



Effect of Organizational Culture and Information Technology Capabilities on Innovation Capabilities: A Case of Manufacturing Firms

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ABSTRACT- This study's main objective was to identify how Organizational culture, Information Technology capabilities, and Innovation capabilities are linked. In the manufacturing industry, manufacturing firms play a vital role in developing and progressing any country's economy. The research's primary purpose is to examine the relationship between Organizational culture, I.T capabilities, and Innovation capabilities. This study proposes new research directions and hypotheses development to examine the relationship among Pakistan's manufacturing sector variables.

Key words: Organizational culture, I.T capabilities, Innovation capabilities, and Manufacturing firms.

I. INTRODUCTION

The manufacturing industry is one of the economic sectors which offers multidimensional activities of various subsectors in Pakistan. Additionally, these industries bring various additional values and impact Pakistan's economic growth, such as by increasing the job opportunities and export activities (Arshad & Arshad, 2019). This sector is most vulnerable to government policies, infrastructure, trade agreements, workforce and R&D activities, innovations, and energy supply access. The manufacturing sectors include various industries ranging from textiles to agro-based industry, engineering goods, electrical goods and electronics, chemicals, and small and medium enterprises (Khan, Hassan, Arshad, Kashif, Aslam & Wafa, 2020). Surprisingly, since the last decade, these industries have experienced low-performance growth.

Today, almost all organizations face a dynamic environment characterized by rapid technological change, shortening product life cycles, and globalization. Organizations need to be more creative and innovative than before to survive, compete, grow, and lead (Rengarajan, Moser, & Narayanamurthy, 2021). Pakistani manufacturing sector has a crucial role in the gross domestic products (GDP) of the country. Over the period, it has placed in the second rank to support the national economy and contributes more than 33% to GDP (Abbasi, Abbas, Mahmood, & Tufail, 2021). This sector is not spared by the challenges and effects of sustainable, competitive advantages and low innovation levels (Arshad & Arshad, 2019). In this context, it suffers more than other sectors in terms of innovation capabilities. Manufacturing investment commitment to innovation may not produce valuable outcomes unless firms know how internal and external factors are related to organizational innovation capability (Ali, Jun, Hussain, Khan, Younas, & Jamil, 2021). Furthermore, the innovation composite index 2019- 2020 cited that Pakistan manufacturing had a lower image of innovation capabilities and got only 32.6.

The failure of the Pakistani manufacturing system and the weak contribution to the overall growth of the economy can be fully attributed to many reasons, according to (Abbasi, Abbas, Mahmood, & Tufail, 2021):

1. The lack of the innovation drivers adopted by the manufacturing system,
2. Poor manufacturing culture among customers coupled with poor quality of the products provided by the Iraqi manufacturing, and
3. The lack of the ITC to enhance coordination capability within the firm's innovation capabilities through suitable organizational culture.

In today's business environment, information technology capability (ITC) plays an active role in creating a competitive advantage for companies (Lam, Nguyen, Le & Tran, 2021). Information technologies (ITC) have had a significant impact on organizations in several different ways. Researchers have studied the impacts of ITC on different dimensions of business and have established ITC as a strategic factor in organizations (Lam, Nguyen, Le & Tran, 2021; Li & Chan, 2019; Arora, & Rahman, 2017). Many researchers have investigated innovation in the organization by adopting the role of ITC in the innovation capabilities of a firm (Li & Chan, 2019; Arora, & Rahman, 2017). The Resource-Based View of the firm (Peteraf, M. A. 1993) has influenced a lot of extant research on the business value of ITC. Earlier, ITC was treated as a resource that created significant differences between firms. However, more recently, the researchers have shifted focus towards capabilities. ITC is viewed as an artifact that enables the development of strategic capabilities, its competitive response, and its ability to effect desirable changes at the operational and enterprise-level (Barney, J. B. 2001).

II. LITERATURE REVIEW

Organizational culture and innovations capability

Llopis Taverner (1992) defined organizational culture as a set of values, symbols, and rituals shared by the members of a specific firm, describing how things are done within an organization when solving internal managerial problems, together with those related to customers, suppliers, and environment.

In organizational studies, organizational culture is important as a vehicle for implementing organizational change (Schein, 1990). Although not all organizational change involves innovation, Schein, E. H. (1990) asserted that all organizational innovation involves change which ultimately is supported or hindered by organizational culture. Various studies have acknowledged a relationship between organizational culture and organizational innovation (Uzkurt, Kumar, R., Kimzan, H. S., & Eminoğlu, 2013; Obendhain, & Johnson, 2004).

As the researcher has already said in this research, there may be many ways to innovate, technology being one of them, and defining the general conditions of an organizational culture based on technology. Fons-Boronat (1992) shall be quoted or a basic difference between technics and technology. Technics means the method, procedure, and equipment used in any productive or administrative process; of course, such a process (be it productive or administrative) requires a certain degree of skill and art. The knowledge of these skills, art, methods, and procedure is technology, and it would constitute a body of knowledge about technics (Çakar, & Ertürk, 2010).

There is a consensus that organizational culture is critical in any change initiative, no such consensus exists as to what type of organizational culture best supports business transformation and innovativeness (Hernández-Mogollon, R., Cepeda-Carrión, G., Cegarra-Navarro, J. G., & Leal-Millán, A. 2010). A lack of empirical investigations into the organizational culture on various aspects of innovativeness is still noted. Only a few studies have tackled.

Information technology capabilities and Innovation capabilities

Despite progress in understanding the innovation process in firms and the various impacts of information technology capability, there is limited understanding about the role of information technology capability and its impact on the firm's innovation process (Mikalef, Boura, Lekakos, & Krogstie, (2019). The literature on innovation in marketing has addressed information technology capability in many different ways. Overall, two different themes seem to emerge from the literature on the role of Information technology in firms' innovation capability (Adamides, E., & Karacapilidis, N. 2020).

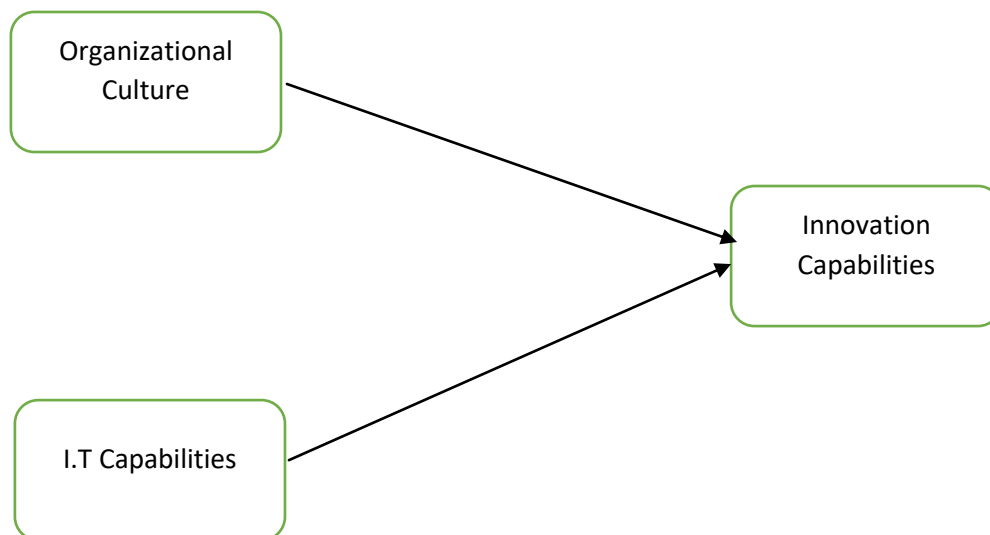
While some studies show that ITC has helped automate tasks and improve the efficiency of many steps in the new product development process, other studies show information technology capability as a deterrent in the product innovation process (Breznik, L., & Hisrich, R. D. 2014). Some studies show information technology capability as a process in which information is well integrated and acts a good collaboration enabler between various firms, thereby enabling innovation. On the other hand, some studies find that ITC brought about volatility in the environment due to frequent changes and thereby disturbing the routines of innovation in an organization, and ITC has a positive relationship with innovation capabilities (Breznik, L., & Hisrich, R. D. 2014; Lau, A. K., Yam, R. C., & Tang, E. P. 2010).

The effective use of scheduling and time management functionalities makes managers more capable of appointing workers to relevant tasks and enables them to better monitor workers' performance (Prajogo & Sohal, 2003). By providing real-time information on project status and enabling aggregate project portfolios, the workflow capabilities can help work units become more capable in identifying synergies among their resources and tasks, better synchronizing their activities, and executing their collective activities in parallel (Sethi, Smith & Park 2001). Thus, IT capabilities can enhance coordination capability within the innovation capabilities of the firm.

III. THEORETICAL MODEL

In contrast, the RBV perspective highlights the need for a fit between the external market context in which a company operates and its internal capabilities. In contrast to the Input-Output Model, the RBV is grounded in the perspective that a firm's internal environment, in terms of its resources and capabilities, is more critical to the determination of strategic action than is the external environment. Instead of focusing on the accumulation of resources necessary to implement the strategy dictated by conditions and constraints in the external environment, the RBV suggests that a firm's unique resources and capabilities

Resources are inputs into a firm's production process, such as organizational culture, capital, equipment, information technology, individual employees, patents, finance, and talented managers. Resources are either tangible or intangible. With increasing effectiveness, the set of resources available to the firm tends to become larger (Alvarez, & Busenitz, 2001)



IV. THEORETICAL MODEL

RESEARCH PROPOSITION

Based on the above theoretical model and literature review. Following research proposition are proposed:

H1: There is a significant relationship between Organizational Culture and Innovation capabilities.

H2: There is a significant relationship between I.T capabilities and Innovation capabilities.

METHODOLOGY

Measurements

In this study, the measurements for testing the research model will be adopted from previous studies for the correct validation and reliability.

Questionnaire Design

The questionnaire is divided into two sections. The first section of the questionnaire contains the demographic profile of the respondent. The second section has been assigned to each investigated variable; the endogenous (dependent) Innovation capabilities, while the exogenous (independent) variables are organizational culture and I.T capabilities. In the questionnaire, the respondents were being asked to mark their option as a check in the box provided in front of every question and fill it with great care. Each box in front of every question is devising a Seven Likert scale. Every box of Likert scale has a degree of agreement option from one to seven.

Sample and Data Collection Instrument

The population of the current study was all the manufacturing firms operating in Pakistan. For the present study, both public and private banks were included in the data collection phase. Almost 498 listed manufacturing companies are operating in Pakistan. The online survey technique will be utilized.

V. CONCLUSION

This study highlighted the issues related to the manufacturing sector of Pakistan. Manufacturing firms are considered the backbone for the progress and growth of the economy of the country. Pakistan is a developing country facing economic uncertainty, and due to the high population, unemployment rates are increasing. The manufacturing sector is considered a significant source of driving the economy and creating employment opportunities in the country. A review of prior literature indicates that two organizational capabilities, i.e., organizational culture and I.T capabilities, significantly affect the Innovation capabilities. This conceptual paper employs the RBV theory to support this framework. Future research should empirically test to what extent and how Organizational culture and I.T capabilities are related and impacting Innovation capabilities of the manufacturing firms in the emerging economy like Pakistan. If the framework is empirically validated, the finding will offer an essential insight to academics, policymakers, and practitioners into the significant effect of Organizational culture, I.T capabilities, and Innovation capabilities of manufacturing firms in Pakistan.

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