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READINESS FOR ORGANIZATIONAL CHANGE THROUGH DYNAMIC CAPABILITIES AND ROUTINIZATION: A STUDY OF THREE INDUSTRIAL ESTATES

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ABSTRACT

This empirical study investigates the Pakistani firms' dynamic capabilities and routinization in relation with China Pakistan Economic Corridor (CPEC). Three industrial estates were selected to predict this unescapable change. These industrial estates are Hattar, and Gadoon Amazai from KPK province, and Taxila from Punjab province, Pakistan. The proposed model is based on five variables: three variables of dynamic capabilities, one of routinization and the fifth for the Readiness of Organizational Change. This model is analysed through structural equation modelling technique with AMOS. CFA is conducted to test the adopted scales relevance with the model. Model fit indicators designates the standard statistics. Ten hypotheses were developed to test the suggested model, out of which seven hypotheses were accepted based on level of significances. The study finds that the firms under observation are ready for organizational change due to CPEC with reference to strategic capacities and routinization for strategic level. Routinization of the strategic level has positively mediated between strategic sense making capacity and readiness of organizational change; same is with another change implementation capacity and readiness for organizational change. However, routinization of the strategic level failed to mediate the relationship between timely decision-making capacity and readiness for organizational change.

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1. INTRODUCTION

Pakistan and China both countries have economic and two sided trade cooperation from many years, as trade routes are crucial for the trade and economic growth, for example silk route which connect the east and west from china to Europe via Mediterranean Sea (Abid & Ashfaq, 2015; Ahmed, 2019; Haider, 2005; Rehman et al., 2018; Ripa, 2019). China Pakistan economic corridor

(CPEC) is being considered a game changer for Asia, Middle East and Europe including Pakistan. For Pakistan, it is a collection of projects which are under construction with estimated cost of \$46 billion. It expands the Pakistani infrastructure through road, rail, pipelines and air transportation to enhance the economic links between Pakistan and China. It will also enhance the free exchange of growth, regional knowledge sharing, cultural activities, people to people contact and understanding via academic (Ministry of Planning, 2015). Pakistani officials expect 700,000 direct jobs between 2015 to 2030 from the result of this project and two to two point five percent increases in Pakistan's economic growth annually (Sial, 2014).

The study of dynamic capabilities adapts the new environmental requirements and to change the operations that has been taken in the debate on premeditated management (Teece, 2018; Di Stefano et al., 2010; Helfat & Peteraf, 2003; Zollo & Winter, 2002; Teece et al., 1997). Another consideration is that the ability of firm to build and integrate the external and internal competences in order to facing the rapid change in environments of the firms (Leonard-Barton, 1992). A growing numbers of scholars in the last decade have considered the dynamic capabilities as: "value creation, core firm strategy and competitive advantage (Lin et al., 2016; Eisenhardt & Martin, 2000; Helfat & Martin, 2015; Teece, 2007; Teece et al., 1997; Wohlgemuth & Wenzel, 2016)".

It is the fact that Chinese firms are more efficient than Pakistani firms, either at strategic or operational level (Di Stefano et al., 2010; Ahmed Sheikh & Wang, 2011). This study is to analyse the Pakistani firms which are the first major touch to CPEC. Are they ready for future change or not? The future change predicts via dynamic capabilities and routinization.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

2.1 STRATEGIC SENSE MAKING CAPACITY

Strategic Sense Making Capacity (SSMC) is defined as "it is a process which consist of scanning, action and then interpretation" (Thomas et al., 1993). Originally the authors introduced the concept of SSMC, established the linkage of these phases with sense making and to the performance of firms. Daft & Weick (1984) discussed about the three phases of learning, interpretation and the scanning which are connected via a responsive loop. The scanning, action and interpretation are not merely involved with the outer environment but it also considered the experiences which were enhanced via action. The feedback relationship exist in-between the action and interpretation which is also dependent on an interested question that what come first either sense making or the action.

Gioia & Chittipeddi (1991) suggested that change in strategy for a firm was possible only when sense making was interpreted as an initiator of action. Therefore, sense making is seemed to be a process of cognition, which take the information from internal learning and the external environment with purposeful action which ultimately lead to change. Also, their work introduced the concept of sense making which links the collective and individual level of cognition. Even though it cannot be said straightway that the solely domain of sense making is the collective or an individual action. It proposed that the intervention is required to relocate the initial sense making from an individual to a smaller and then to a larger network. Through this technique firm is capable of to implement the change. This perspective is focusing on that how inauguration of a purposeful action is taking place and why firms participate in the initial phase of strategic sense making which takes place in the

beginning. Sense making is a process in which organizations acts and interprets on information which consists on its environment (Pandza & Thorpe, 2009; Weick, 1995).

In the changing environment it is better to respond and to deploy the resources to enhance the ability of firms to configure in an effective way (Eisenhardt & Martin, 2000). Ravasi and Schultz (2006) analysed firm concentrated with sense making process as: It is the re-action to the exterior change which implied individual's engagement with the sense making to handle with the uncertainties and to resolve the causal uncertainty.

2.2 TIMELY DECISION MAKING CAPACITY (TDMC)

Timely decision making capacity' (TDMC) is defined as "It is the phenomenon which readily formulate, assess and select the strategic orientation for timely adjustment with the environment fluctuations" (Sharfman & Dean, 1997). For making decisions which should be aligned with the changing environment, organizations must build suitable and effective information system. This system may be comprised of tangible or intangible stuff, but it should assist the information technology for timely decision making. In fact, information technology provide an effective and efficient platform for making right and adequate decisions (Aydiner et al., 2019; Sher & Lee, 2004).

In the strategic process of decision making, firms should also quickly deal with different dilemmas to quickly adopt the remedies for the unsatisfactory situations. Eisenhardt (1989a, 1989b) conducted the research about the decision making speed and the availability of alternate decisions. It was found the results were positively related with the decision speed while the availability of alternative decisions boost the cognitive processing. It was also found that the presence of experienced analysts provided confidence to top management for speeding up the decisions and act quickly (Cvitanovic et al., 2016; Eisenhardt, 1989a, 1989b).

Timely decisions or faster decisions are made by the experienced boards rather than the inexperienced because the formers know a little bit more about their organizations and industries and can more quickly focus on the strategic issues because of their experience. Time is a precious element in which organizations regulate their decision making process. In practice, some organizations take too much time and others take very few time for timely decision making (Ariely & Zakay, 2001). But ultimately those firms have the advantage who consume less or moderate time for decision making.

2.3 CHANGE IMPLEMENTATION CAPACITY

Change Implementation Capacity' (CIC) is defined as "it is the capability to coordinate and making strategic decisions for bringing change in the firm. This activity involved various organizational and managerial processes which depends on the required tasks and objectives to be achieved" (Harreld et al., 2007; Helfat et al., 2009).

Change implementation capacity is front of the managerial as well as academic environment (Pettigrew, Woodman, & Cameron, 2001). The capacity to implement the change has been increased and provoked the thoughtfulness of management researchers as a number of articles has grown and published dramatically in recent years (Buchanan et al., 1999; Schreyögg & Noss, 2000). Though wider array of confusing, conflicting theories and approaches happen in the literature for change management and its implementation (Burnes, 2004; Cummings & Worley, 2009; Thames & Webster, 2009).

Doyle (2002) suggested that the current practice breaks the unrestricted assumptions regarding the organizational change with respect to its nature. Today organizations face the complexity, increase the stride and unpredictable about the change (Kerber & Buono, 2005; Miller, 2004). The diverse nature of internal or external factors prompted for change and force the organizations to change its way of doing day to day operations, structure, size or the shapes (Balogun & Hailey, 2008; Luecke, 2003). In order to succeed and survive in present contemporary and highly competitive business environment the change implementation capacity is crucial for the successful management (Lawrence et al., 2006).

2.4 ROUTINIZATION OF THE STRATEGIC LEVEL

Zollo and Winter (2002) defined the Routinization of the Strategic Level (RSL) as “The high level collection of routine/routines that utilizes the input flows with its implementation together. It convenes upon organizations management with certain set of options or decisions for obtaining significant outputs of a specific type”. Wohlgemuth and Wenzel (2016) suggested that for strategic level routinization has a significant and positive effect on readiness for organizational change and for dynamic capabilities which supports hypotheses of H4, H5 and H6. Zollo and Winter (2002) proposed in the literature that these routines are the stable patterns at the strategic level. The literature of routines reveals that the concept of routines previously fits into the theories of economic change and the theories of organizational change (Becker, 2004; Wohlgemuth & Wenzel, 2016).

2.5 READINESS FOR ORGANIZATIONAL CHANGE

Lewin (1947) explained Readiness for Organizational Change’ (ROC) as “an individual’s progression through change with the three stages of unfreezing, moving, and refreezing”. Via this pioneer idea of Lewin researchers have set to further elaborate the organizational change and contribute in the literature through these stages. Holt et al. (2007) proposed that: change is appropriate for the organization, and it is also beneficial to organizational members. Armenakis et al. (1993) proposed “that readiness was a precursor of resistance and adoption behaviours”. The readiness concept have been initially introduced by Jacobson (1957). The groundwork for readiness as it is a unique construct which embedded with the different theoretical models that describes the change (Van de Ven & Poole, 1995).

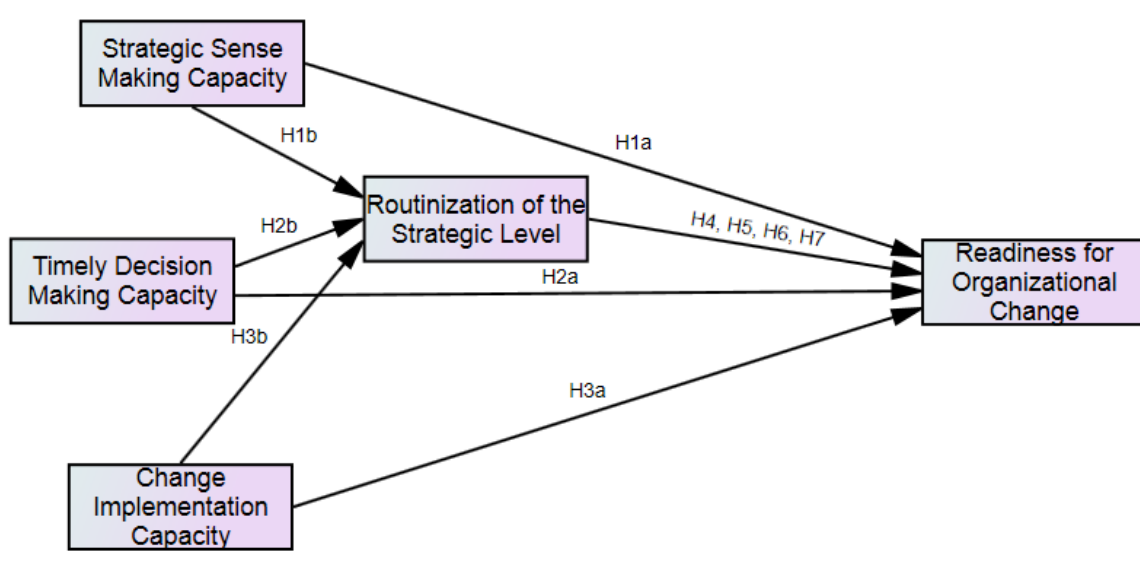


Figure 1: Hypothesized research model.

2.6 HYPOTHESES OF THIS STUDY

Hypothesis is the conjecture or an intelligent guess that usually involved in proposing a relationship among independent and dependent variables. It is a precise and testable statement that a researcher predicts for the outcome of the study (McLeod, 2018).

Following are the hypotheses of the study

H1a: Strategic Sense Making Capacity positively effects the Readiness for Organizational Change

H1b: Strategic Sense Making Capacity positively effects the Routinization of the Strategic Level

H2a: Timely Decision Making Capacity has positively affects the Readiness for Organizational Change

H2b: Timely Decision Making Capacity has positively effects the Routinization of the Strategic Level

H3a: Change Implementation Capacity has positively effects the Readiness for Organizational Change

H3b: Change Implementation Capacity has positively effects the Routinization of the Strategic Level

H4: Routinization of the Strategic Level has positively effects the Readiness for Organizational Change

H5: Routinization of the Strategic Level positively mediates between Strategic Sense Making Capacity and Readiness for Organizational Change

H6: Routinization of the Strategic Level positively mediates between Timely Decision Making Capacity and Readiness for Organizational Change

H7: Routinization of the Strategic Level positively mediates between Change Implementation Capacity and Readiness for Organizational Change

3. METHOD

The data for this study was accessed from Pakistani firms. To investigate and find out the readiness for organizational change through routinization and dynamic capabilities of the strategic level in the perspective of CPEC, three industrial estates were approached through a survey from the Gadoon Amazai, Hattar and the Taxila Industrial Estates. From 200 distributed questionnaires, researchers received 170 filled questionnaires. Out of these 170 responses, 2 questionnaires were discarded as found ineligible. Hence, the total response rate is 84%. The relationships among variables or their effects are measured and tested by structural regression modelling using SPSS and its extension of AMOS.

Convenience sampling was employed and self-administered questionnaires had been used as an instrument of the study. The questionnaires includes the demographical and proposed model constructs questions. All are close ended questions however respondents are given open ended area at the end to write anything they fell about the readiness for change due to CPEC.

Questionnaire consisted of three parts, one is descriptive in nature, second is Likert scale

questions which measure the constructs of the study while third is open ended section for respondents to give their own opinion on readiness for change due to CPEC. From first part, researchers observed the profile of the respondents, from second part the model of the study was tested while the third part was used for the future insight recommendations. The scale is adopted with minor changes as per environmental and cultural aspects. The construct are Strategic Sense-Making Capacity (SSMC), Timely Decision-Making Capacity (TDMC), Change Implementation Capacity (CIC) from (Li & Liu, 2014); Routinization of the Strategic Level RSL from (Wohlgemuth & Wenzel, 2016) and Readiness for Organizational Change (ROC) from (Cunningham et al., 2002).

4. DATA ANALYSIS AND ITS RESULTS

4.1 CONFIRMATORY FACTOR ANALYSIS (CFA)

Exploratory factor analysis was not applied as the scales used in this study are already used in other research works and have been found reliable in measuring the targeted constructs. Hence, confirmatory factor analysis (CFA) was preceded (Tabachnick & Fidell, 1996; 2007). There are five variables presented in the measurement model, SSMC, TDMC, CIC, RSL and Readiness for Organizational Change due to CPEC. In different studies researchers have been used the various fit indices for reporting the SEM i.e., structural equation modeling but currently researcher are using the CFI, CMIN, TLI and RMSEA as suggested by Schreiber et al. (2006). The fit indexes threshold is like this: CMIN/df (< 0.08 good), TLI (> 0.90 good), CFI (> 0.90 good) and RMSEA (< 3 good).

4.2 MEASUREMENT MODEL FOR CFA

In this study the measurement model consists of five variables which are: SSMC, TDMC, CIC, RSL and ROC. Thus, the CFA was measured altogether and the fit indices were spotted as per standard. Over all model of the study revealed the good fit indices as shown below in Table 1.

Table 1: Fit indices of Confirmatory Factor Analysis (CFA)

Study Model	RMSEA	TLI	CFI	CMIN/df
This study model consists of five indicators of SSMC, three of TDMC, four of CIC, two of RSL and six of ROC	0.051	0.903	0.910	2.083

Table 2: Standard Regression Weights:

Factor loading	Estimate	Factor loading	Estimate
SSMC5	SSMC .597	CIC2	CIC .881
SSMC4	SSMC .803	CIC1	CIC .874
SSMC3	SSMC .744	RSL2	RSL .726
SSMC2	SSMC .840	RSL1	RSL .767
SSMC1	SSMC .841	ROC6	ROC .810
TDMC3	TDMC .558	ROC5	ROC .895
TDMC2	TDMC .796	ROC4	ROC .850
TDMC1	TDMC .810	ROC3	ROC .780
CIC4	CIC .691	ROC2	ROC .650
CIC3	CIC .689	ROC1	ROC .650

Factor loadings of all items, factors and constructs were checked thoroughly. Kline (2011) suggested that the factor loading for standardized coefficients must be higher than > 0.50 . By following this suggestion, the study has found factor loading of all items more than .05 except the TDMC 4, which was already removed and CFA was conducted again to see the results. The

standardized factor loading or factor weights of the model is presented in Table 2.

4.3 RELIABILITY AND VALIDITY OF THE MEASUREMENT MODEL

Reliability and validity scales were assessed after conducting the confirmatory factor analysis. Researcher has used the composite reliability (CR), similar to Cronbach's α , and has got the standard values of the constructs which is more than 0.7. Convergent validity is assessed via average variance extracted (AVE), the standard value would be greater than 0.5. All the constructs have convergent validity in acceptable range. The discriminant validity of the model can be checked via the “maximum squared shared variance” denoted by (MSV). The discriminant validity occurs whenever the AVE’s value is higher than squared shared variance i-e, MSV. In this case all constructs have standard discriminant validities. The complete picture of results is presented in Table 3.

Table 3: Reliability and validity of the model

Variable	CR	AVE (Convergent Validity)	MSV (Discriminant Validity)
RSL	0.716	0.558	0.481
SSMC	0.851	0.655	0.407
TDMC	0.770	0.534	0.311
CIC	0.867	0.623	0.311
ROC	0.901	0.606	0.581

4.4 HYPOTHESES TESTING THROUGH STRUCTURAL REGRESSION MODEL

To test the hypotheses in multiple regression analysis majority of the previous studies used the structural equation modeling (SEM) and opted only for Confirmatory Factor Analysis (CFA) but this study used the structural regression (SR) technique to test all hypothesis while using SEM. As per Preacher & Hayes (2008), using SR models in the SEM has the advantage to test all the hypotheses simultaneously while the latter can only measure the hypotheses separately.

Through the using of 5000 bootstrap technique, authors applied the SR model for all the assumed relationships as shown in Figure 2. It is observed that SR model of this study had good fit indices for the observed which is evident in picture of the Model and fitness indexes of SR Model below in figure 3. The symbols e1, e2, ... , e23 are the error variable of each item of all five latent variables.

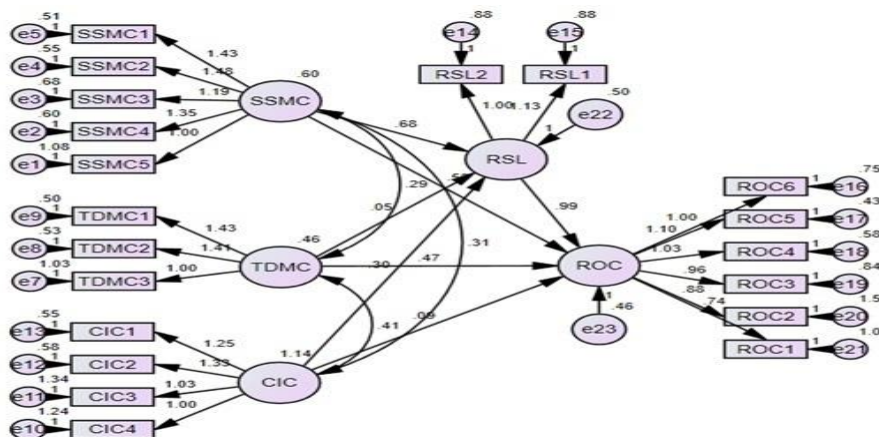


Figure 2: Structural Regression (SR) Model.

The results Table 4 demonstrated that strategic sense making capacity has effect on readiness for organizational change (ROC) where $\beta = 0.534$; S.E = 0.204 and $p = 0.009$. From this, it can be concluded that strategic sense making capacity has positive effect on Routinization. Therefore, H1a is

supported that Strategic Sense Making Capacity has positive effect on Readiness for Organizational Change. For routinization of the Strategic Level (RSL) where $\beta = 0.683$; S.E = 0.155 and $p = <0.001$, H1b is supported that Strategic Sense Making Capacity has positive effect on Routinization of the Strategic Level. The results in Table 4 also explicitly stated that timely decision making capacity has positive effect on readiness for organizational change for ROC where $\beta = 0.472$; S.E = 0.206 and $p = 0.022$. It has also positive effect for RSL where $\beta = 0.046$; S.E = 0.183 and $p = 0.803$. From this, it can be concluded that H2a is supported while H2b is not supported. Results also disclosed that Change Implementation Capacity has positive effect on readiness for organizational change (ROC) where $\beta = 0.086$; S.E = 0.117 and $p = 0.464$. While for Routinization of the Strategic Level change (RSL) $\beta = 0.302$; S.E = 0.101 and $p = 0.003$. Therefore, H3a and H3b both are supported. Further, the mediating variable Routinization of the Strategic Level change has positive effect on dependent variable readiness for organizational change where $\beta = 0.995$; S.E = 0.201 and $p = 0.000$. Therefore, H4 is also supported and it can be said that Routinization of the Strategic Level has positive effect on Readiness for Organizational Change due to CPEC.

Table 4: Results of Structural Regression (SR) Model

Variables	RSL			ROC		
	P.E	S.E	p-value	P.E	S.E	p-value
SSMC	.683	.155	<0.001	.534	.204	0.009
TDMC	.046	.183	0.803	.472	.206	0.022
CIC	.302	.101	0.003	.086	.117	0.464
RSL				.995	.201	<0.001
R ²		0.492			0.675	

Note: P.E = Standardized Point of Estimate (β), S.E = Standard Error, p-value = Probability or significance level, SS MC= Strategic Sense Making Capacity, TDMC = Timely Decision-Making Capacity, CIC= Change Implementation Capacity, RSL= Routinization of the Strategic Level, ROC = Readiness for Organizational Change

4.5 ROUTINIZATION OF THE STRATEGIC LEVEL AS AN UNDERLYING MEDIATION TOOL BETWEEN INDEPENDENT VARIABLES (SSMC, TDMC AND CIC) AND DEPENDENT VARIABLE (READINESS FOR ORGANIZATIONAL CHANGE)

Mediation mechanism was tested through AMOS software. It was hypothesized that the Routinization of the Strategic Level mediates between the independent variables (SSMC, TDMC and CIC) and dependent variable. Readiness for Organizational Change was tested with 5000 bootstrap samples. This is the appropriate methodology for calculating the explicit indirect effect of each mediator separately with the help of AMOS. Table 5 shows the results of analysis of mediation, using 5000 bootstraps, for measuring the indirect effects of strategic sense making capacity (SSMC), timely decision making capacity (TDMC) and Change Implementation Capacity (CIC) on readiness for organizational change via Routinization of the Strategic Level.

Hypothesis (H5) states that Routinization of the Strategic Level positively mediates between Strategic Sense Making Capacity and Readiness for Organizational Change. For this analysis, authors used SR model with 5000 bootstrapping' technique as suggested by (Preacher & Hayes, 2008). In table 5, the results showed that the Strategic Sense Making Capacity indirectly effect the Readiness for Organizational Change. This relationship is significant and support the hypothesis 5 ($\beta = 0.679$; S.E = 0.347; $p = 0.001$) which defines that Routinization of the Strategic Level is playing as a mediating role between Strategic Sense Making Capacity and Readiness for Organizational Change.

Additionally, the direct effect of Strategic Sense Making Capacity on Readiness for Organizational Change is insignificant which shows that Routinization of the Strategic Level is performing full mediating role. Hypothesis H6 stated that Routinization of the Strategic Level positively mediates between Timely Decision Making Capacity and Readiness for Organizational Change. For testing this, authors measured SR model with 5000 bootstrapping' sampling method as suggested by (Preacher & Hayes, 2008). In table 5, the results showed that the indirect effect of Timely Decision Making Capacity on Readiness for Organizational Change is not significant as per values of ($\beta = -0.045$; S.E = 0.27 and $p = 0.919$) which states that Routinization of the Strategic Level is not acting the mediating role between Timely Decision Making Capacity and Readiness for Organizational Change.

Table 5: Effects of SSMC, TDMC and CIC on ROC (Mediator: RSL)

	P.E	S.E	ROC		p-value	Result
			BC 95% CI Lower	Upper		
SSMC						
The Total Effect for path c	.145	.160	.193	.456	.374	
The Direct Effect for path c	.534	.352	1.376	.131	.006	Supported
The Indirect Effect via RSL for paths a & b	.679	.347	.278	1.431	.001	
TDMC						
The Total Effect for path c	.426	.288	-.127	1.000	.122	
The Direct Effect for path c	.472	.303	-.064	1.132	.080	Not Supported
The Indirect Effect via RSL for paths a & b	-.045	.273	-.580	.512	.919	
CIC						
The Total Effect for path c	.386	.141	.144	.710	.002	Supported
The Direct Effect for path c	.086	.165	.219	.410	.514	
The Indirect Effect via RSL for paths a & b	.301	.153	.057	.626	.016	

BC stands for Biased Corrected; CI stands for Confidence Intervals (for 5000 samples of bootstrap) and P.E. stands for Point of Estimate for level of significance of $p < 0.05$

The last hypothesis H7 states that Routinization of the Strategic Level positively mediates between Change Implementation Capacity and Readiness for Organizational Change. To test for this assumption authors again used structural regression i.e., SR model with 5000 bootstrapping sampling method as per suggestion of Preacher & Hayes (2008). The results in Table 5 showed the indirect effect of Change Implementation Capacity on Readiness for Organizational Change is significant as per values of ($\beta = 0.301$; S.E = 0.153 and $p = 0.016$). It states that Routinization of the Strategic Level is acting the mediating role between Change Implementation Capacity and Readiness for Organizational Change. Therefore, study hypothesis H7 is also supported. Furthermore, the direct effect of Change Implementation Capacity on Readiness for Organizational Change is insignificant which shows that Routinization of the Strategic Level is performing full mediating role.

5. CONCLUSION

China Pak Economic Corridor is considered as the game changer for the region. However, there are some sceptic arguments specially related to native industry. This triggered the attention to get it confirmed from the Pakistani industry about their readiness for organizational due to CPEC. The

readiness for organizational change could be confirmed through the organizational capabilities and routinization. Same has been researched and a theoretical model is created after thorough literature review. With the support of previous research and considering the problem at hand researchers had developed hypothesis which could disclose the Pakistani industry readiness for organizational change. Industry was asked to provide the response on the prepared instrument that was through questionnaire. The questionnaire was prepared to collect the descriptive and scaled data. Scales are adopted from previous studies and have been modified as per local context and research problem.

Collected data was analysed through multivariate tests. Apart from descriptive statistics, researchers had used the confirmatory factor analysis and structural equational modelling to test the hypothesis and the model as a whole. The software used for data analysis was AMOS.

There were seven hypothesis and hypothesis one, two and three were divided in two sub hypothesis a & b by considering the paths of SEM. The total number of hypothesis in research were ten, three are not supported while seven are supported. Out of three mediations two are supported while the mediating effect of RSL between CIC and ROC is not supported.

Referring the model fitness and SEM relationship results, it can be claimed that Pakistani firms are ready for organizational change due to CPEC. There is positive relationship between SSMC with RSL and ROC and CIC with RSL. However, there is lack of timely decision making capacity and CIC effect on ROC which needs to be improved.

This research work has contributed in the literature as the theoretical relations are tested with mediating effect for the first time. The study also provided the practical implications which are related with the burning issue of CPEC and local business concerns. Although, there needs to be further studies which could bring the more depth analysis about the firms' readiness for organizational change due to CPEC, however, this research can be used by the policy makers as first step to understand the firms' behaviour to forthcoming change.

6. AVAILABILITY OF DATA AND MATERIAL

The data used or generated from this study is available upon request to the corresponding author.

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