

The Mediating Effect of Innovation on the Relationship between Strategic Orientation and Performance of Large Manufacturing Firms in Pakistan.

Waris Ali Khan^{a*}, Muhammad Zulqarnain Arshad^b, Athifah Najwani Shahidan^c, Muhammad Hassan Arshad^d, Ismail Khan^e

^a*Faculty of Business, Economics and Accountancy, Universiti Malaysia Sabah, Malaysia*

^b*Department of Management Sciences, Lahore Garrison University, Pakistan.*

^c*Faculty of Business Management, Universiti Teknologi MARA, Malaysia*

^d*School of Business, Universiti Utara Malaysia, Malaysia*

^e*Department of Management, Sunway Universiti Business School, Malaysia*

Abstract

The main objective of this study is to examine how Strategic orientation and innovation influence the performance of manufacturing firm working in Pakistan. This study examine the direct impact of strategic orientation (SO) and innovation (INO) on firm performance (FP), meanwhile also examine the indirect effect of innovation among strategic orientation and firm performance. Self-administered survey was used to collect the data from 320 large firms. Simple random sampling technique was used for collection of data. For statistical analysis, PLS-SEM technique was utilized by using Smart-PLS 3.2.8. The results indicate that SO is positively related to FP, and its positive relationship is mediated by innovation. These findings provide useful insights for firms, particularly for the manufacturing industry, seeking to be competitive and responsive to environmental changes by successfully introducing innovations. Conclusions emphasize that mechanisms to encourage and foster an innovative culture in the organization are likely to facilitate the introduction, adoption, and diffusion of innovations which, in turn, is likely to result in the achievement of superior FP. This paper makes a significant contribution to the prevailing literature by empirically examining the relationship between SO, innovation, and FP.

Keywords: *Strategic Orientation, Innovation, Firm performance, large manufacturing firms of Pakistan.*

INTRODUCTION

Introduction A substantial body of research has investigated the relationship between a company's strategic orientation and its innovativeness (Ansoff, 1965; Freeman, 1974; Hambrick, 1983; Miles & Snow, 1978) and the association between a firm's innovation and its performance (Baker & Sinkula, 2009; Subramaniam & Youndt, 2005). The findings from this body of research have provided unequivocal evidence that a company's strategic orientation plays a major role in its innovativeness and that innovation is a key driver of competitiveness and company performance.

Strategic orientation refers to a pattern of responses that an organization makes to its operating environment in order to enhance performance and gain competitive advantage (Hambrick, 1983). The multiplicity of options available for adapting to the environment has led to the development of a number of classification schemes that describe strategic archetypes (Ansoff and Stewart, 1967; Freeman, 1974; Hambrick, 1983; Miles and Snow, 1978; Porter, 1985; Arshad, Ahmad, Ali, & Khan, 2020). Included among these classification schemes are those that classify organizational strategies based on their innovation orientation. Ansoff and Stewart's (1967) typology is based on firms' timing of entry into an emerging industry, while Freeman's (1974) classification relates to companies' innovation efforts based on R&D expenditure, and Miles and Snow's (1978) classification is based on the rate at which they change their products and markets.

The Miles and Snow (1978) typology focuses on the "dynamic process of adjusting to environmental change and uncertainty" (p. 3) and considers the tradeoff between external and internal factors (Mckee et al., 1989). Since the present study examines the differences between the innovation

patterns of SMEs (Arshad & Arshad, 2019) and large companies based on data related to sales of newly introduced products, using the Miles and Snow (1978) classification typology appears to be the most suitable framework. In the Miles and Snow (1978) typology, “prospectors” are organizations that focus on product and market innovation; they maximize new opportunities and pioneer innovations to meet market needs. “Defenders”, by contrast, have a narrow product-market domain, conduct little new product development, avoid unnecessary risk, and focus on the efficiency of existing operations. “Analyzers” are a hybrid of the prospector and defender types; they use efficiency in stable product market segments and innovate in dynamic product markets. Finally, “reactors” are not a stable strategy type since they are not able to respond effectively to the environment and adapt only when environmental pressures force them to do so.

The first half of the paper examines the body of literature and findings on the constructs of innovation and SO. The next section sets up the relationships and hypotheses for examining the relationship between SO, FP, and the role of innovation. The second half of the paper empirically examines the proposed hypotheses with the data from 320 large manufacturing firms in Pakistan. Moreover, this study is underpinned by resource based view theory.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Strategic Orientation and Firm Performance

The number of research stated a positive association of SO to higher performance (Hung, 2007; Pleshko & Nickerson, 2008; Stanley F. Slater et al., 2006; Storey & Hughes, 2013; Tuma, 2013). It is argued that organizations that exhibit more proactive strategic behaviors are likely to be profitable and productive than those that are less proactive in their strategic behaviors (Aragon-Sanchez & Sanchez-Marín, 2005). For example, Miles and Snow (1978) proposed that organizations that adopt prospector, analyzer, and defender strategies are expected to perform better than those that adopt reactor strategy (Aragon-Sanchez & Sanchez-Marín, 2005). Some studies confirmed the proposition. Their findings confirmed that organizations that adopt prospector, analyzer, and defender strategies perform better than those that adopt reactor strategy (Aragon-Sanchez & Sanchez-Marín, 2005; Conant et al., 1990; Smith et al., 1986; Wright et al., 1991).

On the contrary, Snow and Hrebiniak, (1980) found that organizations that adopt reactor strategy perform better than organizations that adopt prospector and defender strategies, especially in air transportation sector. Also, some studies established that prospector firms perform better than either analyzer or defender firms (Segev, 1987; Veliyath & Shortell, 1993), while other studies affirmed that defender firms outperform than prospector firms (Hambrick, 1983). However, some other studies established that analyzer firms perform better than prospector, defender, and reactor firms (Pleshko & Nickerson, 2008). Empirical research recommends reactors are outperformed by the other types nevertheless there is no consensus on the best SO (Conant et al., 1990; Desarbo et al., 2005). Reactors tend to react to environmental pressures with slight variations and do so only when compulsory to (Song et al., 2007).

From the above discussion, it can be inferred that the connection between SO and the firm’s performance is inconsistent and requires to be further investigated. Thus, the following testable hypothesis is developed to investigate in the context of large manufacturing firm in Pakistan:

H1: There is a positive relationship between strategic orientation and performance of large manufacturing firms in Pakistan.

Strategic Orientation and Innovation

The SO encourage enhancement of the possibility of designing and risk-taking and developing entirely novel and innovative goods (Olson et al., 2005). Innovation gives important assistance to firms like enhancing or maintaining market share and outperforming competitors (Siguaw, and Cathy, 2006; Lisboa,

Skarmeas, and Lages, 2011;). The exploitation of the chances turns into even more significant in problematic marketplace. Specifically, instability in consumer's expectations and preferences bounds meaningfully a firm's capability to gratify them by carrying out slight alterations to prevailing products or by presenting incremental innovations (Zhou, *et al.*, 2005).

As stated by Miles and Snow, (1978) that innovation is one of the key drivers of the prospector orientation firms. Prospectors firms prosper and welcome in dynamic environments, innovative, as well as take full advantage of new opportunities (Hambrick, 1983). Prospectors are expected to be the first to the market and seek out to maximize this opportunity. They have an acceptance of risk and change, empowerment as well as flexibility. While, analyzers emphasis on improved production and efficiency when the marketplace is constant and on innovation once the market is uncertain or dynamic (Slater and Narver, 1993).

Another study by O'Regan and Ghobadian, (2005) specifies that prospector firms are more to be expected to involve in product innovation as compared to defender sort of firms. This is not unanticipated. Defender nature firms are five times more expected to alter present goods than present patented products.

Innovation orientation is a strategic behavior that mirrors openness to new ideas also the vigorous seeking of such concepts (Olson et al., 2005). SO encourage risk-taking and increase the likelihood of developing and designing entirely novel and innovative goods (Olson et al., 2005). Innovation gives important assistance to firms like enhancing or maintaining market share and outperforming competitors (Lisboa et al., 2011; Siguaw et al., 2006). The exploitation of the chances turns into even more significant in problematic marketplace. Specifically, instability in consumer's expectations and preferences bounds meaningfully a firm's capability to gratify them by carrying out slight alterations to prevailing products or by presenting incremental innovations (Zhou, *et al.*, 2005).

Findings of another research have also confirmed an association between an organization's SO, innovation capability and performance (Woodside et al., 1999). Another study by O'Regan and Ghobadian, (2005) specifies that prospector firms are more expected to involve in product innovation as compared to defender firms which ultimately leads towards better performance.

Similarly, organizational learning and innovation used as mediating roles in the association between SO and performance and result confirmed that only innovation has an effect (Noble et al., 2002). Hence, a testable hypothesis can be formulated to investigate in the context of large manufacturing firm in Pakistan:

H2: Strategic orientation is significantly related to innovation.

H3: Innovation mediates the relationship between strategic orientation and performance of large manufacturing firms in Pakistan.

Research Framework

By reviewing the literature, the impact of SO has been identified on innovation leading to superb FP. The following figure shows the relationship between variables and highlights the mediating effect of innovation.

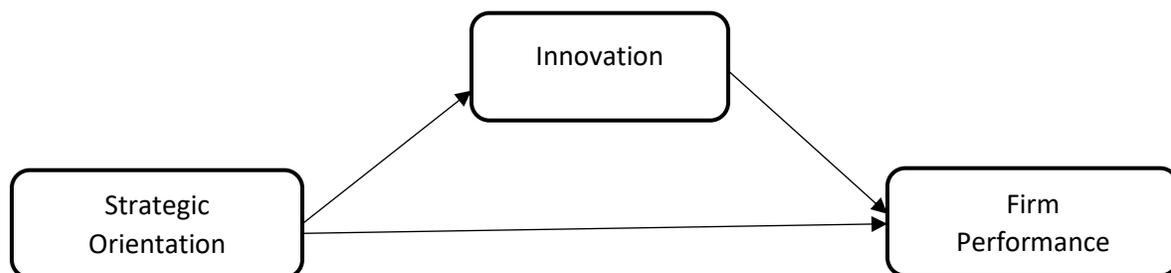


Figure 1. Conceptual Framework

METHODOLOGY

Sample and Data Collection Instrument

According to Zikmund (1994) survey method seeks to elaborate a phenomenon and looks for the causes of any specific activity. As discussed by Neuman (1997) survey method is quite useful as it facilitates the researcher to gather data from a large number of respondents in order to measure multiple variables and testify many hypotheses. Therefore, the current study has employed the survey method as survey method is very popular and is quite frequently employed for conducting quantitative research in the field of business and management (Hair, Bush, and Ortinau, 2003; Cooper and Schindler, 2006). The advantages of survey method include access to a large number of respondents, less costly to administer, and is free from interviewer bias (Sekaran and Bougie, 2010; Bryman and Bell, 2003). Thus, it was quite appropriate to employ survey method for conducting this study.

As far as the sample is concerned, when the sample units in the target population under study are limited, the researcher may select the whole population rather than taking a sample for the study (Zikmund, 2003). There are different views of researchers to determine sample size. Sample size which is less than 500 and larger than 30 are usually considered appropriate to conduct the research study (Roscoe, 1975). The population of this study is large manufacturing firms in Pakistan and the list was obtained from the Pakistan stock exchange website. Hence, survey questionnaires were distributed to 399 large manufacturing firms listed in Pakistan stock exchange and 341 of them were returned. 21 of the returned surveys were eliminated due to insufficient data and the remaining 320 surveys were analyzed for research findings.

Measurements

Independent variable: Strategic orientation (prospector, defender, analyzer and reactor) has been examined using 23 items of Segev's instrument (1987) rated on a seven point Likert scale, that have been adopted from (Croteau & Bergeron, 2001). An adaptation of Segev's (1987) multiple-item scale that was specifically developed to measure the Miles and Snow strategic types were used to measure the different strategic types in this study.

Dependent variable: The dependent variable in this research is FP, thus in this study items of subjective measures for performance have been adopted from Jabeen (2014) who adapted from previous works of (Valmohammadi, 2011); and (Jaworski & Kohli, 1993) to measure FP. This study has utilized six items, sales growth rate, profitability, market share, customer satisfaction, the overall performance of firms relative to competitors and overall FP to measure the performance of large manufacturing firms in Pakistan. Respondents were asked to report their satisfaction and assessment regarding the firm's performance.

Mediator variable: In this study, innovation was used as a mediator variable and two main dimensions have been used to measure innovation namely, product and process innovation. Product and process innovation dimensions were measured by five and ten items, respectively. To define the dimensions for innovation and for the measurement scale, we referred to a scale developed by (Camisón & Villar López, 2010) based on (OECD, 2005) guidelines and adopted from (Camisón & Villar-López, 2012).

Measurement Scale: The Likert scale is found to be more appropriate for this study due to the nature of the respondents and the information they are required to provide (Alreck & Settle, 1995). Additionally, Krosnick and Fabrigar, (1997) stated that a scale between five and seven points is more reliable than higher or lower scales and a scale with no midpoint may increase the measurement error. Additionally, Psychometricians have recommended using a seven or nine-point scale because they produce slightly higher mean scores relative to the highest possible attainable score with greater variance adequacy (Dawes, 2008). Thus, this study has used a seven-point Likert scale to measure all variables from 1= strongly disagree to 7= strongly agree (SO, innovation and FP).

RESULTS

Primarily data analysis has been conducted to meet the assumption of running the PLS-SEM. After that measurement model and structural model have been assessed by PLS-SEM.

Measurement model Assessment

Hair, Ringle, and Sarstedt (2013) and Hair, Hult, Ringle, Sarstedt and Thiele (Joseph F. Hair et al., 2017) recommended a two-step process in the assessment of PLS-SEM. The approach involves the determination of the measurement model and the structural model. According to Henseler, Ringle, and Sinkovics (2009), testing the structural model may be meaningless unless the measurement model has been evaluated. Therefore, the present study assessed the measurement model before the structural model to determine the extent to which the data collected fits the model.

The results from this study revealed that composite-reliability (CR) values are 0.940 (FP), 0.923 (INO), and 0.940 (SO) as shown in Table 1. The Cronbach Alpha values are and 0.891 (FP), 0.908 (INO), 0.928 (SO) as shown in Table 1 and Fig. 1.

Table 1. Reliability and Validity

	Cronbach's Alpha	rho_A	CR	AVE
SO	0.928	0.929	0.940	0.636
SOA	0.861	0.868	0.935	0.848
SOD	0.776	0.791	0.870	0.692
SOP	0.880	0.881	0.926	0.807
SOR	0.910	0.924	0.935	0.745
FP	0.891	0.893	0.920	0.698
INO	0.908	0.914	0.923	0.504
IPI	0.818	0.813	0.876	0.591
IPR	0.920	0.922	0.933	0.583

Convergent-validity assessed by AVE which values are 0.698 (FP), 0.504 (INO), and 0.636 (SO) as shown in Table 1. However, discriminant validity for this model has been measured by Fornell-Larcker Criterion (J. F. Hair et al., 2010) as shown in Table 2. It indicates that the square root of AVE (diagonal) is higher than the correlations (off-diagonal) for all reflective constructs.

Table 2. Fornel-Larcker Criterion

	SO	SOA	SOD	SOP	SOR	FP	INO	IPI	IPR
SO	0.955								
SOA	0.703	0.865							
SOD	0.745	0.665	0.832						
SOP	0.688	0.797	0.548	0.898					
SOR	0.678	0.699	0.533	0.799	0.801				
FP	0.665	0.623	0.521	0.618	0.745	0.798			
INO	0.751	0.694	0.632	0.658	0.699	0.747	0.822		

IPI	0.705	0.665	0.600	0.599	0.598	0.529	0.772	0.796
IPR	0.710	0.650	0.609	0.618	0.547	0.656	0.583	0.756

Note: SO = Strategic Orientation, INO = Innovation, FP = Firm Performance

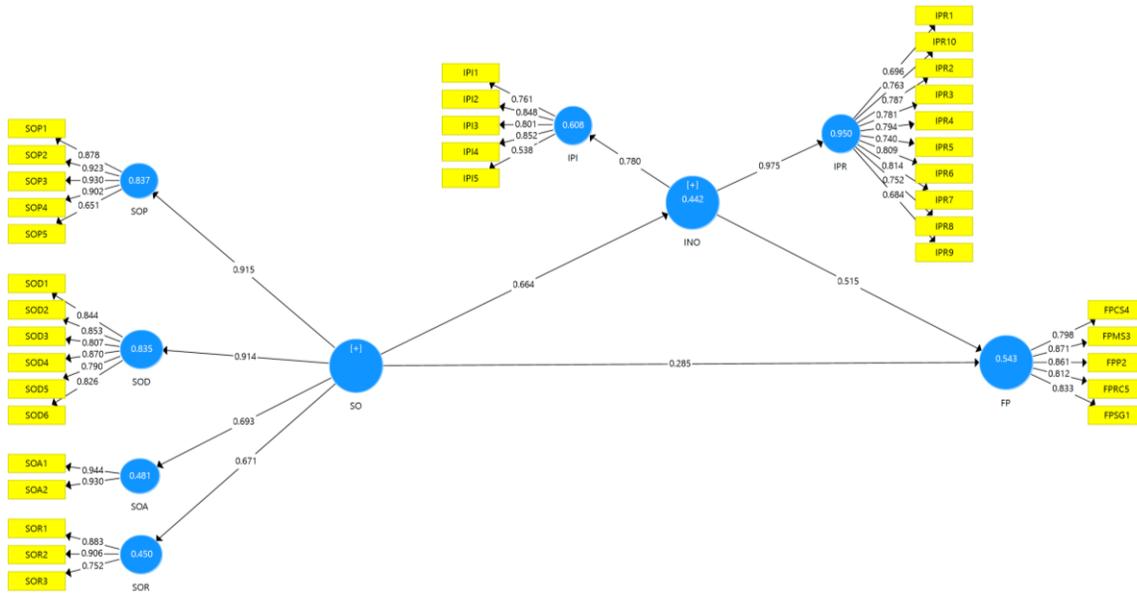


Figure 2. Measurement Model

Note: SO = Strategic Orientation, INO = Innovation, FP = Firm Performance

Structural model Assessment

Once the reliability and validity have been achieved in the measurement model, we have assessed the structural model. In the structural model, we have examined the path coefficient (Hypothesis testing), Coefficient of determination (R2 value). The coefficient of determination (R2 value) of this study is 54.3% and 44.2% in FP and innovation, as shown in Fig. 3. For evaluating the path coefficient (hypotheses testing), we run the bootstrapping in Smart-PLS. one-tailed test with 5% level of significance to assess the P-Value and T-statistics to test the significance or insignificance of hypothesis. Baron and Kenny (1986) are used to test for mediation effect of innovation on the relationship between SO and FP. This method proposed that an explanatory variable (which is SO in this study) must be related independently to both a mediator variable (which is innovation) and dependent variable (which is FP). In our regression analyses, SO was included as an independent variable while innovation was included as both independent and mediator variable. The premise that SO is related to both innovation and FP is based on our analysis of the correlation results. The results of the structural model, also known as the inner model, are presented in Table 3 below. The first hypothesis H1 (i.e., SO is significantly related to FP) proved to be supportive at 0.05 level of significance ($\beta=0.285$, $t=3.945$, $p<0.01$). Based on hypothesis 2 (H2), the results obtained show that SO is significantly related to innovation ($\beta=0.664$, $t=11.767$, $p<0.01$). Likewise, third hypothesis H3 (i.e., Innovation mediates the relationship between SO and firm’s performance.) was also proved to be empirically at 0.01 level of significance ($\beta=0.343$, $t=5.712$, $p<0.01$).

Table 3. Results of the Structural Model Path Coefficient Hypothesis Testing

Direct Hypothesis testing				
	Mean(Beta)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
SO -> FP	0.285	0.072	3.945	0.000
SO -> INO	0.664	0.056	11.767	0.000

INO -> FP	0.515	0.076	6.769	0.000
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Mediating Hypothesis Testing

	Mean (Beta)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
SO -> INO -> FP	0.343	0.060	5.712	0.000

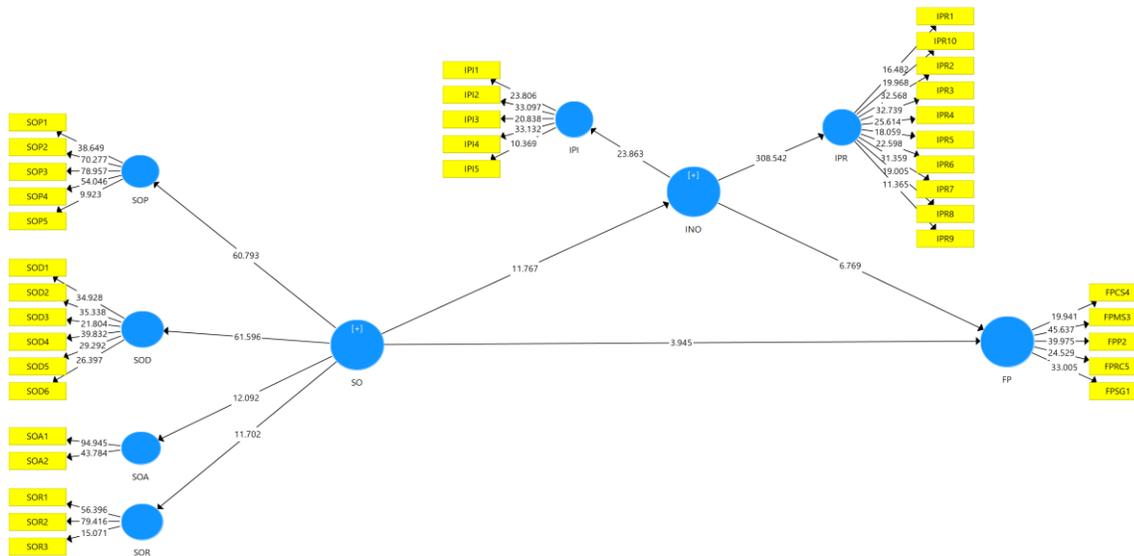


Figure 3. Structural Model

Note: EO = Strategic Orientation, INO = Innovation, FP = Firm Performance

DISCUSSION AND CONCLUSION

While SO is recognized as critical for innovation and performance, to the best of the knowledge of the authors, no empirical study has investigated how SO, and innovation jointly affect performance specifically in the context of large manufacturing firms in Pakistan that has analyzed primary data. Our study found positive results for all the relationships hypothesized in our model. SO, as well as an organization’s innovations, had a significantly positive relationship with FP. There was also a significant and positive relationship between SO and firm innovations. In addition, very notably, our results show that organizational innovations play a mediating role in the relationship between SO and FP. Innovation explained a significant amount of variance in the FP. We found that innovations are encouraged by SO.

The model that has been developed in this study can help future researchers to simultaneously measure SO, innovation, and performance for examining the relationships between these variables in their case studies. An avenue for further investigations is to examine the model in the other industries/sectors and specifically in service companies. The other direction for further research would be to investigate the direct and indirect effects of SO on performance in the presence of the other variable for example, moderator. In addition, it

is needed to longitudinally evaluate how an organization's culture profile influences the innovation implementation as well as the resulting effect on FP during the life cycle of companies.

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