Link between Environmental Dynamism and Firm Performance:
The role of Strategic Planning.

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Abstract
Furthering the established association between environmental influence and firms’ performance, the study tested the mediating role of strategic planning on the connection between dynamic environment and firms’ performance. Data for the research were collected from 245 manufacturing Small and Medium Enterprises (SMEs) operating in Khyber Pakhtunkhwa (KP), Pakistan through survey questionnaires. Statistical analysis of Confirmatory Factor Analysis (CFA), Path Analysis, and mediation analysis were carried out to test the hypotheses. The hypotheses testing revealed that environmental dynamism strongly influenced firm performance as well as strategic planning. Similarly, firm performance showed significant response to strategic planning. Deeper analysis of mediation confirmed partial mediating role of strategic planning on the association between firms’ performance and environmental dynamism. The findings of the research implies that managers should consider business environment in each strategic choice making it aligned with its strategic planning, firm goals and objectives in order to promote business.

Key words: environmental dynamism, strategic planning, financial performance, non-financial performance, SMEs, Pakistan.

Introduction
SMEs need to do strategic planning to improve their performance. This is better done by aligning strategic planning with the business environment (Porter, 1980; Rudd, Greenley, Beatson, & Lings, 2008). Specifically in a dynamic and turbulent environment, firms can manage this with strategic planning and thus perform better (Rudd et al., 2008). In

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addition, firms with strategic planning reap a number of benefits such as gaining competitive advantage, crafting logical strategies, and staying focus on achieving firms’ goals and objectives (Chin, Hamid, Rasli, & Tat, 2014; Veskaisri, Chan, & Pollard, 2007). Recently, Marn et al. (2016) tested the influence of uncertain environment and ownership motivation on the level of strategic planning applied by Malaysian SMEs. They found significant impact of both uncertain environment and ownership motivation on SMEs strategic planning.

The review of literature indicates that number of researchers investigated the impact of environment on firm performance with or without other important factors such as corporate strategies (Amoako-Gyampah & Acquaah, 2008), operations strategies (Akgul, Gozlu, & Tatoglu, 2015; Badri et al., 2000; Chi, 2010, 2015; Chi et al., 2009; Juniarti, 2015; P. T. Ward & Duray, 2000), supply chain structure (Chi et al., 2009) and information technology (Schniederjans & Cao, 2009) etc. Similarly, the importance of strategic planning in contributing to firm performance is also studied (e.g. Akinyele & Fasogbon, 2010; Arasa & K’Obonyo, 2012; Khan & Khalique, 2014). Nevertheless, to the best of the authors’ knowledge, no earlier research has investigated these three variables simultaneously particularly in Pakistani context. Moreover, the study is different because it tests the mediating role of strategic planning on the connection between environmental dynamism and firm performance. Second, the contextual settings differentiate the study from others as this has been tested in Pakistan, a developing country, and particularly in the manufacturing small and medium enterprises (SMEs).

Review of Literature
Dynamic Environment and Firm Performance
A number of researchers have conceptually and empirically proved the influence of environmental dynamism on firm performance (e.g. Akgul et al., 2015; Anand & Ward, 2004; Cai & Yang, 2014; Chi, 2010, 2015; Chi et al., 2009). Ward and Duray (2000) found that firms that held congruence among environment, operations strategy, and competitive strategy performed better than those who did not. They also found that dynamic environment had a significant but indirect impact on firm performance. Likewise, Anand and Ward (2004) reported that high-performing firms adhered to congruence among dynamic environment and flexibility strategies. However, they noted that particular strategies of flexibility were more successful in particular characteristics of environmental dynamism.
Chi et al. (2009) showed that the fit among particular business environment, structure of supply chain, competitive priorities, and organizational performance resulted in high performance. Moreover, Terjesen et al. (2011) reported that dynamic environment mediated the association between quality strategy and venture performance. However, no evidence for the mediating effect of dynamic environment was found on the connection between low operating cost and venture performance. Akgul et al. (2015) found that environmental dynamism had strong positive influence on firm performance. In addition, Chi (2015) noted that high performing firms pursued differentiation strategies (quality, delivery, flexibility) in response to environmental dynamism. On the other hand, low performing firms followed mainly low cost operations strategy with equal emphasis on quality, delivery, and flexibility strategies simultaneously. Chi (2015) implied the poor performance as a result of lack of clarity in pursuit of operations strategy.

**H1: Environmental dynamism has positive and significant impact on firm performance.**

**Environmental Dynamism and Strategic Planning**

Strategic planning helps achieve firms’ goals and objectives by efficient and effective allocation of firms’ limited resources (Blackerby, 2003). For strategic planning to be effective, firms need to understand and align its strategic planning with the business environment (Porter, 1980). Specifically, Rudd et al. (2008) argue that firms can improve their performance with strategic planning by coping with the dynamic and volatile business environment. These benefits include devising better strategies (David, 1997), gaining competitive edge over competitors (Dansoh, 2005; Veskaisri, Chan, & Pollard, 2007), and staying more focused on achieving of firms’ goals and objectives (Arasa & K’Obonyo, 2012). However, researchers have not given much attention to study the influence of uncertain environment on firms’ strategic planning and ultimately on firms’ performance (Marn et al., 2016).

According to Agbim, Oriarewo, and Zever (2014) micro enterprises benefit from the implementation of strategic planning in a volatile and uncertain environment. Similarly, Chin, Hamid, Rasli, and Tat (2014) noted that SMEs are more influenced than large firms by environmental uncertainty. In this connection, Owolabi and Makinde (2012) noted that SMEs acknowledged that external environmental forces were out of their control but found that SMEs appreciated the role of strategic planning. For the reasons, SMEs tended to do strategic planning to cope with the rapid environmental uncertainties. Similarly, owing to the higher degree
of environmental pressures, and resources constraints, Watkins (2012) emphasized the employment of strategic planning, and incorporation of risk control and management system by SMEs.

Hin, Kadir, and Bohari (2013) suggested that SMEs in Malaysia should make use of strategic planning to cope with the challenges of high environmental uncertainty, turbulence, and volatility caused by economic downturn. This implies that SMEs should do strategic planning to overcome these pressures and improve their productivity. Moreover, Chin et al. (2014) emphasized that SMEs needed strategic planning to address the environmental uncertainty to improve firm performance by exploiting opportunities and mitigating threats. Recently, Marn et al. (2016) tested the influence of uncertain environment and ownership motivation on the level of strategic planning applied by Malaysian SMEs. They found significant impact of both uncertain environment and ownership motivation on SMEs strategic planning.

**H2: Environmental dynamism has positive and significant impact on strategic planning.**

**Strategic Planning and Firm Performance**

The review of literature showed confounded results regarding impact of strategic planning on firms’ performance. For instance some researchers showed contribution of strategic planning in improving firms’ performance (e.g. Arasa & K’Obonyo, 2012; Glaister, Dincer, Tatoglu, Demirbag, & Zaim, 2008; Jenster & Søilen, 2013; Owolabi & Makinde, 2012; Song, Im, Bij, & Song, 2011) others reported no association between strategic planning and firm performance (e.g. Gibson, Cassar, & Wingham, 2001; Perry, 2001). On the contrary, some researchers found out strong negative bearing of strategic planning on firm performance (e.g. Dincer, Tatoglu, Glaister, Demirbag, & Zaim, 2006; Hand, Sineath III, & Howle, 1987).

Overall, the review of literature suggests domination of the positive and significant influence of strategic planning on firm performance. For instance, Jenster and Søilen (2013) reported positive influence of strategic planning and firm performance in Chines firms. Similarly, Alaka et al. (2011) reported significant influence of strategic planning on firm performance. In addition, Arasa and K’Obonyo (2012) reported that strategic planning and firms’ performance were closely associated. They further noted that each element of strategic planning strongly influence firm performance. More to the point, Glaister, Dincer, Tatoglu, Demirbag, and Zaim (2008) reported that strategic planning significantly influenced firms’ performance. Furthermore, the connection
between the relationship and strategic planning was mediated by turbulent environment.

On the other contrary, some researchers found out no relationship between strategic planning and firms’ performance. For instance, Capon et al. (1994) found no significant difference between them in short run. However, they noted that planners outperformed non-planners in long run. More to the point, Gibson, Cassar, and Wingham (2001) reported no linkage between strategic planning and Australian SMEs’ performance. Alternatively, Dincer et al. (2006) reported strong adverse influence of formal planning on firm performance. Similar negative connection between strategic planning and firm performance were reported (Fredrickson & Mitchell, 1984; Hand et al., 1987).

H3: Strategic planning has positive and significant impact on firm performance.

Figure # 1: Research Framework

Source: Authors own research

**Data and Methods**

*Data*

The research is based on data from SMEs operating in Khyber Pakhtunkhwa (KP), Pakistan. The data is collected through self-administered questionnaires from operations managers, managers, and other executives. Based on the research setting, we employed delivery and collection method for data collection (Saunders, Lewis, & Thornhill, 2009). Originally, the top 400 SMEs operating in KP were selected and were subjected to random sampling technique. 245 out of 400 questionnaires were collected resulting in 61% response rate.

*Operational Definition*

The underlying constructs of the study are operationalized using five point Likert scale ranging from 1 ‘low’ to 5 ‘high’. All the four
constructs are operationalized using items drawn from prior valid researchers.

**Environmental Dynamism**

Environmental dynamism is first order factor consisting of four items. These items are ‘rate at which products and services become obsolete’, ‘rate of innovation of new operations processes’, ‘rate of changes in customer needs’, and ‘rate of emergence of new challenges from competitors’.

**Strategic Planning**

Strategic planning is a first order factor comprising of four items. These items are ‘managers are integral part of the strategy formulation process’, ‘managers know exactly most important parameters for formulating jobs’, ‘managers are responsible for initiating and modifying long-range changes’ and ‘managers take part in setting major future programs’.

**Firm Performance**

Two aspects of firm performance namely; financial and non-financial performance is taken in the study. The constructs are operationalized using five point Likert scale ranging from 1 to 5. 1 represented the ‘lower performance than competitors’ to 5 ‘higher performances than competitors’. The financial construct is gauged with profit growth, sales growth, profit margin, and return on assets. Similarly, the high customers’ satisfaction, employees’ satisfaction, and employees’ retention are used to measure the non-financial aspects.

**Analysis and Discussion**

**Path Analytic Model**

Consistent with other prior researchers, the causal effects among the constructs are figured out by conducting path analysis (e.g. Akgul et al., 2015; Badri et al., 2000; Hung et al., 2015). The model fit indices (e.g. Chi-square/df<3, CFI and GFI > 0.9, RMR and RMSEA < 0.08, and P-close > 0.05) meet the thresholds(Hair, Babin, and Krey, 2017) given below in the table # 3.

Table # 3. Thresholds for Model Fit Indices

<table>
<thead>
<tr>
<th></th>
<th>Chi-square</th>
<th>df</th>
<th>Chi-square/df</th>
<th>p-value</th>
<th>CFI</th>
<th>GFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path Model</td>
<td>156.65</td>
<td>85</td>
<td>1.84</td>
<td>0.00</td>
<td>0.96</td>
<td>0.92</td>
<td>0.059</td>
</tr>
<tr>
<td>Threshold</td>
<td>&lt;3</td>
<td>&gt;0.05</td>
<td>&gt;0.90</td>
<td>&gt;0.80</td>
<td>&lt;0.08</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Hair et al. (2017)
Figure # 3: Relationship among environment, strategic planning, and firm performance

**Hypotheses Testing**

Hypothesis no. 1 that postulates that environmental dynamism has positive and significant influence on firm performance, is supported by CR >2 and p < 0.05. The finding is consistent with prior researchers’ findings (e.g. Akgul, Gozlu, & Tatoglu, 2015; Anand & Ward, 2004; Cai & Yang, 2014; Chi, 2010, 2015; Chi, Kilduff, & Gargeya, 2009; Juniarti, 2015). Specifically, the higher standardized loading of financial performance (0.68) indicates that it better predicts the variations in the firm performance than the non-financial performance with standardized loading of 0.38. On the other hand, the least contributing factor in the environmental dynamism is ‘rate of information diffusion (spread)’ with standardized loading of (0.63).

Similarly, the CR >2 and p <0.05 extend support to accept the second hypothesis that Environmental Dynamism has positive and significant influence on strategic planning. This finding is in line with the prior researchers’ arguments and findings (e.g. Chin et al., 2014; Hin et al., 2013; Marn et al., 2016). Giving a deeper look to the strategic planning factor, it is found that the most contributing item is ‘managers are responsible for initiating and modifying long-range changes in operations strategy’ with standardized loading (0.84). On the other hand, the least important item that influences the environmental dynamism is ‘managers know exactly what the most important parameters or criteria for formulating jobs are’ with standardized loading (0.73).

Likewise, the third hypothesis that strategic planning has positive and significant impact on firm performance is accepted as indicated by CR > 2 and p < 0.05. This finding is consistent with the prior research findings (e.g. Arasa & K’Obonyo, 2012; Elbanna, 2010; Glaister, Dincer, Tatoglu, Demirbag, & Zaim, 2008; Jenster & Soilen, 2013). On the contrary, other researchers found no significant association between strategic planning and firm performance (e.g. Capon et al., 1994; Gibson et al., 2001; O’Gorman & Doran, 1999) whilst others reported significant but negative association between strategic planning and firm performance (e.g. Dincer et al., 2006; Hand et al., 1987).

**Mediation Analysis**

To find out if strategic planning plays any role in mediating the relationship between environmental dynamism and firm performance, we ran two models. The first model was run before including mediator (strategic planning), to test the influence of environmental dynamism on
The results of the two models are given in table #4 and table #5 respectively. The results of the model excluding strategic planning showed positive and significant impact of environmental dynamism on firm performance with p<0.05 and estimate/intercept of 0.95. Similarly, after including strategic planning in the model, dynamic environment and firm’s performance showed positive and significant relationship with p<0.05 and estimate/intercept of 0.78. Noticeably, the value of estimate/intercept dropped from 0.95 to 0.78 that showed a decrease in the strength of relationship though still significant. These findings suggest that strategic planning partially mediated the connection between business environment and firm performance.

Table #4. Estimates before including mediator (strategic planning) variable

<table>
<thead>
<tr>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Performance</td>
<td>Environmental Dynamism</td>
<td>0.95</td>
<td>0.15</td>
<td>6.40</td>
</tr>
</tbody>
</table>

Source: Authors own research

Table #5. Estimates after including mediator (strategic planning) variable

<table>
<thead>
<tr>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Performance</td>
<td>Environmental Dynamism</td>
<td>0.78</td>
<td>0.14</td>
<td>5.44</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>Environmental Dynamism</td>
<td>0.56</td>
<td>0.13</td>
<td>4.26</td>
</tr>
<tr>
<td>Firm Performance</td>
<td>Strategic Planning</td>
<td>0.21</td>
<td>0.07</td>
<td>2.86</td>
</tr>
</tbody>
</table>

Source: Authors own research

**Conclusions**

The study concludes that despite the spurious association between strategic planning and firm performance, the findings of the study confirmed the positive and significant influence of strategic planning on the firm performance. In terms of firm performance, the financial performance aspect showed more response to strategic planning than non-financial aspect of performance. This implies that SMEs manufacturing in KP, Pakistan should adhere to strategic planning to improve their firm performance both financial and non-financial.

Environmental dynamism is identified as strong and significant predictor of strategic planning. This suggests that strategic planning is
encouraged by the degree of dynamism, volatility, and uncertainty in the business environment. For the reason, managers should take into account the business environment whilst planning strategically. Similarly, managers should take into account its business environment before making any strategic choice as the firm performance showed positive and significant response to environmental dynamism.

The study also infers that strategic planning partially mediates the connection between environmental dynamism and firms’ performance. This implies that managers should do strategic planning that is in line with the business environment and goals and objectives to reap its benefits.

References
Arasa, R., & K’Obonyo, P. (2012). The Relationship between Strategic Planning and Firm Performance. International Journal of


Business and Management, 5(11), 97. JOUR.,


Asian Social Science, 2(4), 448–461. JOUR, Asian Economic and Social Society.