

## **Role of Human Resource Competencies in Leveraging the Innovativeness of a Software Enterprise**

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### **Abstract**

This research is concerned with the sustainable performance of Indian Software firms and the role of firms' innovativeness, which is nourished by the HR competencies of workplace of the firms. The factors that influence the competence development efforts of the firm and thereby foster its innovativeness and were adopted for this study are the human resource practices, organizational commitment, organizational citizen behavior, communities of practices and risk orientation. We have discussed relationships between innovation capability and growth of firms also. Human Resource Practices of a software entrepreneurial firm are positively associated with its innovation capability. In order to make a significant contribution to the enhancement and up gradation of competence levels of the employees, the firm should foster an appropriate balance of both formal and informal means of learning. And the most crucial aspect is that the HR practices should be so designed to ensure that this aggregation of competencies is built in such a manner that it provides a synergistic effect to the competencies of software SME'S discussed in it. The basic premise for the selection of methodology of research in this paper is qualitative research method.

### **1. Introduction**

According to the present scenario Indian software firms are growing gradually with the effect of human resource competencies and updated innovation technology. Due to the monopolistic power public sector undertakings exercise, they continue to provide services without taking cognizance of the intense worldwide competitive scenario and the need for innovation it manifests. Employees are also reluctant to perform innovatively due to poor reward and incentive systems because the success recipe for the organization is to focus on a creative and

innovative workforce (Preiss and Spooner, 2003). Since the last few years, the requirement for innovation has increased in the state-owned organizations around the world. Public organizations are expected to perform as efficiently and effectively as just private organizations. In this milieu, governments are trying to devise strategies to augment innovation within organizations by adding skilled employees to their payroll, improving operating systems, or selling traditional infrastructure and properties. Innovation has assumed primacy in public and private organizations. Since, it is evident that the traditional methods to operate the organization are less effective in the motivation and development of employees' creativity, which contributes to the modern age characterized by quick transformations and unpredictability. The firms need to adapt and transform their mode of operation to perform effectively. In the globalization era, to compete and sustain in the long run, a business establishment must be ingenious and encourage the culture of creative potential and by utilizing the competency of human resources (Waheed A., Miao X., Waheed S., Ahmad N., & Majeed A., 2019). And in this business of uncertainty, risk, and volatility, creativity forms an important function towards providing leverage for organizations. Many researchers have proposed that creativity and innovation make a critical contribution to organizational effectiveness for the long-term survival of organizations, because it empowers and facilitates organizations to remain competitive in a rapidly changing environment and achieve a competitive advantage (Werner H. C., 2017). Hence, promoting and developing creativity is a strategic choice that every successful organization has to undertake. And in an organizational setup, it's the HR system that plays a critical role in assisting and communicating the objectives of creativity and innovation to the human resources and the means to accomplish the organizational goals (Panigrahy P.N., Pradhan K. R., 2015). Therefore, through this paper, has made an effort to convey about the novel issues relating to the multifarious factors and practices of HR system that promotes the cultures and milieu for fostering creativity and innovation among the employees. The paper is structured as follows. The next section examines the role of human resource competencies towards creativity and innovation.

## **2. Review of Literature**

### **2.1 Human Resource Competency (organizational commitment, organizational citizenship behavior & communities of practice)**

The research literature suggests that certain attributes, which are behavioral outcomes of human resource practices, also influence the innovation capacity of a firm. One of the behavioral outcomes of HR practices that are being considered for this study is Organizational Commitment, which is related to the attachment of professionals to the firm. It has been described that there are three factors of Organizational Commitment viz., affective Commitment (sense of belongingness), Continuance Commitment (based on cost-benefit analysis for staying with the firm), and Normative Commitment (based on moral grounds). It is believed that a professional having a sense of belongingness for a firm would be able to deliver a better performance. There is a strong likelihood that such individuals will be able to enhance the innovativeness of the firm. Another behavioral outcome of HR practices and also of Organizational Commitment associated with employees' extra-role behavior beyond their formal role requirements is Organizational Citizenship Behavior (OCB). The research literature reveals that there are two types of Organizational Citizenship Behaviors, one directed at individuals which is associated with helping co-workers and new entrants, and the second directed at organizations. Professionals who indulge in OCB directed at organizations value being a part of such a set-up and would go out of the way to contribute to activities that contribute to the firm's competitive performance. As software development is performed by teams it is obvious that there would be OCB directed at teams. Such behavior of professionals in a firm assists in overcoming the hurdles of delivering outcomes on time and of the desired quality. Further, as software development is innovative, all three forms of OCB enhance the firm's innovative capability. This study suggests that HR practices of a firm contribute to create an environment for learning by formal and informal means. The HR practices of a firm through their training and development activities address the formal means of learning. At the same time there are inherent need to utilize informal interactions among professionals for learning purposes. Firms have realized the benefits of these Communities of Practices as knowledge has become a key factor of

production and managing knowledge has emerged as the most critical aspect of business (Wenger, McDermott and Snyder 2001). As it is about a shared interest of a topic or subject, it has members across firms and boundaries of the industry as well. In this context, companies' success depends on their competence and innovative capability (Henderson & Clark, 1990; Liberman & Montgomery, 1998; Schumpeter, 1934, Schumpeter, 1942; Tushman & Nadler, 1986; Utterback, 1994, 1994). Many researches and literature also emphasized the key role of Human Resources (HR) and practices of Human Resources Management (HRM) which can play in such competitive environments in enhancing firm's competitiveness advantage (Lado & Wilson 1994; Wright, McMahan & Mc Williams 1994; Becker & Gerhart 1996). Focusing on employees' skills and knowledge and behaviors can be sources of competitive advantage. Past literature suggests there has been a lot of discussion in recent years concerning competency-based human resource systems. According to research managers, competencies constitute are harbingers of success in work; it is in their interest to know, how to ensure that a majority of the employees will expand their competencies to the maximum. While the common conclusion is that competency-based strategies have considerable potential value. It is also recognized that variegated organizations have assisted an individual to achieve what he can do rather than what the person knows. It is based on visible behavior and not espoused behavior. (Cerinšek. G., & Dolinšek. S., 2009). Further when people can experience meaning in the work they do, they are most likely to display positive organizational behavior which is related to the application of positively oriented human resource strengths and capacities which can be developed and effectively managed in the workplace.

## **2.2 Creativity & Innovation**

Creativity is the ideation and generating of new ideas, and innovation is the effect it has in an organization or society (Cheng C., Cao L., Zhong H., He Y. & Qian J., 2019). Until there's a visible effect innovation doesn't really exist. It just remains a brilliant idea. So, creativity is the ideation and innovation is the execution (Sharp. R., 2018). It is a well-established fact that innovation assists the organization to obtain a competitive edge in today's tumultuous

business environment. Of course, it's easier said than done. Zhao (2006, p.106) explains that "almost every company talks about the importance of innovation and many are doing it. But only a few companies actually succeed in doing it." It is undeniable that when we are talking about innovation, we are talking about change (Tidd, 2000) and this change has to increase value (customer/producer/economic/social value). Green Paper on Innovation (1995), 2 published by the European Commission, December defines innovation as the "successful production, assimilation and exploitation of novelty in the economic and social spheres". The general view in the literature describes innovation as that phenomenon that builds value, strengthens competitive advantage, and improves organizational sustainability (Sundbo, 1998; Tidd, 2001). In this paper, innovation, which refers to the time elapsed from initial spawning of an idea to commercialization, is considered as the barometer of innovation performance due to its integration of the notions of staff-related creativity and organizational structural innovation.

Martin (2000) proposed that while creativity can be considered as the generation of a new useful idea for products services and procedures by individuals or groups in a specific organizational context, innovation may be regarded as the implementation of a new and possibly-solving idea, practice or material artifact which is considered as new by the relevant unit of adoption and through which a change is brought about. Researchers suggested that innovators do not involve in creative ventures merely for the sake of creation, but the purpose behind their endeavors is to solve problems (Root-Bernstein, 1989). Creativity is defined as creating new and effective ideas, but researchers consider it as a process (Gholami K., & Karimi R, 2014). Creativity is a concept that may often be confused with innovation. Creativity is the first step within the innovation process. The same concept has also been suggested by Amabile (1996), who claims that creativity is the beginning of innovation; the first is a necessary but not sufficient condition for the second. As propounded by Kinder (O'Reilly, 1997), a good creative idea is fragile like a lightened match, easily blown out by cold winds (lack of motivation, self-confidence or ambitiousness; improper organizational structure, etc.). Studies focusing an organizational aspects of creativity and

innovation examining the organizational characteristics and their impact on innovation were conducted by numerous scholars. It was argued, “Even when individuals have developed the capacity for innovation, their willingness to undertake productive efforts may be conditioned by beliefs concerning the consequences of such actions in a given environment” (Mumford & Gustafson, 1988). However the research literature provides no evidence of any study on likely implications of the human competence for innovative behavior of individuals, the innovative behavior being defined as “all individual actions directed as generation, introduction and/or application of beneficial novelty (i.e., innovation) at any organization level (Kleysen & Street 2001; West & Farr, 1989). Thus, it may also be explained that the innovation process consists of two phases, generation of innovation and adoption of innovation (Gopalkrishanan & Damanpour, 1997). Generation phase include idea creation and problem-solving for product and process solution and the adoption phase is associated with the acquisition and implementation of an innovation. The creativity which concerns the ideation component of innovation envelops the process leading to the generation of novel and cherished ideas and the innovation which relates to individual or organizational endeavors for achieving the desired novelty essentially encompasses both creativity and innovation implementation (Panigrahy P., N., Pradhan K. R., 2015). Thus, in the context of our present research it is desirable to study the possible contribution of the human resource competencies on individual and organizational innovativeness through qualitative research based on case studies of Indian software firms.

### **3. Research Propositions**

Thus, keeping in view, the conclusions of the review of the research literature discussed earlier. The following research propositions are being proposed for validation through the case studies.

1. To study the role of human resource competencies in a small enterprise.
2. To study the effect of human resource competencies on innovativeness of workforce in a firm of Indian software sector.

## **4. The Case-Studies**

### **4.1 Methodology adopted**

The study utilized the technique of conducting semi-structured interviews with the senior executives of the firms. Two SME firms with consistent good performance during the last five years and their operations spread over several countries were selected for conducting the case studies. Semi-structured interviews were conducted with the senior management executives of these firms. All interviews were recorded, transcripts were prepared and analyzed. Those transcripts were reviewed by two senior academicians of national management institutes and their suggestions were duly incorporated. The next section provides a brief description of case studies.

#### **4.1.1 Company details**

##### **Company A**

This company was established in 1999 by two ex-employees of TATA consultancy services. Tata consultancy services is a part of one of the most prestigious business houses of the country and is one of India's largest software consulting firm. Two professionals started this firm one is a technical expert and the other is a trained chartered accountant with experience in developing software for the financial sector. The firm is ISO 9001 certified and has strategic relationships with firms in Switzerland and Italy and one of the large Indian firms. It has a workforce of about 80 people of whom 75 percent are certified sun/IBM/Microsoft professionals. About 90 percent have the experience of working abroad with qualifications ranging from graduates in Engineering to postgraduates in Engineering or Computer Sciences.

##### **The Findings of Case Studies**

'Software SME'S do not have the option of growing in number of employees, as it calls for a firm to have deep pockets and plenty of leads to engage the workforce. The only option SME'S have is to remain focused in a niche area and move up the value chain by developing high level of expertise. In case an SME wants to change or add an area of application it needs to have domain expertise of some significant level to enter that area or else the effort may prove to be futile'. "Organizational commitment, organizational citizen

behavior, Risk Orientation is no doubt an essential attribute of all successful individuals. It provides support to an individual's integrated thinking process and transforming a creative idea into a novel product or process".

1. Our interactions thus reveal that 'human resource competencies' have a positive impact on the workforce that enhances their potential for creativity and innovation. It unequivocally validates our research propositions P1 stating: To study the role of human resource competencies in a small enterprise. The CEO of company B was optimistic that "Small software firm can switch to a different area of application (domain), only if it has the knowledge of that domain and further it can bear the risk of failure".

**Note:** These companies have strategic partnership with companies across the globe. Further company A has strategic partnership with a large Indian Software firm for handling competence-based work. This augments the learning and competence enhancement of professionals that they get from interacting with clients.

### **Company B**

Based at Jaipur, the capital of the northwestern state of Rajasthan in India. This firm was established in 1999. It has a strong export-orientation and serves certain domestic clients as well. This firm is led by executives who have over 15 years of experience in the software industry. The firm employs about 70 professionals. The majority of them are graduates and postgraduates in engineering with a small number being Science or Commerce graduates having specialized training in various functional areas and technologies.

Initially the firm started by performing low-value work like maintenance and programming and in two years' they have moved one step on the software value chain. They successfully completed the project implementation assignments. The firm has adopted and put use the Microsoft.net technology. They have a number of projects on this technology. The firm has a few products also. The expertise of the firm lies in project implementation, legacy system up-gradation, software solution development, etc. They also work in jewelry design and have developed software for the same. The company has obtained the ISO 9001 certification for its design and development activities.



Our next question was thus focused on the likely role of human resource competency in enhancing individual and firm's innovativeness. The CEO of Company A was of the opinion that 'Software SME's cannot grow through number of employees with ease; it has a lot of risk associated with it. The best option is to identify a niche area, develop competence in that and grow by moving up the value chain.'

'Let me say that if there was anything which has helped us to survive and excel during the present decade which has been the most difficult period for business in software sector due to global recession, it was the continuous flow of our innovative products, ensured by our creative work force'.

'A small software firm can switch to a different area of application (domain) only if it has knowledge of that domain and further it can bear the risk of failure and self-efficacy'.

1. Our interactions thus reveal that 'human competency' has a positive effect on the workforce that enhances their potential for creativity and innovation. It unequivocally validates our research propositions **P2 stating:** To study the effect of human resource competencies on innovativeness of workforce in a firm of Indian software sector.

## 5. Conclusions

The individuals and organizational innovativeness are inter-related constructs fostering each other. The creative potential of an individual at the workplace is a crucial parameter determining the firm's innovation capability. Life imposes so many challenges upon us. When a person due to some existential necessity or an inner urge involves himself in solving the riddles of what is yet unsolved and in the process is able to connect certain unrelated ideas it leads to creativity and innovation. This essentially requires that an individual at the workplace feels capable and empowered to conduct new experiments.

- There are certain human competencies that are positively associated with firm's innovation supportive climate such as organizational commitment, organizational citizenship behavior, communities of practice, experiences, cross-functional interactions, risk orientation, operational autonomy and participation in the decision-making

process which play an important role in providing motivation and empowerment to individuals at the workplace.

- Human resources competencies i.e., organizational commitment, organizational citizenship behavior, communities of practice self-efficacy act positively on individuals' innovation capabilities. It may however be emphasized that these constructs are intrinsically connected with each other.

## **6. Limitations & Suggestions for Further Research**

The present researcher is not aware of any formal study being conducted on understanding the role of 'Human resources competencies' for enhancing the individual and organizational creativity and innovation, and no evidence is available for comparing the finding of the present research. It is thus suggested:

- The study may also be conducted in the context of other sectors of industry to acquire a comprehensive understanding regarding the initiation, development, and implementation of the innovation.
- Research is also recommended for developing an appropriate 'competence' training technique for strengthening the individuals' innovations potential. Such a technique may take into consideration the various techniques adopted to enhance the various psychological constructs viz., self-efficiency, hope, optimism, and resilience of individuals at the workplace. A system for figuring out the implications of these techniques on individual personality factors may also be developed through appropriate research.

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