

## **CEO COMMITMENT AND ORGANIZATIONAL INNOVATIVENESS: A STUDY OF PAKISTAN'S EXPORT ORGANIZATIONS**

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**Abstract.** The paper is a first ever contribution to literature in organizational change quoting evidence from export sector of Pakistan. It determines the role of CEO commitment in developing organizational potential for innovation and change. It is based on data acquired from 351 respondents from top managerial positions, representing 21 manufacturing organizations and spread over 8 industrial sectors of export-oriented organizations from Pakistan. Results indicate that CEO commitment has a positive relationship with all the 9 factors of innovation potential. Five items used as indicators measuring CEO commitment showed that four items are significantly associated to innovation potential of the organization. Budget and time commitment, patience for change, and monitoring of change results are highly significantly associated while equipment committed is not a proper indicator of CEO commitment. The results have implications for CEOs of export organization in making their firms more innovative while creating more meaningfulness of work, maintaining open communication and keeping business intelligence of competitor actions. This study confirms that managerial choice in developing economies does not account for more than 30% of organizational variations. This finding is in line with other replication studies conducted in developed economies, thus expanding the application of structural contingency theorists' debate.

### **I. INTRODUCTION**

Public or customers all must have feeling of satisfaction after exchange of value. Organizations produce products of value that can be exchanged. Organizations exist to meet societal demands and those that do not meet the

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demands perish. Organizations are up against other organizations that compete for being more in demand and useful to the society. What keeps the organization from becoming redundant and unwanted in the society is their ability to change and innovate. Organizations design processes and procedures for higher efficiency and for building routines. Routines cause continuity and continuity makes change difficult. This dichotomy in organizational objectives for change and continuity puts an odd burden on the shoulders of top management to make structures that facilitate both continuity and change at the same time.

In developed economies change and innovation is managed through ensuring open communication, decentralization, empowerment, risk-taking culture, and by making structure that helps learning. Do organizations in developing economies like Pakistan have similar characteristics or are these different from organizations in developed economies? Examples from Asian and African countries are few but are indicative of using varied approach while managing organizational development. The case of Chinese managers successfully implementing changes in light of regulatory reforms in close coordination with communist party and the influence of family culture in Korea represent that innovation may have different parameters that may be peculiar to developing economies. Some factors in case of family owned businesses such as the role of CEOs might have a different application in building the culture of innovation.

In Pakistan the role of CEO in the efforts of change and innovation cannot be ruled out, as the traditional setting becomes more relevant in a patriarchal society. It would be significant to know the role of CEOs as compared to other factors effective in developed economies in bringing change in organizations. Smith and colleagues (2005) have suggested a perceptual instrument that measures innovativeness of an organization. Most of the variables in the instrument measure innovativeness in terms of structural and behavioral characteristics. This paper uses Smith *et al.* (2005) instrument with an additional variable of 'CEO's commitment to change' for collecting data from 351 respondents representing 21 export-oriented organizations from eight different industrial sectors spread over five cities of Pakistan.

The results indicate that in Pakistan's export sector CEO's commitment is responsible for building potential of innovativeness and change in organizations. The results of this study confirm the earlier findings in European and North American replications researches where it is concluded that managerial choice accounts for not more than 30% of role in

organizational change. The findings show that CEO affects upto 28% in developing factors of innovation. On the whole, CEO commitment is strongly associated with all nine factors of innovation. Another important finding of the study is that CEOs need to concentrate on developing market intelligence gathering and sharing of information with employees for enhancing meaningfulness of work to employees. Thus, showing that CEO commitment in Pakistan's context is an important factor contributing innovativeness of organizations.

## II. LITERATURE REVIEW

Various perspectives in organization theory tend to explain variations taking place in organizations (Burrell and Morgan, 1985). Theorists in contingency perspective believe that organizations change as a result of changes taking place in the environment. Departments that are more in contact with the environment exhibit more structural differentiation. Theorists like Burns and Stalker (1961) earlier had pointed out that organizational structure can be machinelike and monotonous those are based in routines. Mechanistic structures exhibit higher centralization, formalization and specialization. However, routine based structures are mechanistic and are a sign of relatively more stable environments. Such instances are seen in automated manufacturing plants with planned production schedules, with little change in product quality or in volume of demand. High efficiency becomes the end for taking maximum gains out of technological usage. Process based nature of production creates dependence on various sections of the departments such as chemical industries that are more team oriented and have higher number of divisions within production processes as compared to automated manufacturing units. When organizational structure is in accordance with the technology the performance indicators showed remarked improvement. An important point that Woodward (1958) made is regarding the requirement of a suitable technology that could match the organization structure, this he calls fit, in turn it improves results and increase outcomes. A significant managerial task was thus identified, *i.e.* modifying hierarchies for improved performance and this was to be done by aligning the structure with the technology in use. Neither technology adopted by organization nor structure developed take place automatically, this remains the initiative of the managers who undertake the decision of modification to bring fit for greater organizational efficiency. All effort in the structural contingency is to bring structure in fit with the environment. Lawrence and Lorsch (1967) identified the impact of turbulent changes in the environment on organizational structure. Higher structural differentiation in various departments is the result

of rapidly changing environment. The argument that performance increases when structure is in fit with the environment is also significant for explaining that when performance decreases there must exist a misfit (Donaldson, 1996). It can always be deduced that endogenous organizational decisions must rest in managerial decisions.

The theorists who are interested in knowing the human initiative in bringing the changes have developed a stream of literature within the contingency perspective termed as strategic choice theory. These theorists in strategic choice tend to identify the role of managerial discretion as the force of change within the firm but it acts upon the pressure of environment. The three strategic choices as identified by Child (1972a; 1972b) include the growth, maintaining status quo and retrenchment. For Burns and Stalker (1961) the three strategies are a result of opportunity, stability, or decline in environmental factors. Stability in environment demands *status quo* in strategies as task uncertainty is low in unchanging environment. Outside rapid changes bring high task uncertainty and innovation becomes a key strategy. Managerial choices include innovation, stability, and disengagement. In this stream of literature change is better explained when previously held managerial choices are studied while exercising discretion in order to innovate in turbulent environments. Occasionally, when organizations show monopolistic tendencies the managerial discretion can influence the environment too (Hambrick and Mason, 1984; Hambrick and Abrahamson, 1995). More frequently however, enhanced exogenous variables influence organizations and their reform agendas that result in mimicking practices. While discussing the example of transformation of Chinese organizations following reform plans set by government Keister (2002) has identified the role of relationship between top management and political influences of labor and communist party in the acceptance and implementation of the agenda. The context of Chinese social influences on the organizational variation shows how leadership brings outside pressures onboard. Bearing in mind the sheer newness of reforms in Chinese organizations the internal environment faced highly uncertain environment and yet the labor showed high acceptance of reforms agenda due to high involvement of top management. Managers seem to play an important innovative role in diffusion. Donaldson (1996: 67) has claimed through multi cultural studies that developed countries' research has shown "... that 67 percent of variance in structural specialization is accounted for by size ... [T]he proportion of structural variance available to be explained by choice is under 30 percent at best. And it may well be less than 30 percent because of any other causes of structure that might exist." This means that examples of managerial choice in

the context of Pakistan if found more than 30% will show the uniqueness in the character however if found less than 30% will indicate commonality of the concept.

The question that what makes some CEO's more willing to introduce change as compared to other CEOs has been addressed by researchers. CEO's functional background helps in comprehending environmental changes that becomes a precursor to introduce change agenda in organization. Empirical evidence exists that there is relationship between organizations diversification strategies and professional background and experience of CEOs (Smith and White, 1987). Hambrick *et al.* (1993) has concluded that upper echelons having authority avoid risky decisions and therefore restrain from adopting change and innovative practices. Risk-taking CEOs commit funds to tryout new technologies and bring change. Researchers have found out that CEOs can have direct influence on changes taking place in structure and culture of organizations (Dacin *et al.*, 2002; Seo and Creed (2002). However, the degree to which managerial choice shapes organizational change and outcomes may differ from industry to industry (Datta *et al.*, 2003; Tushman and Rosenkopf, 1996). In the implementation phase CEOs committing more time have shown higher success rates Mankin (2007). Hence, CEO's functional background and time committed for introducing change can have impact on implementing innovative practices and these differ from industry to industry.

For organizations to be truly innovative Kim and Mauborgne (1999) identified that value addition in all activities should be managed. The continued and sustained variations for consistent quality improvement are possible only when efforts for value addition exist at every level. An integrative approach to adopt value innovation quotient, *i.e.* 'Value IQ' is vital for enhancing aggregate organizational outcomes (Dillion *et al.*, 2005). It injects higher propensity for value changes in organizational culture and its systems. Lynda-Smith's *et al.* (2005) has designed an instrument that specifically measures value innovation characteristics of the organization. The factor identified include meaningful work, risk-taking culture, customer orientation, agile decision-making, business intelligence, open communication, empowerment, business planning, and characteristics of a learning organization. These factors are measured through employee perception on '*how things are run here*' rather than formal structure. Formal structures and processes do not take into account the actual affairs as they take place in the organization. Even though the standardization regimes certify the sequence and processes of the organizations, the employees' comprehension is most suitable to know how these factors affect the daily workout in organizations

(Dillion *et al.*, 2005; Lynda-Smith's *et al.*, 2005). A perceptual tool that gauges the employee opinion regarding "what is going on" thus becomes a valuable contribution to the body of literature.

Literature that explains the industrial context of overall growth in Pakistan has made some important conclusions. In her PhD study Naveed Hasan (1997) found that in Pakistan the business development of large groups in the early stage<sup>1</sup> was largely based on political association of top management with state's policy making institutions. When political patronage reduced in 1971-1977<sup>2</sup> only those organizations flourished that diversified due to the presence of internal organizational systems reflected through communication, control and adoption of technology. Firms that could develop internal processes and standard operating systems survived the wrath of nationalization even when the early political support had been removed (Hassan, 1997). The four case studies used for the purpose reflect that in the context of Pakistan structure counts in the success and innovativeness of organizations. It however remains a choice of top management to build internal systems or continue traditional practices. Traditionally the CEO is all powerful and system does not work in the absence of guideline from the top. Petty decisions at lower level still have influence from the top manager thus empowerment, risk-taking, open communication, learning from mistakes, and employee growth remain elusive dreams in Pakistan's context.

It can be concluded from the above discussion that the choice to develop a structure that can support change is the discretion of top managers while in the context of Pakistan the decentralization is low and the choice to bring organizational changes rests with the CEOs. CEOs that are committed to bring change are more likely to develop a structure that can support change and innovation. CEO's commitment can be measured in terms of personal time spent for change, persistence and continuation for change, finance and equipment allocated for change, and monitoring change results. Such are the items taken for assessing CEO's commitment to change.

In the light of literature review it can be concluded that in the context of Pakistan CEO's commitment for change affects the organizational innovativeness.

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<sup>1</sup>In 1960-69, USAID was used to develop a political clout within big and influential business groups that remained loyal to General Ayub Khan's pro-US policies.

<sup>2</sup>After Ayub and Yahya, the two military zealots, Zulfikar Ali Bhutto came to power and initiated nationalization of business entities.

H<sub>1</sub>: CEO's commitment for change is associated with organizational potential for innovation

### III. METHODOLOGY AND DATA

For assessing the innovativeness in organizations the instrument used was developed by Lynda-Smith *et al.* (2005). Initially 900 questionnaires were sent to 30 export organizations spread in 5 cities of Pakistan. The respondents in each organization included 30 top managerial staff other than CEOs. The total questionnaire received that were considered fit to be used in analysis were 351 with a total response rate of 39% representing 21 export-oriented manufacturing organizations spread over five cities. Multi-staged sampling was used for this purpose.

In the first stage of sampling specific industry was selected by determining the volume of exports. Organizations included in the sample were drawn after carefully identifying the volume of exports in each industrial sector as determined by Trade Development Authority of Pakistan (TDAP). TDAP divides the total exports in terms of three sectors namely *textile and garments*, *other core categories* and *all others*. The sample drawn for this study comprised of organizations representing the first two categories. This was done on two counts, one that organizations in these two categories accounted for 86% of Pakistan's exports<sup>3</sup> and two that in these two categories one could find organizational staff large<sup>4</sup> and educated<sup>5</sup> enough to participate in the survey. The first two categories of export sector comprise of fifteen sub-sectors, the textile and garment category includes 8 sub-sectors while other core categories included 7 sub-sectors of exports. The filled questionnaires represented in all 8 industrial sectors out of the 15 sub-sectors of the two large export categories.

In the second stage organizations were drawn from the directory published by TDAP in 2007<sup>6</sup> that lists out major exporters under each category and each sub-sector of exports. Letters were written to organizations for

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<sup>3</sup>The survey for data collection took place in 2007, the average export figures for the two sectors during 2001-2006 accounted for 86% of Pakistan's total exports. Five year export average was taken instead of last year export figures for keeping a more holistic picture of exporting sectors and for avoiding any sudden changes in one year.

<sup>4</sup>In *all others category* organization staff is relatively low in number and mostly comprises of organizations run through *one-man show*.

<sup>5</sup>The language of the questionnaire was English. Urdu translation was avoided in order to retain the original innovativeness measure as prepared by Lynda-Smith *et al.* (2005).

<sup>6</sup>The most recent directory available at the time.

inquiring about willingness of their participation. Organizations that did not appear in the list in any of the last five years were seen as unstable and therefore were dropped.

- Within each category traders of the commodity also appeared and were dropped as export based manufacturing organizations were being selected.
- Organizations were also dropped from sample if the CEOs had less than two years of experience in the organization.
- Organizations that appeared on the basis of draw but refused to participate in the research were also dropped and in their place new sample was drawn (Wool and Wool Products and Art, Silk, and Synthetic Textile).
- Some organizations agreed to participate, questionnaires were delivered to them, but despite follow-up no questionnaires were received from them (Leather and Leather Goods category and low response in Made-ups).

If any of the parameters was not available within the drawn unit, second sample within the same product category was drawn. Such process continued till the product category list was exhausted. One sample organization each was to be chosen from three consecutive product categories wool and wool products, sports goods category, and art silk and synthetic textile. But only CEOs from sports goods manufacturers categories agreed to participate in the study, therefore sample of 3 organizations were taken from sports and sports goods industries.

The statistics thus acquired were tested for reliability of the 33 item scale for innovativeness and 5 items scale for CEO commitment were put together for evaluating alpha value. The Cronbach Alpha value for the 38 item, when item deleted, came out to be 0.9337 (Appendix I). This is well above the required reliability coefficient value of 0.6 showing highly reliable data for proceeding with analysis for testing its validity. Next multiple regression was run in order to test the model. The results and interpretation are placed in the next section.

#### **IV. EMPIRICAL RESULTS**

In order to find out relationship between CEO commitment and the factors that contribute to innovativeness of organization Pearson correlation is run. The detailed results are shown in Table 1. The correlation results indicate positive and highly significant association between CEO commitment and all



TABLE 1  
Correlation between CEO Commitment and Factors of Innovation Potential  
Correlations

		Pearson Correlation	CEO Commitment	Meaningful Work	Risk-taking Culture	Customer Orientation	Agile Decision Making	Business Intelligence	Open Communication	Empowerment	Business Planning	Learning Organization
CEO Commitment	Pearson Correlation	1.000	1.000									
	Sig (2-tailed)	–	–									
	N	328	328									
Meaningful Work	Pearson Correlation	0.194**	0.194**	1.000								
	Sig (2-tailed)	0.000	0.000	–								
	N	328	328	351								
Risk-taking Culture	Pearson Correlation	0.446**	0.446**	0.490**	1.000							
	Sig (2-tailed)	0.000	0.000	0.000	–							
	N	326	326	349	349							
Customer Orientation	Pearson Correlation	0.393**	0.393**	0.402**	0.429**	1.000						
	Sig (2-tailed)	0.000	0.000	0.000	0.000	–						
	N	328	328	351	349	351						
Agile Decision Making	Pearson Correlation	0.436**	0.436**	0.444**	0.469**	0.451**	1.000					
	Sig (2-tailed)	0.000	0.000	0.000	0.000	0.000	–					
	N	325	325	347	345	347	347					
Business Intelligence	Pearson Correlation	0.303**	0.303**	0.231**	0.302**	0.348**	0.374**	1.000				
	Sig (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	–				
	N	328	328	351	349	351	347	351				
Open Communication	Pearson Correlation	0.326**	0.326**	0.372**	0.477*	0.417**	0.513**	0.313**	1.000			
	Sig (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	–			
	N	327	327	350	348	350	346	350	350			
Empowerment	Pearson Correlation	0.452**	0.452**	0.420**	0.505**	0.418**	0.462**	0.275**	0.527**	1.000		
	Sig (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	–		
	N	327	327	349	347	349	345	349	348	349		
Business Planning	Pearson Correlation	0.410**	0.410**	0.367**	0.422**	0.534**	0.517**	0.450**	0.474**	0.412**	1.000	
	Sig (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	–	
	N	326	326	349	347	349	345	349	348	347	349	
Learning Organization	Pearson Correlation	0.376**	0.376**	0.389**	0.427**	0.539**	0.500**	0.354**	0.497**	0.420**	0.575**	1.000
	Sig (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	–
	N	328	328	351	349	351	347	351	350	349	349	351

\*\*Correlation is significant at the 0.01 level (2-tailed).

the nine factors of innovation potential. The individual association of CEO commitment with meaningful work ( $p < 0.001$ ,  $r = 0.19$ ), risk-taking culture ( $p < 0.001$ ,  $r = 0.45$ ), customer orientation ( $p < 0.001$ ,  $r = 0.39$ ), agile decision making ( $p < 0.001$ ,  $r = 0.42$ ), business intelligence ( $p < 0.001$ ,  $r = 0.30$ ), open communication ( $p < 0.001$ ,  $r = 0.33$ ), empowerment ( $p < 0.001$ ,  $r = 0.45$ ), business planning ( $p < 0.001$ ,  $r = 0.41$ ), and learning organization characteristics ( $p < 0.001$ ,  $r = 0.38$ ). The results indicate that the hypothesis regarding the possible association between CEO commitment and innovation factors of an organization are well founded with all the nine factors.

Next regression analysis is run to see the predictability of CEO commitment for combined innovation potential factors of the organization. All values of individual 33 items were added together and the 5 items that indicate the degree of CEO commitment were added to study the relationship. The model is shown below:

#### Model 1

$$\hat{Y} (\text{Innovation Potential}) = 65.35 + 0.526 (\text{CEO Commitment})$$

$$p < 0.001 \text{ and } R^2 = 0.277$$

The standardized beta coefficient shows a high value (0.526) indicating a high predictability with high significance (for detailed regression tables refer to Appendix II).

The results of regression analysis confirm the validity of the model that CEO commitment partially predicts innovation potential of the organization. The significant  $R^2$  value of 0.277 shows the strength of predictability of innovation potential of the organization through the existence of CEO commitment. The results are particularly significant as the sample covers 21 organization employees that represent 8 industries and that are spread over 5 different cities. The indicators of CEO's commitment for change when taken together with all the five items can assess up to 27% of how tuned an organization is for innovation.

As a third step in order to evaluate relatedness of individual indicators of CEO commitment with innovativeness of the organization multiple regression analysis is run.

The five models (Table 2) are a result of block wise loading of the five indicators used to measure CEO commitment. The indicators include CEO's budget commitment, time commitment, equipment commitment, patience, and results monitoring for change (Appendix III: Model Summary) these

predict innovation potential partially. The least square regression Models are shown Table 2.

TABLE 2  
Regression Estimates for Dependent  
Variable: Innovation Potential

Model	1	2	3	4	5
Constant	94.155	80.59	78.26	72.43	64.14
Budget Commitment	7.02*** (0.38)	4.64*** (0.25)	3.95*** (0.214)	3.59*** (0.19)	3.7*** (0.202)
Personal Time		5.8*** (0.3)	4.94*** (0.256)	4.24*** (0.22)	3.91*** (0.203)
Equipment			2.17 <sup>^</sup> (0.11)	1.05 (0.05)	0.4 (0.02)
Patience				3.73*** (0.19)	2.65* (0.13)
Monitoring Effects					3.93*** (0.21)
Multiple <i>R</i>	0.38	0.47	0.48	0.5	0.54
<i>R</i> <sup>2</sup>	0.15	0.22	0.23	0.25	0.29
Adjusted <i>R</i> <sup>2</sup>	0.14	0.21	0.22	0.24	0.28
Significance	0.001	0.001	0.001	0.001	0.001

<sup>^</sup> $p < 0.1$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Numbers in parentheses show standardized  $\beta$  coefficient for indicators of CEO commitment

In parentheses are the standardized values of  $\beta$  coefficients. The column showing model 5 gives the complete loading of all the indicators. The value of multiple *R* shows that model explains 54% of variation in innovation potential. The value of *R*<sup>2</sup> is 0.29 for the whole model. The values in parentheses are standardized  $\beta$  coefficient for each item. Except equipment all four items show high significance to affect the innovation potential of the organization. There is high significance of the model ( $p < 0.001$ ).

Stronger indicators of CEO commitment for change include monitoring effects of change ( $p < 0.001$ ,  $\beta = 0.21$ ), personal time commitment ( $p < 0.001$ ,  $\beta = 0.20$ ), budget commitment ( $p < 0.001$ ,  $\beta = 0.20$ ), and showing patience ( $p < 0.05$ ,  $\beta = 0.13$ ).

## V. DISCUSSION AND CONCLUDING REMARKS

Organizations need to change frequently in order to survive, maintain, and grow, in turbulent markets and also in high competition markets. Firms that are export-oriented have a special significance as these organizations function and manufacture locally while meeting the market competition and demand of foreign markets. The export organizations in Pakistan, however, have evolved through a process that has some consequences on the management practices of these firms. In the sixties USAID was dispersed by military government for later political gains and support. This resulted in organizational growth and success that had little functional bases. The success of organizations was not always dependent upon superior organizational structures and processes. Moreover, upper echelons rely more on personal involvement than on standard operating procedures in export organization where stakes are high in Pakistan. The literature review has shown that organizations in developed economies require factors such as meaningfulness of work for employees, customer orientation, characteristics of learning organization, open communication, risk taking culture, agile decision making, empowerment, and business planning in order to maintain innovation potential for change. In Pakistan however these factors are associated to the degree of CEO commitment for change and innovation. Organizations that have committed CEOs are expected to show more factors of change and innovation. The most significant indicators of CEO commitment include the personal time spared, budget committed, remaining resilient, and monitoring of change results.

A very significant finding is that CEO commitment indicators, when taken together, explain innovation potential of the organization by not more than 30% (Adjusted  $R^2$  is 0.28, Model 5, Table 2). This goes in line with what Donaldson (1996) had placed that the managerial choice is responsible for not more than 30% of organizational variations in developed economies. It shows that though the role of CEO commitment in building organizational innovation potential is high in the context of Pakistan's export sector, the managerial choice affecting organizational change remain within the same range as identified by literature published in other more developed economies.

Organizations in Pakistan that need to remain competitive should therefore have CEOs that are committed to change. Indicators of CEOs that are committed to change include the time and budget allocated for change, monitoring of results and the resilience for organizational change. This however develops a dependence on CEOs, in order to reduce this

dependence for change on top management, more emphasis must be laid on structural characteristics that could facilitate change. To name a few meaningfulness of work, business intelligence, and open communication are the factors that have shown less strength of association with CEO commitment for change, indicating the possibility of improvement. CEOs need to be more open in communication with the employees and design the work such that employees know how their work affects customer satisfaction. Similarly CEOs are less concerned about competitors as benchmarking and monitoring of competing organizations remains low. This is understandable as export organizations go with low level of market research and remain less intelligent about the moves of competition.

The strongest relationship of CEO commitment lies with risk-taking culture, empowerment, agile decision making, business-planning and customer orientation. Though the relationship exists, effectiveness of these factors is based on employee meaningfulness of work. This variable though highly significantly related to CEO commitment shows the weakest relationship. How employees could feel meaningfulness of work would depend upon communicating to them about end results and by informing and giving feedback to the employees regarding their performance. However, the process of open communication and gathering, sharing and usage of business intelligence on competitors had the least value of relationship with CEO commitment. A natural extension and a follow-up study could be in the area of process design for implementing organizational change.

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## APPENDIX I

## Reliability

\*\*\* Method 1 (space saver) will be used for this analysis \*\*\*

## RELIABILITY ANALYSIS - SCALE (ALPHA)

Item-total Statistics	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	137.3417	411.4017	0.3908	0.9331
Q2	136.8495	418.9207	0.2999	0.9336
Q3	137.3166	405.3114	0.5595	0.9314
Q4	137.5455	407.0412	0.4849	0.9322
Q5	137.3824	402.9287	0.5894	0.9311
Q6	137.5549	409.4931	0.4111	0.9329
Q7	137.3699	408.8439	0.5178	0.9319
Q8	137.4702	403.4826	0.5808	0.9312
Q9	137.0658	407.3636	0.5785	0.9314
Q10	137.1473	409.3021	0.5150	0.9319
Q11	137.1223	408.1454	0.5373	0.9317
Q12	137.2445	405.6633	0.6016	0.9311
Q13	137.2727	404.7399	0.6042	0.9311
Q14	137.7241	409.8419	0.3759	0.9334
Q15	137.1348	413.8151	0.3657	0.9332
Q16	137.7586	401.3912	0.5807	0.9312
Q17	137.5235	405.8980	0.5284	0.9317
Q18	137.2884	409.6839	0.4574	0.9324
Q19	137.5078	411.7413	0.3802	0.9332
Q20	137.4389	409.4860	0.4733	0.9322
Q21	137.8464	400.8663	0.5868	0.9311
Q22	137.7492	406.6350	0.4879	0.9321
Q23	137.6552	403.7046	0.5586	0.9314
Q24	137.1850	408.6544	0.5395	0.9317
Q25	137.1223	410.9819	0.5037	0.9320
Q26	137.3950	405.6359	0.5346	0.9317
Q27	137.5235	399.7911	0.6562	0.9304
Q28	137.7524	401.4448	0.5671	0.9313
Q29	137.2821	408.5176	0.4716	0.9323
Q30	137.2947	406.5733	0.5683	0.9314
Q31	137.3542	406.0093	0.5421	0.9316
Q32	137.3605	404.0363	0.6358	0.9308
Q33	137.4765	406.0867	0.5506	0.9315
Q34A	137.1787	411.0151	0.4197	0.9328
Q34B	137.1473	410.4531	0.4560	0.9324
Q34C	137.2038	412.4269	0.4254	0.9327
Q34D	137.2351	412.8156	0.4138	0.9328
Q45	137.0784	413.4184	0.3697	0.9332

Reliability Coefficients: N of Cases = 319.0, N of Items = 38, Alpha = 0.9337

## Appendix II

## Regression

Variables Entered/Removed  
(Dependent Variable: Innovation Potential)

Model	Variables Entered	Variables Removed	Method
1	CEO Commitment <sup>a</sup>	–	Enter

a All requested variables entered.

## Model Summary

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.526 <sup>a</sup>	0.277	0.275	15.9318

a Predictors: (Constant), CEO Commitment.

## ANOVA

## (Dependent Variable: Innovation Potential)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30850.079	1	30850.079	121.542	0.000 <sup>a</sup>
	Residual	80461.388	317	253.821		
	Total	111311.5	318			

a Predictors: (Constant), CEO Commitment.

## Coefficients

## (Dependent Variable: Innovation Potential)

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	65.348	5.174		12.631	0.000
	CEO Commitment	2.874	0.261	0.526	11.025	0.000

APPENDIX III

Regression

Variables Entered/Removed  
(Dependent Variable: Innovation Potential)

Model	Variables Entered	Variables Removed	Method
1	CEO commits budget for change <sup>a</sup>	–	Enter
2	CEO commits personal time for change <sup>a</sup>	–	Enter
3	CEO commits equipment for change <sup>a</sup>	–	Enter
4	CEO remains patient for change <sup>a</sup>	–	Enter
5	Effects of the change are monitored by departmental heads/Organizational head <sup>a</sup>	–	Enter

a All requested variables entered.

Model Summary

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.380 <sup>a</sup>	0.145	0.142	17.3304
2	0.467 <sup>b</sup>	0.219	0.214	16.5915
3	0.475 <sup>c</sup>	0.225	0.218	16.5457
4	0.501 <sup>d</sup>	0.251	0.241	16.2966
5	0.536 <sup>e</sup>	0.287	0.276	15.9189

a predictors: (Constant), CEO commits budget for change

b Predictors: (Constant), CEO commits budget for change, CEO commits personal time for change

c Predictors: (Constant), CEO commits budget for change, CEO commits personal time for change, CEO commits equipment for change

d Predictors: (Constant), CEO commits budget for change, CEO commits personal time for change, CEO commits equipment for change, CEO remains patient for change

e Predictors: (Constant), CEO commits budget for change, CEO commits personal time for change, CEO commits equipment for change, CEO remains patient for change, Effects of the change are monitored by departmental heads/Organizational head

ANOVA  
(Dependent Variable: Innovation Potential)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16102.759	1	16102.759	53.615	0.000 <sup>a</sup>
	Residual	95208.708	317	300.343		
	Total	111311.5	318			
2	Regression	24324.011	2	12162.005	44.181	0.000 <sup>b</sup>
	Residual	86987.456	316	275.277		
	Total	111311.5	318			
3	Regression	25076.964	3	8358.988	30.534	0.000 <sup>c</sup>
	Residual	86234.503	315	273.760		
	Total	111311.5	318			
4	Regression	27920.072	4	6980.018	26.282	0.000 <sup>d</sup>
	Residual	83391.395	314	265.578		
	Total	111311.5	318			
5	Regression	31994.127	5	6398.825	25.251	0.000 <sup>e</sup>
	Residual	79317.340	313	253.410		
	Total	111311.5	318			

- a predictors: (Constant), CEO commits budget for change
- b Predictors: (Constant), CEO commits budget for change, CEO commits personal time for change
- c Predictors: (Constant), CEO commits budget for change, CEO commits personal time for change, CEO commits equipment for change
- d Predictors: (Constant), CEO commits budget for change, CEO commits personal time for change, CEO commits equipment for change, CEO remains patient for change
- e Predictors: (Constant), CEO commits budget for change, CEO commits personal time for change, CEO commits equipment for change, CEO remains patient for change, Effects of the change are monitored by departmental heads/Organizational head

**Coefficients**  
(Dependent Variable: Innovation Potential)

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	
	B	Std. Error				
1	(Constant)	94.155	3.862		24.377	0.000
	CEO commits budget for change	7.020	0.959	0.380	7.322	0.000
2	(Constant)	80.597	4.453		18.100	0.000
	CEO commits budget for change	4.642	1.016	0.252	4.570	0.000
	CEO commits personal time for change	5.808	1.063	0.301	5.465	0.000
3	(Constant)	78.263	4.658		16.801	0.000
	CEO commits budget for change	3.951	1.095	0.214	3.607	0.000
	CEO commits personal time for change	4.942	1.181	0.256	4.183	0.000
	CEO commits equipment for change	2.176	1.312	0.108	1.658	0.098
4	(Constant)	72.430	4.922		14.714	0.000
	CEO commits budget for change	3.590	1.084	0.195	3.311	0.001
	CEO commits personal time for change	4.241	1.183	0.220	3.584	0.000
	CEO commits equipment for change	1.049	1.338	0.052	0.784	0.433
	CEO remains patient for change	3.737	1.142	0.185	3.272	0.001
5	(Constant)	64.139	5.234		12.254	0.000
	CEO commits budget for change	3.731	1.060	0.202	3.520	0.000
	CEO commits personal time for change	3.916	1.159	0.203	3.380	0.001
	CEO commits equipment for change	0.404	1.316	0.020	0.307	0.759
	CEO remains patient for change	2.649	1.148	0.131	2.307	0.022
	Effects of the change are monitored by departmental heads/ Organizational head	3.926	0.979	0.208	4.010	0.000

**Excluded Variables**  
(Dependent Variable: Innovation Potential)

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance	
1	CEO commits personal time for change	0.301 <sup>a</sup>	5.465	0.000	0.294	0.816
	CEO commits equipment for change	0.228 <sup>a</sup>	3.811	0.000	0.210	0.724
	CEO remains patient for change	0.268 <sup>a</sup>	5.014	0.000	0.271	0.879
	Effects of the change are monitored by departmental heads/ Organizational head	0.291 <sup>a</sup>	5.795	0.000	0.310	0.971
2	CEO commits equipment for change	0.108 <sup>b</sup>	1.658	0.098	0.093	0.582
	CEO remains patient for change	0.197 <sup>b</sup>	3.597	0.000	0.199	0.795
	Effects of the change are monitored by departmental heads/ Organizational head	0.244 <sup>b</sup>	4.893	0.000	0.266	0.929
3	CEO remains patient for change	0.185 <sup>c</sup>	3.272	0.001	0.182	0.742
	Effects of the change are monitored by departmental heads/ Organizational head	0.236 <sup>c</sup>	4.656	0.000	0.254	0.898
4	Effects of the change are monitored by departmental heads/ Organizational head	0.208 <sup>d</sup>	4.010	0.000	0.221	0.847

- a Predictors in the Model: (Constant), CEO commits budget for change
- b Predictors in the Model: (Constant), CEO commits budget for change, CEO commits personal time for change
- c Predictors in the Model: (Constant), CEO commits budget for change, CEO commits personal time for change, CEO commits equipment for change
- d Predictors in the Model: (Constant), CEO commits budget for change, CEO commits personal time for change, CEO commits equipment for change, CEO remains patient for change

## APPENDIX IV

## Definition of Organizational Innovativeness Culture

The impact of structure and top-management is evident through the actions that are performed by the organization for achieving the objectives. Smith *et al.* (2005) has designed an instrument that specifically measures value innovation characteristics of the organization. The emphasis is not on what are the beliefs or values (*i.e.*, ‘why’ or ‘how’) rather on the translation of culture into organizational characteristics that help in innovation (*i.e.*, ‘what is’). The instrument has been tested for validity and reliability by its authors in organizations, therefore this instrument was used to collect data (Q. No. 1 to 33 Exhibit - I). The instrument for assessing an organization’s potential for value innovation has 9 factors, each with three or four items of attitudinal statements (Smith *et al.*, 2005). This instrument is well in line with the contingency variables as identified by Damanpour (1991). These characteristics as described by the authors for operational definitions are given below:

**Meaningful Work**

This is work that each person knows has impact on the organization and with customers. Employees work relationship with the over all work processes of the organization helps maintain a motivated environment (Chalofsky, 2003; Farris and Cordero, 2002; Hackman and Oldham, 1980).

**Risk-Taking Culture**

The organizational culture that sees taking some risk as an opportunity that potentially leads to higher returns. Organizational cultures that promote and encourage employees to take risk adds to value innovation (Cable *et al.*, 2000; Hamel, 2000; Chatman and Cha, 2003). The concept is translated to items comprising of innovation as cultural characteristic of the organization, encouragement to try new ideas, willingness to take risk, adaptability to new situations, and diversity of thought.

**Customer Orientation**

Identification of needs and wants of both established and potential markets, and delivering value products and services that satisfy these needs (Kim 1999). Organizations that keep its employees informed about customer needs and wants and encourage employees to think in terms of improving the customer satisfaction for the stated needs and wants are to have higher value innovation. The concept is translated to items including efforts to provide superior value to customers, re-examining target customers, and providing total customer solution.

**Agile Decision-Making**

The depth and breadth of ideas and analysis used, who is empowered to make decisions and how rapidly the decisions are made (Smith *et al.*, 2005). The items include extensive exploration of opportunities, informed decision-making at various levels, and involvement of employees in planning, and speed of response to external stimuli.

**Business Intelligence**

Organizational ability to comprehend the strategic issues by scanning the environment and understanding competitors for detecting market and business trends is called business intelligence (Smith *et al.*, 2005). The concept is inclusive of the items monitoring competitors, benchmarking, and responding to competition.

**Open Communication**

It includes speaking out, supporting change and challenging practices that supports value innovation (Christiansen, 2000; Lee, 2001; Black and Lynch, 2004). Being free to challenge status quo, feeling OK to disagree, openness to change are the items for measuring the variable.

**Empowerment**

Employees that independently identify and address problems are empowered (Spreitzer, 1996; Hesselbein and Somerville, 2002). When more employees with suitable work knowledge freely address work problems innovation capability of the organization increases. The concept includes encouragement for expressing work concerns, encouragement to address work problems, and organizational respect for employee's independence.

**Business Planning**

Processes and techniques are needed to ask and answer 'what if' questions when developing plans on how to develop value for business customers (Smith *et al.*, 2005). The concept is converted to items including scenario planning, simulation, risk estimates, and examination of broad value chain.

**Learning Organization Characteristics**

A learning organization is one in which employees share knowledge, especially about customers (Smith *et al.*, 2005). The concept carries using employee experience for product redesign, knowing how customers use the product and the similarities in customer usage of the product.