is the possibility of mediation between the independent variable and dependent variable

Furthermore, similar studies were conducted to examine the link between total quality management and performance. Yusof and Aspinwall (2000); Fryer, Antony, and Douglas (2007); Awan, Bhatti, Bukhari, and Qureshi (2008) reported a significant and positive association between the constructs. The study of Mccabe, Knights, and Wilkinson (1997) found a negative association between TQM and organizational performance. Yunis, Jung, and Chen (2013)suggested replication of TQM strategy and performance relationship in different countries and context; this is also in line with the recommendation of Jaafreh and Al-abedallat (2013) which suggest a further examination of TQM to performance relationship in other sectors. The study of Sulistyowati, Sudarman, Wiryawan, and Toharmat (2013) also supported a further analysis of strategic orientation to performance relation using different samples. Sadikoglu and Olcay (2014) emphasized on TQM and other relevant analysis to performance relationship across different sectors, including education. Aliyu (2016) also supported a duplication of strategic orientation to performance relationship across different sectors. In another related research conducted, they concluded that entrepreneurial orientation directly affects firm performance, also found that the CE is in a significant relationship with the performance for Turkish firms. Antoncic (2006) reported a positive association between CE and performance.

According to Jennings and Hindle (2004) there is significant relation between performance and CE in entrepreneurial and non–entrepreneurial both organizations. In the same way Shukri Bakar and Mahmood (2014) in their studies also found a positive and significant relation among the constructs of the study. Shehu and Mahmood (2014b) in their studies by using other variables which can help in predicting the performance, they have recommended the further research. In addition to this in the study of Shehu and Mahmood (2014b) they have examined the impact of TQM and AF on firm performance. On the basis of prior studies this study has purposed that CE is a significant determinant of organizational performance, TQM and alliance formation orientation mediate the relation between organizational performance and CE. The current study is structured as follow. The next section highlights the notable literature on the area and explains the hypothesis development. The methodology is described in section three. The section fur is on results, and the conclusion is explained in section five

Literature review

Performance

A number of definitions were put forward by different scholars as to what performance is all about. Performance is considered to be the outcome of an organization's activity measured along with its input (Javed & Basheer, 2017). The understanding of performance measurement will allow an organization to focus on units that need enhancement by evaluating the areas with higher productivity (Shehu 2014; Tomlinson 2011). Assessing the performance of an organization to achieve a short- and long-term goals require a critical look at globalization and competition. The determining factors in measuring organizational performance may include; productivity, productivity, liquidity, market share, innovation level, productivity, goods and service quality, human resource management (Shehu and Mahmood, 2014; Jabeen et al., 2014). Minai and Lucky (2011) viewed that performance from two perspectives: that is the financial and the non- financial respectively. Prior researches have some preference in using FP measures as a measure of the overall organizational success.

Corporate entrepreneurship (CE)

CE is defined, by many researchers, as a commitment to creating an entrepreneurial environment in an organization to foster innovation, proactiveness and calculated risk-taking (Kuratko, 2015). The philosophy of CE is incorporated in the organization so that organization can be more responsive to environmental conditions, which change rapidly, by developing unique solutions (i.e product/services, processes, and organizational structures) and continuously exploiting opportunities with acceptance of the risk of failure. CE refers to entrepreneurial activities within an organization, such as organizational behaviors and behavioral intentions, leading from traditional to contemporary forms of performing business activities (Kuratko, 2015). Such processes

occur within firm without taking into consideration the firm size. In addition, such corporate entrepreneurial processes do not just refer to new business creation but also include the development of services, new products, managerial strategies, techniques, technologies, and innovative activities (Montoro-Sánchez & Soriano, 2011). CE capacity comprises of product or service innovation, new business creation, self-renewal, process innovation, competitive aggressiveness, proactiveness, and risk-taking. In past, several other terms such as interpreneurship, intrapreneuring, corporate venturing, intra CE, and firm-level entrepreneurial standing have been employed to describe CE phenomenon (Sambrook & Roberts, 2005). According to Wood et al., (2008) and CE refers to a new philosophy of management that develop flexibility, strategic agility and continuous creativity with the purpose of transforming administration-oriented workers into intrapreneurs. According to Wood et al., (2008) and Emre Demirci, (2013), being an important entrepreneurship dimension, the CE also referred to the process in which individuals or groups establish a new organization or innovate or initiate renewal with the interaction of existing organization.

Alliance formation Orientation (AF)

The Alliance formation is one of the strategic options which an organization in collaboration with the other firms use for the pooling up or deployment of resources ((Bratton & Gold, 2017). The prime objective behind the alliance formation most of the time is to increase the market place. (Mishra, Mohanty, Mohanty, & Dash, 2017). Alliance formation is one of the tools to gain a competitive advantage against the big players of industry or market. In the post-modern era of business which has come across many challenges such as the introduction of industrial revolution 4.0, the organizations are striving the sustainable performance. According to Munizu, (2013) an organization with the alliance formation orientation the ability to i) efficiently scan and discover partnering opportunities within the immediate surroundings; ii) carefully coordinate the alliance activities, and iii) comprehend and learn more efficiently from the alliance experiences, as compared to its competitors. Therefore, Lambe, Spekman, and Hunt (2002) stated that AF is considered to be an advanced competence or ability which is achieved from the continuous improvement of firms' lower-order capabilities.

AF comprises of three capabilities, namely, scanning, coordination, and learning. The higher the degree of each skill by the firm, the stronger will be the AF and better able to arrange and exploiting these capabilities. AF possess some basic features, i.e. 1) it is valuable, such that the utility for the AF remains the same even after its utilization (Mishra, Mohanty, Mohanty, & Dash, 2017); 2) competitors cannot imitate the processes of AF, since AF may involve incoherent routines which are difficult to be practiced; 3) it is immobile, as such processes are developed within the range of organization, therefore they seem to be unavailable in open market (Bratton & Gold, 2017) and; 4) since not many competitors possess these processes, therefore, AF is also quite (Casado, 2012).

According to Gravier (2008), the second capability of AF requires firms to scan and preserve their current positional advantage in case of the emergence of existing outdated capabilities and resources, arising from environmental uncertainty in markets. However, firms who possess better scanning ability for partnering opportunities may efficiently undertake its reposition in a competitive business environment. The selection of specific partner could significantly influence the fusion of skills, available resources, short-run and long run alliance' practicality, operating procedures, and policies (Lambe et al., 2002). Thus, scanning can be viewed as the organizational ability to take proactive measures during the identification and monitoring of partnering opportunities

Total Quality Management (TQM)

Ghadiri et al. (2013) argued that quality management has become one of the most critical success factors for any organization. Continuing his argument, he added that the total quality management is a philosophy which not only brings competitiveness but also helps the firm in being more market-oriented. Lam et al., (2016) argued that TQM helps the firm to develop an efficient production mechanism which allows the firm in gaining competitive advantages. Showing consistency with the findings of Ghadiri et al. (2016), the have argued TQM as a determinant of marketing orientation and innovation. Regardless of the wide range of literature available on total quality management, there is still a lack of consensus regarding the definition of TQM (Kumar, Choisne, Grosbois, & Kumar, 2009). The definitions of TQM can be viewed from different perspective in terms of employed methods (Munizu, 2013: Basheer et al., 2018). Several previous studies on TQM have provided a number of definitions by different scholars. TQM refers to the management philosophy, ensuring individual participation and cooperation in organization for

improving the production of goods and services to satisfy customer needs beyond their expectations (Ghadiri et al. 2016: Basheer et al., 2018: Basheer et al., 2019b), and towards achieving organizational goals and objectives. TQM is the holistic organizational method to improve overall quality in terms of major organizational principles, namely effective process management, leadership, product or service design, continuous improvement, customer satisfaction, employee training and involvement and customer involvement (Anderson, Rungtusanatham, & Schroeder, 1994). Furthermore, Ali et al. (2014) and Basheer et al. (2019a), Kristal, Huang, and Schroeder (2010), Prajogo and Sohal (2006) , and (Santos-Vijande and Álvarez-González, 2007), also defined total quality management as a management thinking which can bring change in organization through successful implementation of change initiatives to reach the international status. They also described TQM as a system which facilitate firms in achieving excellence.

Hypothesis Development

FP and CE

The CE literature in the context of developed countries is fairly well-developed. However, in the emerging and developing countries like Pakistan little or no attention has been given to explore the issue. Majority of the studies have revealed the multi-dimensional structure of CE, where competitive aggressiveness, risk-taking, proactiveness, and innovation are the frequently tested and determined CE dimensions (De Massis, Frattini, Kotlar, Petruzzelli, & Wright, 2016). Although, corporate performance has not been proved with such relationships. Numerous studies which attempted to examine the relationship between firm performance and CE suggested that CE leads to the growth in organizational performance (Morris, 2015). Moreover, majority studies on CE observed the direct impact of corporate entrepreneurial activities and orientation on the organizations' profitability and growth. These studies reported a positive impact of entrepreneurial activities and orientation on the profitability and growth of organizations. CE is considered to be a remarkable aspect of achieving growth and profitability. Thus, higher performance is expected to display by those firms who give more importance and integrate corporate entrepreneurial activities. The resource-based perspective provides the basis for the relationship between firm performance and CE, as the RBV highlights the significance of specific capabilities and resources of firms to achieve sustained competitive advantage (Danişman & Erkocaoğlan, 2007). Resultantly, the organizations analyze and use risk-taking, innovation, competitive aggressiveness, autonomous behaviors, and proactiveness as tools for achieving competitive advantage and which also seem difficult to imitate by the competitors. A number of empirical studies were conducted in developed economies to investigate the CE and organizational performance relationship (Kazanjian, Drazin, & Glynn, 2017). These studies found a strong relationship between firm performance and CE. Nonetheless; limited studies were conducted in developing and less-developed economies. Such as, Antoncic and Hisrich (2001) examined the impact of CE on the profitability and growth performance of firms in American and Slovenia and have also reported different outcomes.

A limited number of available researches on the association between CE and FP of firms in Pakistan have shown varied interaction of concepts, concerning above mentioned five dimensions. The research outcomes of a study Danişman and Erkocaoğlan (2007) have shown that positive association exists between innovation and profitability of a publicly-traded company, whereas they found no significant association between innovation and growth. Also, Aktan and Bulut (2008) reported that firm performance has found to be insignificantly affected by competitive aggressiveness, risk-taking, proactiveness, and innovation. In another study, Kaya (2009), with the human resource as a mediator, the positive, and a moderate association was found between organizational performance and CE. In a study having 347 firms, a strong association was reported among CE and FP of the firm. In the above-mentioned studies, dimensions of CE were observed, indicating that one or all of these CE dimensions influence the organizational performance. Thus, the present study assumes that organizational performance will be affected by the combination of entrepreneurship dimensions. To prove this, empirical testing by the statistical models and analysis will be done to reveal the outcomes and following testable proposition is proposed.

H₁: The CE has a significant positive impact on the FP.

FP and AF, and CE

The empirical studies have provided mix results on the AF and performance relationship. Several types of research were performed to assess the relation between AF and organizational performance. Sarkar, Echambadi, and Harrison (2001) used a contingency approach as supporting theory to analyze the effects caused by alliance proactiveness on the organizations' market-based performance. The study employed 182 sample firms and performed data analysis using PLS. The study concluded that an organization could achieve superior market-based performance through

alliance proactiveness. Another study attempted to examine 55 business firms operating in Mexico. They reported that the positive effect of authority balance was found on the alliance performance, whereas, the strong negative effect of authority advantage was reported on alliance performance. Furthermore, a study by Leisen, Lilly, and Winsor (2002) tried to investigate the association among market orientation, market effectiveness, and organizational culture, in strategic alliance context. The study obtained data through 128 self-administered questionnaires. The overall findings revealed the impact of corporate culture on the strategic marketing alliance. This finding was based on the contingency theory. Since most profit-oriented organizations and businesses focus marketing alliance, thus, the resource-based view is used as the supporting theoretical foundation for the present study. The study incorporated a non-profit oriented venture, i.e., public universities in Pakistan, which primarily emphasizes the service provider to achieve academic excellence. Similarly, in an empirical study, Kandemir, Yaprak, and Cavusgil (2006) employed 182 small US firms and performed statistical analysis using structural equation modeling. The results of their study revealed that AF and performance are significantly associated with each other. Scholar reported that high risk reduction, higher absorption orientation, economies of scale orientation, and higher levels of research and development enable firms to achieve competitive advantage. In addition, strategic match with capability factors, choice of technology alliance, and strategic factors may result in a competitive gain. Furthermore, Luo, Rindfleisch, and Tse (2007) found an inverted U-shaped relation among the intensity of a firm's alliance and equity. Basing on the literature reviewed the study has proposed the following hypothesizes

H2: The AF has a significant positive impact on the FP

H3: The CE has significant positive impact on the AF

H4: Alliance formation mediates the relationship between CE and FP

TQM, FP, and CE (CE)

There is a significant and positive effect of TQM on firm performance. Though in general the firm performance comprises with some specific components like FP, production performance and market performance. However according to many studies (Hendricks & Singhal, 2000; Mele & Colurcio, 2006), there is a positive relation between FP and TQM, but this relation still is stil ambiguous.

As we have discussed earlier that TQM is basically an inclusive approach which can affect and get effected by all organizational segments. There is a significant effect of TQM on FP. The aim of current study is to find how the FP is affected by TQM, TQM specially the soft TQM which is also known as managerial philosophy, concentrate on the value addition in all steps of product development, and be certain of providing the good quality products at minimum prices. In comprehensive way TQM can be known as multi-dimensional construct, because in last few decades for the sustainable competitive advantages, it has been changed into a strategic tool (Perdomo-Ortiz, Gonzalez-Benito, & Galende 2006). We frequently measure FP, by using the key indicators of firm performance like profit ratios, return of equity and return on asset etc., which is very important for organizational success. According to different studies (O'Neil et al, 2016; Ali et al., 2014; Kampouridis et al., 2015; Roca-Puig et al., 2017; Chaudary et al., 2015) for the firm performance TQM is very important determinant. In the literature there are strong and consistent evidences that firm performance and TQM have significant relation.

Several previous researches integrated CE with organizational performance and reported the findings as follows: Researcher incorporated Total quality management practices, CE and environmental turbulence and found TQM practices to be a primary mean for the majority of organizations to achieve CE during environmental turbulence. Another study tried to examine the moderating role of the marketing mix factors in the relationship between BP and CE (Herath & Mahmood, 2013). The result of their study has shown a strong association among BP and corporate entrepreneurial behavior of the firm. Contrarily, product quality, pricing, and marketing mix promotion factors were found to have a moderating role in the BP and CE relationship. Antoncic and Hisrich (2003) reported a positive association between CE and privatization and it also plays the role of mediator in CE practices. These findings were consistent with the entrepreneurial orientation's literature. In addition, Jennings and Hindle (2004) analyzed the association between CE and quality through the assessment of performance, strategy and structure. The study surveyed 148 firms in the US for the time period 1998-2002. The study concluded that the better the structural match in non-entrepreneurial and entrepreneurial organizations the higher will be the organizational performance. In a cross-sectional study surveyed the mail and found that CE has a significant impact on total quality management as well as performance. Thus, the study has proposed the following hypotheses.

Prior studies (Basheer et al., 2018; Basheer et al., 2019; Hafeez et al., 2018) argued that the TQM by reducing waste and bringing efficiency place a significant and positive impact on FP. Here, TQM practices like customer focus and process management create a fertile environment between organizational members and ultimately has an impact on firm's FP. Therefore, the current study is hypothesizing the positive and significant relationship between TQM and firm's FP. The agency theory which advocates the interest alignment between shareholders and management advocates a positive relationship between TQM and FP. Agency theory argues that quality initiative shows management serious and responsive attitude towards wealth maximization principle. To prove this, empirical testing by the statistical models and analysis will be done to reveal the outcomes and following testable proposition is proposed.

H_5: *The TQM has significant positive impact on the FP*

H_6: *The CE has significant positive impact on the TQM.*

H_7: *TQM mediates the relationship between CE and FP.*

Methodology

This research used survey research design (Mahmood et al., 2016). For the present study we have used Partial Least Square (PLS) for testing number of hypothesis and checking the construct effects (Basheer et al., 2019). World had developed PLS 1985, According to him we use PLS for the estimation of such path models which have latent constructs and can be measured by the various indicators indirectly. Additionally, the PLS is more appropriate approach for the models which have several exogenous latent variables that explains an insignificant amount of endogenous latent variables (Hair et al, 2014). So, we can say that by using PLS-SEM approach we can evaluate the associations through regression between latent variables and their indicators.

As compare to the other co variance-based techniques there is no restriction in PLS in relation of interaction (Chin et al, 2003). There are number of reasons choosing PLS technique for testing hypothesis. In the current study. PLS is known as statistical technique which been used by number of researchers in the studies related to marketing (Reinartz, Krafft & Hoyer, 2004) and management (Hull & White, 1990; Nasiru et al., 2015). Before estimating the sample size, we have estimated the total population. We have calculated the sample size by using the table of Krejcie and Morgan (1970). On the basis of table, we have selected sample size to be 310., and the response rate of the survey was 63.2%.

Data Analysis

The earlier discussion shows the importance of measurement and structural models (SM) in PLS-SEM. According to (Hair et al., 2014) there are number of reasons using PLS such as it can easily handle the small set of samples, less costly and it does not have the strict assumptions for the regarding the normal distribution of data and the most importantly it can also analyze the data measured by using reflective or formative items.

Additionally, PLS-SEM can effectively handle those constructs which have single items only, without having problems of identification, and it can evaluate the parameters efficiently as well. Which ultimately results as high-statistical power conclusions in comparison with CB-SEM due to which PLS-SEM has become the most advantageous in different research circumstances (Hair et al., 2014). So, in the present study for analyzing the statistical outcomes we have used a progressive two stage method (Peetr, 1990).

By examining the CV, DV and composite reliability we have estimated the outer model initially in PLS-SEM (Hair et al., 2014). The assessment of reliability and validity was involved in that section. The measurement model is shown in the figure 1 below.
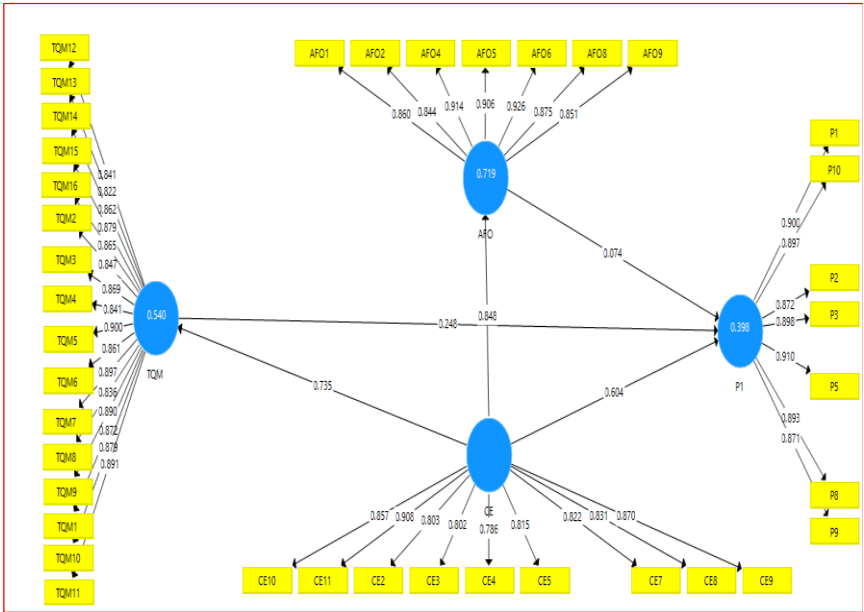
Figure 1. Measurement Model Assessment

Hair et al. (2014), has recommended that if the loadings values of outer model are equal or higher than 0.7 are known as acceptable or sufficient. Whereas if the loading values of outer model are less than 0.7 they must be removed for improving the data quality. We have presented the loading values in Table 1(Peter, 1979. Which shows that all loading values of indicators lies between the range of 0.749 to 0.950. which basically make sure the enough construct validity in MM

Table 1. *Outer Loadings*

	AFO	CE	P1	TQM
AFO1	0.860			
AFO2	0.844			
AFO4	0.914			
AFO5	0.906			
AFO6	0.926			
AFO8	0.875			
AFO9	0.851			
CE10		0.857		
CE11		0.908		
CE2		0.803		
CE3		0.802		
CE4		0.786		
CE5		0.815		
CE7		0.822		
CE8		0.831		
CE9		0.870		

P1	0.900	
P10	0.897	
P2	0.872	
P3	0.898	
P5	0.910	
P8	0.893	
P9	0.871	
TQM10		0.879
TQM11		0.891
TQM12		0.841
TQM13		0.822
TQM14		0.862
TQM15		0.879
TQM16		0.865
TQM2		0.847
TQM3		0.869
TQM4		0.841
TQM5		0.900
TQM6		0.861
TQM7		0.897
TQM8		0.836
TQM9		0.890
TQM1		0.872

For the measurement of internal consistency and reliability, we use the Cronbach alpha in social sciences. Whereas in case of PLS-SEM we have used a conservative measure (Hair et al., 2014). According to Bagozzi and Yi (1988) for the internal consistency the key measure is composite reliability. Consequently, for the assessment of internal consistent reliability we have computed the values of composite reliability. By following the suggestions of Hair et al's (2011), reliability (DeVellis, 2003), and Nunnally and Bernstein (1994)the values of CR should be greater than .70. In addition to this we have also observe the reliability of indicators by using the factor loadings of outer model who's value according to Hair et al., (2014) should be greater than .50. After the establishment of constructs reliability and validity we have assessed the SM. .

Table 2. Construct Reliability and Validity

	Cronbach's Alpha	rho_A	CR	(AVE)
AFO	0.953	0.955	0.961	0.779
CE	0.945	0.947	0.953	0.695
P1	0.957	0.958	0.964	0.795
TQM	0.978	0.978	0.980	0.750

Hair et al. (2014) has defined convergent validity as a level at which there is positive correlation among all the measures of construct, for example in such situation when construct indicators shows great proportion of variance. For the determining the convergent validity of models we have also considered the average variance extracted (AVE) and outer loadings of indicators. The values of AVE represent the square loadings and mean of indicators. According to (Hair et al., 2014) the AVE must be equal or greater than 0.50. the minimum acceptable value of AVE shows that construct explained more than half of indicators change.

The degree at which a specific construct of model is almost dissimilar from another model's construct is known as Discriminant validity (DV). According to the study of Hair et al. (2014) we can achieve the acceptable discriminant validity only when construct is fully incomparable from all other constructs (Henseler et al., 2009).. With the accomplishment of two measures in PLS-SEM we can measure the discriminant validity. Though for the DV Fornell and Larcker (1981) criterion is comparatively extra conservative ratio. Consequently, we have also compared the square root values of AVE with correlated latent variables. For every construct the square root of AVE should be greater than the latent variables and highly associated with additional constructs

Table 3. Discriminant validity (AVE square root)

	AFO	CE	P1	TQM
AFO	0.883			
CE	0.848	0.833		
P1	0.560	0.604	0.892	
TQM	0.733	0.735	0.566	0.866

The Heterotrait-Monotrait Ratio also confirms the validity of instrument

Table 4. Heterotrait-Monotrait Ratio

	AFO	CE	P1	TQM
AFO	1			
CE	0.878	1		
P1	0.581	0.632	1	
TQM	0.758	0.757	0.582	1

For the assessment of structural model, the determination of collinearity issue is very important. Which explains the high association between its indicators (Hair et al., 2014). According to the results the values of slandered collinearity have tolerance which is greater than 0.2 and VIF values are less than 5. So, it shows that no multicollinearity is there(Muneer et al., 2019; Hmaeed et al., 2018)..

Similarly, in the next step we have determined the relation between variables and structural models. For testing the hypothesized relations of constructs, we have examined the path coefficients of structural model (Hair et al., 2014). In PLS-SEM, we assess the relations between path coefficients, t values and constructs. In PLS-SEM the use of path coefficients is equal to the use of standardized beta coefficient in regression (Zahra et al., 2019: Basheer et al., 2019: Hameed et al., 2019). The structural model is shown in the figure 2 below
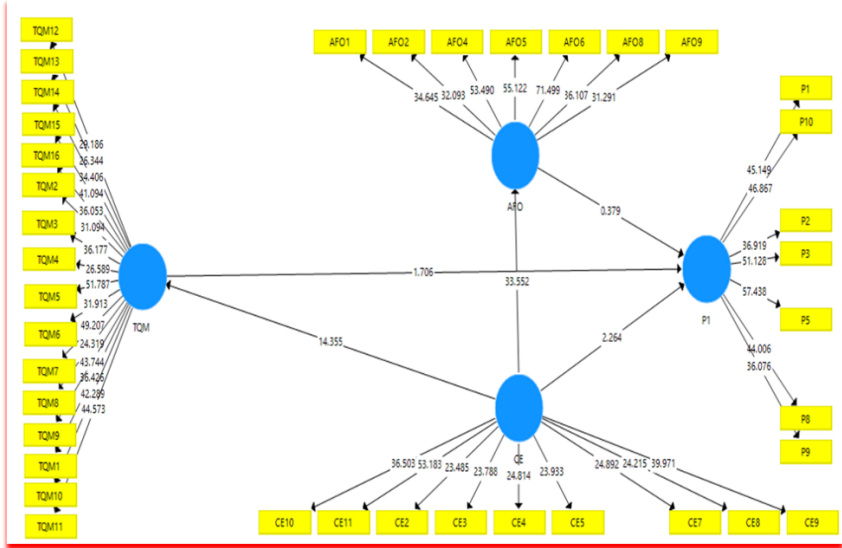
Figure 2. Structural Model Assessment

By using the smart PLS 2.0, for analyzing the significance of path coefficients, we have also performed the boot strapping procedure. In this procedure without any change we have taken 310 cases and set the 5000 subsamples (Hameed et al., 2018)). On the basis of path-weighting scheme we have estimated the parameters (Basheer et al., 2019) Additionally, according to (Hair et al., 2014) the procedure of bootstrapping shows the slandered errors which assist insignificance of path coefficients and hypothesis testing.

Table 5. Direct Effect Results

	O	M	STDEV	t-value	P-Values
AFO -> P1	0.074	0.073	0.195	0.379	0.352
CE -> AFO	0.848	0.849	0.025	33.552	0.000
CE -> P1	0.604	0.607	0.061	9.956	0.000
CE -> TQM	0.735	0.736	0.051	14.355	0.000
TQM -> P1	0.248	0.247	0.146	1.706	0.044

The results of mediation are explained in table 5. The alliance formation (AF) and the total quality management (TQM) appear in a significant mediating role in the relationship between CE (CE) and FP (EP).

Table 6. In-Direct Effect Results

	O	M	STDEV	STDEV	P-Values
CE -> AFO -> P1	0.063	0.061	0.169	3.371	0.015
CE -> TQM -> P1	0.182	0.185	0.109	3.667	0.048

The inner model evaluation helps to explain the predictability of model. Therefore, in this way the coefficient of determination (R2) and path coefficient significance are the key criteria's of evaluation in PLS-SEM (Hair et al., 2014). As per the suggestion of Henseler et al., (2009) in next step we have examined the value of R square for coefficient of determination. According to Chin (1998) the minimum range for value of R square is 0.33 whereas if it is 0.19 then its moderate and if its 0.67 then the value is good.

Table 7. R-Square

	R Square
AFO	0.719
P1	0.398

TQM	0.540

The predictive capacity of the model is examined. According to Hair et al. (2014), we have measured the predictive relevance value through Q2, and the value of Q2 must be higher than 0. Which shows the predictive relevance of path model. The blindfolding procedure is mapped in figure 3 below.
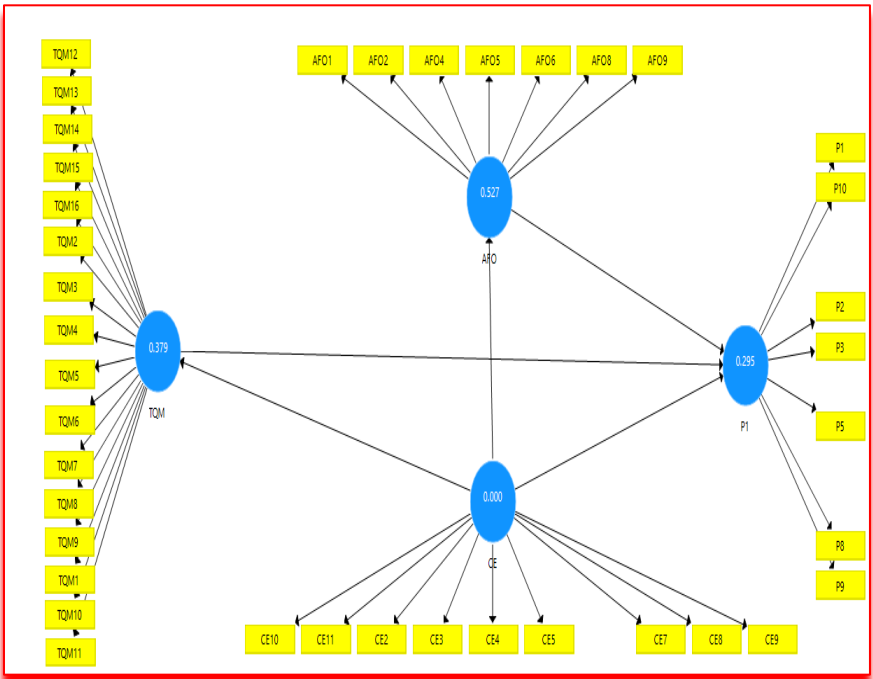

Figure 2: Blindfolding

Moreover, when the value is lower than zero, it shows that there is no issue predictive relevance.

Table 8. Predictive Relevance (Q²)

	SSO	SSE	Q²(=1-SSE/SSO)
AFO	1,519.000	718.949	0.527
P1	1,519.000	1,070.787	0.295
TQM	3,472.000	2,157.267	0.379

Conclusion

The primary purpose of the current study is to examine the relationship between CE and FP of manufacturing firms listed in PSX. In addition to that, the mediating role of AF and total quality management in the relationship between CE and FP of manufacturing firms listed in PSX is also examined. Using random sampling, the final sample appeared as 347. The study has used the SEM-PLS as the statistical technique to answer the research questions. We can make the following deductions on the basis of results that the focus of resource-based view (RBV) is on the internal competences of organizational resources, the achievement of competitive advantages is important for such organizations to remain relevant in abrupt environment.

For the best realization of reliance objectives, the identification of partners and their alliance is the main concern here. Therefore, a sound alliance orientation strategy is vital to any organization. Meanwhile, according to the resource-based view theory the alliance formation is

orientation is valuable, imitable, and non-substitutable resource of any organization Total quality management represents a holistic approach involving all stakeholders of continuous improvement through the involvement of top-level management and employees to achieve customer satisfaction, which will enhance the quality delivery. Resource-based - the view will help in developing the internal competence of all the stakeholders toward quality achievement. CE concerns the plan of top management about innovation, proactiveness as well as risk-taking. It is being considered as an essential attribute of high performing firms. CE is to do with the internal ability of universities to achieve goal and to remain relevant, hence, RVB can be used as the underpinning theory due to the fact that CE is something that is rare, of value to the firm, imitable and non- substitutable..

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