Citations Review Analysis of Human Resources Innovation Capabilities

Benu Chaudhry
Research Scholar, School of Management
OPJS University, Churu, Rajasthan, India

Dr. Pawan Kumar Verma
School of Management
OPJS University, Churu, Rajasthan, India

Abstract: **In today competitive business environment, Human Resources Innovation Capabilities are also the most important capabilities for an organization to growth and explore. If an organization have the innovation capabilities on the context of HRM that organization can survive well. Every business is facing challenges because of speedy development of Information technology and its envelopment in the business therefore for survival, a holistic innovation capabilities are required for an organization. Holistic innovation capabilities in term of technology, Human resources, marketing flexibility etc. The objective of this is to do an extensive review analysis of Human Recourses Innovation's Capabilities. After doing literature review, the authors found out that few studies are available which are related to Human Recourses Innovation's Capabilities and very less attention has been given by researchers in this context, therefore, the main aim of this study to do citations review analysis of all studies related to Human Recourses Innovation's Capabilities and also found out the gaps for the future research.**

Keywords**: Human Recourses Innovation's Capability, Citation Analysis, competitive business environment, Information technology.**

I. INTRODUCTION

In today competitive business environment, Human resources innovation capabilities are also the most important capabilities for an organization to growth and explore. But in the literature very less attention has been given by the researchers. If an organization have the innovation capabilities on the context of HRM that organization can survive well. Every business is facing challenges because of speedy development of Information technology and its envelopment in the business therefore for survival, a holistic innovation capabilities are required for an organization. Holistic innovation capabilities in term of technology, Human resources, marketing flexibility etc. A large number of publications examine the role of human resources (HR) and their links to innovation and performance such as: In the year of 1994, Wolfe talked about the changing external environment very fast and suggested that every organization must focus on innovation without innovation an organization cannot survive and every organization looks after their innovation strategy again so that they can fight their competitors well.

Damanpour and Gopalakrishnan (1998) talked about the adoption of behavior of coming generation and suggested to focus innovative behavior if the organization want to survive they must focus changing life style of human being and how an organization will use their adoption strategy is the most important thing for business. In the year of 1995, Jackson and Schuler and in the year of 1998, Katz and Kahn expressed that HRM must be determined and ready to adopt any type of flexibilities in the context of knowledge management. Management innovation is required for an organization to grow but how we will get management innovation that is also very crucial question for an organization. In management innovation education plays very important role. If an organization will focus more on education then they can develop well and try to change for any change. Lev and Zarowin (1999) examined the role of human capabilities and skills on the innovation performance of real estate firms. They found out the impact of human capabilities and skills on firm's growth is positive and progressive direction therefore real estate firms must focus on these skills to enhance their image among their competitors.

Leitner (2011) said that in the literature, human capabilities and skills both are widely used by the researchers and they have positive relationship therefore human capital and innovation must be updated according to need of the organization and their requirements. If necessary some restructure system must be implement so that the performance and external branding of the organization will improve. Johnson et al. (1996) examined three issues: first was the pervasiveness of technology use and the impact of technology use on performance in the Canadian manufacturing sector. The use of advanced technologies, particularly labor-enhancing ones, is found to be widespread. A strong connection between technology adoption and superior performance was also found. The second section examined the relationship between technology adoption and training in manufacturing firms. Firms using either labor-saving or labor-enhancing technologies are found to be more likely to train. The third section expanded this analysis to examine how innovation-related strategies and activities are related to training. Innovation is found to be a key driver behind training in all sectors.

II. LITERATURE REVIEW

According to Damanpour and Gopalakrishnan (1998) innovation implies the adoption of an "idea or behaviour which is new for the organisation". Regardless of the kind of innovation the firm develops, it needs some conditions for its successful development. Among others, the literature highlights strategy, organisational design, management style and human resource management (HRM) as the determining factors in the firm's innovative behaviour.

Considering that HRM determines and modifies, to a large extent, these aptitudes, capacities and attitudes, it seems clear that it becomes a crucial element in the development of innovation activities. Theoretical approaches such as the behavioural approach (Jackson and Schuler, 1995; Katz and Kahn, 1978) and, more recently, the knowledge management approach (Darroch and McNaugton, 2002; Forrester, 2000; Hedlund, 1994; Leonard-Barton and Sensiper, 1998; Nonaka and Takeuchi, 1995) also provide arguments to defend the importance of HRM for innovation. However, human resource management has been, up to now, scarcely treated in studies on innovation in the firm (Laursen and Foss, 2003). Furthermore, although there have been some empirical studies in recent years, their conclusions are heterogeneous and most of them have focused on US firms.

They find that management innovation increases when companies have more employees with university degrees. Moreover, the study by Kimberly and Evanisko (1981) shows that the educational level of the administrator positively determines the introduction of management innovations.

The importance that human capabilities and skills have for innovation and in general performance in companies has been widely acknowledged in the literature, and research has evidenced a positive association between human capital and innovativeness (Leitner, 2011). In fact, two different bodies of scholars have looked into these issues. On the one hand, integrating research in areas such as human resources and organizational learning, the dynamic capabilities approach (Teece et al., 1997) explains firm-level success and failure as the result of the combination and exploitation of firm-specific competences and resources, and the development of difficult-to-imitate organizational, functional and technological skills. Similarly, the knowledge-based view of the company (Grant, 1996) highlights the relevance of knowledge resources as the key for successful performance, emphasizing the importance of skill acquisition, learning, and knowledge management (Swan et al., 1999). In relation to the management of knowledge, innumerable authors have also confirmed the crucial role that tacit knowledge (embedded in individuals) has for innovation in companies (Nonaka and Takeuchi, 1995), as it represents the more sticky and difficult to copy typology of knowledge. On the other hand, research on intangibles and intellectual capital has adopted a perspective closer to accountancy area (Lev and Zarowin, 1999), in which aspects such as disclosure of reliable information have been more analyzed. Although we consider that the mentioned two distant bodies of research deal with much related problems, for the purpose of this paper we are going to adopt the approach of the innovation literature, emphasizing the role of human capabilities and skills on the innovation performance of real estate firms.

The current economic crisis has increased competition and price/performance rivalry, as a consequence of the reduction of the demand for products, and has affected innovation in many different ways. In this context, the dynamic capabilities approach (Teece et al., 1997) has taken a new topicality, and so has the need of considering the importance of intangibles such as human capital for innovation. However, some authors have analyzed the impact of human capital on entrepreneurship, finding that these variables positively affect the discovery of entrepreneurial opportunities but do not influence on their successful exploitation (Davidsson and Honig, 2003). In this sense, we aim at analyzing the effects of human capital on innovation performance of companies, that is, looking at the outcomes coming from innovation that provide an idea of the success of the exploitation process.

However, the development of these individual capabilities and know-how takes time, as they are often created on the job through "learning-by-using" or "learning-by-doing" (Jensen et al., 2007) and, as a consequence, young companies could be expected to have disadvantages, which could affect their innovative performance. In fact, research shows that human capital and the management of human resources is crucial for innovation in start-ups (DeWinne and Sels, 2010). Similarly, research has shown that young innovative companies often find stronger barriers to innovation, such as internal and external financial constraints (Schneider and Veugelers, 2010).

A large number of publications examine the role of human resources (HR) and their links to innovation and performance such as:

Archibugi et al. (1991) studied on the information gathered through a survey on industrial innovation in 24,000 Italian business units. Two-thirds of the business units surveyed declared they had introduced innovations, although there were significant variations across industries and size. Only 16 percent of the innovating business units monitored declared they had performed R&D: as many as 13,986 business units have introduced innovations without performing R&D. The study focused on the different sources of technical knowledge which support the innovative activities, such as R&D, design, acquisition of capital goods, patents, etc. and considered also the relationship between concentration and innovative intensity at the industry level. It emerges that, at least at the business unit level, there is a weak correlation between the two variables. On the basis of the measured industrial concentration, the propensity to perform product versus process innovations, and the sources of technological change, a taxonomy of industrial sectors is proposed which elaborates

on Pavitt's original approach. This taxonomy, instead of stressing the role of either small firms as in the flexible specialization model or of the Schumpeterian concentration to explain the intensity and nature of the innovative phenomena, indicates that sectoral differences explain more than is generally believed in understanding technological change. Efficient innovation policy should therefore be tailored to match those sectoral characteristics.

Johnson et al. (1996) examined three issues: first was the pervasiveness of technology use and the impact of technology use on performance in the Canadian manufacturing sector. The use of advanced technologies, particularly labor-enhancing ones, is found to be widespread. A strong connection between technology adoption and superior performance was also found. The second section examined the relationship between technology adoption and training in manufacturing firms. Firms using either labor-saving or labor-enhancing technologies are found to be more likely to train. The third section expanded this analysis to examine how innovation-related strategies and activities are related to training. Innovation is found to be a key driver behind training in all sectors.

Baldwin and Johnson (1996) investigated differences in the policies being pursued by more-innovative and less-innovative firms. It focuses on a broad group of strategies-in marketing, finance, production, management, and human resources and asks whether there are key areas in which the strategies being followed by more- and less-innovative firms differ. It also investigates how the activities of firms in each of these areas differ. Finally, it compares the performance of more- and less-innovative firms. The study finds that more-innovative firms place a greater emphasis on management, human resources, marketing, financing, government programs and services, and production efficiencies - each of these areas is important. Finally, more-innovative firms are more successful than less-innovative firms.

Jimenez-Jimenez and Sanz-Valle (2005) analyzed the relationship between innovation and human resource management (HRM) from an empirical perspective, attempting to establish whether innovation determines the firm's HRM or conversely HRM influences the innovation level of the company. They reviewed from both theoretical and empirical perspectives. On the basis of this review, some research hypotheses were formulated. Finally, these hypotheses were empirically tested on a sample of Spanish firms. They provided evidence for both hypotheses and offer more support for Schuler and Jackson's model than for Miles and Snow's model. In accordance with the previous literature, that in order to affect employee behavior, and consequently promote company objectives-firms must develop a bundle of internally consistent HRM practices. However, what is still unresolved is which HRM practices should be included in that system.

Subramanian and Youndt (2005) study the role of human, organizational and social capital and their impact on the innovation capabilities based on a longitudinal study. They argued that different forms of intellectual capital have different effects on incremental and radical innovation capabilities. In their study of 93 firms with more than 100 employees, they find that organizational capital is positively related with incremental innovation capabilities while human capital is negatively associated with radical innovation capability.

Marqués et al. (2006) propose that innovation capabilities have an impact on intellectual capital and hence focus primarily on how such capabilities affect the development of intellectual capital. In contrast to Subramanian and Youndt (2005), they do not assume that a specific form of intellectual capital is associated with innovativeness. Marqués et al. (2006) find a positive relationship between radical and incremental innovation competencies and all three forms of intellectual capital, i.e. human, structural and relational capital. Based on a structural equation model, they show that innovation capabilities affect the stock of intellectual capital in the small and large Spanish telecommunication and biotechnology firms studied.

Freel, M. (2006) employed data from a sample of 1,161 small firms, and drawed broad comparisons between patterns of innovation expenditure and output, innovation networking, knowledge intensity and competition within Knowledge-Intensive Business Services (KIBS; N = 563) and manufacturing firms (N = 598). In so doing, KIBS are further disaggregated along lines proposed by Miles et al. (1995). That is, as technology-based KIBS (t-KIBS; N = 264) and professional KIBS (p-KIBS; N = 299). However, detailing such broad patterns is preliminary. The principal interest of the paper was in identifying the factors associated with higher levels of innovativeness, within each sector, and the extent to which such "success" factors vary across sectors. The results of the analysis appear to offer support for some widely held beliefs about the relative roles of "softer" and "harder" sources of knowledge and technology within services and manufacturing (Tether, 2004). However, some important qualifications are also apparent.

Wong and He (2005) investigated innovation behavior of a certain group of services knowledge-intensive business services (KIBS), compared with the manufacturing sector in Singapore. The main findings of this study are: (1) KIBS firms have higher innovating ratio than manufacturing firms, but innovating manufacturing firms are more likely to do R&D than innovating KIBS firms; (2) KIBS firms have higher human capital intensity, training spending intensity, innovation spending intensity, and R&D spending intensity than manufacturing firms; (3) KIBS firms and manufacturing firms have similar innovation objectives, although some delicate nuances do exist; (4) KIBS firms are less likely to have overseas partners for innovation collaboration than manufacturing firms; (5) there is a U pattern of innovation

collaboration with geographic distance for both KIBS and manufacturing firms; (6) social capitals are important for KIBS firms' successful provision of innovation support to manufacturing clients; (7) the importance of spatial proximity varies over different phases of innovation support.

Jiménez-Jiménez and Sanz-Valle (2007) studied that the recent literature has highlighted the importance of human resource management, knowledge management, and technical innovation as key elements for achieving competitive advantage. Furthermore, research had shown a positive relationship between these three variables. However, empirical research on this issue was still scarce. This paper analyzed those linkages using structural equation modeling with data collected from 373 Spanish firms. The findings showed that there is a relationship among the variables, although it is more complex than described in previous studies.

Santiago and Alcorta (2009) investigated the influence of human resource management practices on the likelihood that a firm performs in-house R&D. The latter is broadly interpreted as learning---a mechanism promoting absorptive capacity and supporting technology capability-building in latecomer firms. The use of distinct definitions of R&D implies different knowledge requirements that firms need to fulfil in order to innovate. The analysis assumes that firms can choose between two learning strategies: they may exploit existing knowledge, or perform more complex explorations and acquire new knowledge. Different knowledge requirements, in turn, underpin distinct R&D outcomes with varying degrees of novelty, at least for the firm. Unlike the recurrent interest in recent catching up experiences of countries, such as India, findings in this paper were supported with evidence from the pharmaceutical industry in Mexico. The analysis revealed some linkages between management practices and learning at firm level. Such influence increases with the novelty of the knowledge required by the firm. Learning to improve or enhance generic drugs is somewhat more demanding than imitative R&D.

Ling and Nasurdin (2010) examined that with rapid globalization, firms particularly those in the manufacturing sector have to continuously innovate for competitive advantage. One way to do so is via effective human resource management practices (thereafter termed as HRM). The purpose of this study is to examine the relationship between human resource management (HRM) practices and organizational innovation. We employed a cross-sectional design with a sample comprised of 674 large manufacturing companies from six states in Malaysia which were identified as having a high percentage of innovating companies (Ministry of Science, Technology and Innovation, Malaysia (MOSTI), 2006). Our independent variables comprised of five HRM practices (performance appraisal, career management, training, reward system, and recruitment). Three types of organizational innovation (product innovation, process innovation, and administrative innovation) served as our dependent variables. Our findings provided partial support for our main hypothesis. Training alone was found to have a positive and significant effect on the three forms of organizational innovation. In addition, performance appraisal positively and significantly affects administrative innovation. Despite the fact that our research framework was partially supported, our study highlights the profound role played by training in stimulating organizational innovation in the context of the manufacturing industry of Malaysia. Implications of our findings and limitations of the research were discussed.

Staniewski, M. W. (2011) studied the importance of human capital is widely emphasised in the literature as regards the achievement of durable competitive edge. It turns out that a company may achieve an equally durable competitive edge owing to its innovativeness. Which source should be chosen by a company's managers, which source should they focus their attention and resources on so as not to be driven out of the market – and even more so – to achieve great success on it? This article provides an unambiguous answer to this question. Both these sources are inseparable and must be used simultaneously. The article presents dependencies occurring between Human Resource Management and innovativeness identifying the critical personnel areas from the viewpoint of innovativeness and simultaneously verifying the usefulness of various models of Human Resource Management.

Leitner (2011) examined the relationship between intellectual capital and different product innovation strategies based on a longitudinal study of Austrian firms assuming that intellectual capital is an important complementary asset for innovation activities. The data was collected in 1995 and 2003 using the same questionnaire among a firm sample of 91 small and medium-sized firms in manufacturing industries. The study delivered evidence for a positive association between human capital and product innovativeness. Moreover, firms, which have strength in both human and structural capital have a higher likelihood to be highly innovative. In addition, the research reveals that intellectual capital discriminates more strongly between highly and less innovative firms while the traditional measure of R&D expenditure has a stronger explanatory power in differentiating between not innovative and less innovative firms.

Tan and Nasurdin (2011) studied that Organizational innovation has been viewed as an essential weapon for organizations to compete in this competitive business environment. Particularly, Malaysia manufacturing firms strive to transform their business model from labor-intensive to knowledge-intensive, which aim to immerse themselves in higher value added activities such as, developing new products, processes, and services, to continual sustain the competitiveness within the rivalries. One of the ways to heighten the organizational innovation is through effective human resource management (HRM) practices and effective knowledge management. This study examined the direct relationships between HRM practices (performance appraisal, career management, training, reward system, and recruitment)

and organizational innovation (product innovation, process innovation, and administrative innovation). Additionally, it also examined the mediating role of KM effectiveness on the direct relationship. Data was drawn from a sample of 171 large manufacturing firms in Malaysia. The regression results showed that HRM practices generally have a positive effect on organizational innovation. Specifically, the findings indicate that training was positively related to three dimensions of organizational innovation (product innovation, process innovation, and administrative innovation). Performance appraisal also found to have a positive effect on administrative innovation. Additionally, this study also demonstrates that training and performance appraisal, are positively related to knowledge management effectiveness. Knowledge management effectiveness fully mediates the relationship between training and process innovation, training and administrative innovation, and performance appraisal and administrative innovation. A discussion of the findings, limitations, and implications are provided.

Al-bahussin and El-Garaihy (2013) found that the concepts of human resource management practices, organisational culture, knowledge management, organisational innovation, and organisational performance in the human resource management research field have been implemented. Although the results of literature were significant, no studies were released in order to conduct a study about the function of human resource management practices in intensifying the organisational performance with interfering organisational culture, knowledge management, and organisational innovation. The purpose of this study is to narrow this gap in the research. The study, moreover, attempts to investigate the connections amid organisational culture, knowledge management, and organisational innovation.The research utilizes causality models and suggests a conceptual schema subsequent to a comprehensive analysis of the literature linked to human resource management field. A sample of 203 human resource directors working in large organisations in the Eastern Region of Saudi Arabia is used. The confirmatory factor analysis [CFA] and SEM are used to analyze and approve the proposal of the conceptual schema. The study illustrates that human resource management practices is an important ancestor of organisational culture, knowledge management, and organisational innovation, which have in tum a positive link to organisational performance. The research attempts to draw concentration to some of the elements, playing the function of arbitrator amid human resource management practices and organisational performance. The study is unique because it is initially conducted to urge the impacts of some important related patterns such as human resource management practices, organisational culture, knowledge management and organisational innovation, and organisational performance.

Camisón and Villar-López (2014) assessed the relationship between organizational innovation and technological innovation capabilities, and analyzes their effect on firm performance using a resource-based view theoretical framework. The article presents empirical evidence from a survey of 144 Spanish industrial firms and modeling of a system of structural equations using partial least squares. The results confirm that organizational innovation favors the development of technological innovation capabilities and that both organizational innovation and technological capabilities for products and processes can lead to superior firm performance.

Lusch and Nambisan (2015) examined a broadened view of service innovation-one grounded in service-dominant logic-that transcends the tangible–intangible and producer–consumer divides that have plagued extant research in this area. Such a broadened conceptualization of service innovation emphasizes (1) innovation as a collaborative process occurring in an actor-to-actor (A2A) network, (2) service as the application of specialized competences for the benefit of another actor or the self and as the basis of all exchange, (3) the generativity unleashed by increasing resource liquefaction and resource density, and (4) resource integration as the fundamental way to innovate. Building on these core themes, we offer a tripartite framework of service innovation: (1) service ecosystems, as emergent A2A structures actors create and recreate through their effectual actions and which offer an organizing logic for the actors to exchange service and concrete value; (2) service platforms, which enhance the efficiency and effectiveness of service exchange by liquefying resources and increasing resource density (facilitating easy access to appropriate resource bundles) and thereby serve as the venue for innovation; and (3) value creation, which views value as created by the service offer and the service beneficiary (e.g., customer) through resource integration and indicate the need for mechanisms to support the underlying roles and processes. In discussing these components, we consider the role of information technology-both as an operand resource and as an operant resource-and then examine the implications for research and practice in digitally enabled service innovation.

Nieves and Segarra-Ciprés (2015) studied of management innovation has gained relevance in recent years, but there is a lack of empirical research analyzing the factors that favor it. This article contemplates two types of antecedents of management innovation in the hospitality industry. In the internal context of the company, the influence of the employees' knowledge and skills is analyzed, as well as the company's capacity to integrate this knowledge. In the external setting, an evaluation is performed of the way relationships established with tourist industry agents and external change agents affect the development of management innovation. The data obtained from 109 firms operating hotel establishments in Spain show that both the internal resources and the relations with external change agents determine the introduction of management innovations. However, access to knowledge held by tourist industry agents does not influence management innovation.

Erevelles et al. (2016) studied about consumer analytics is at the epicenter of a Big Data revolution. Technology helps capture rich and plentiful data on consumer phenomena in real time. Thus, unprecedented volume, velocity, and variety of primary data, Big Data, are available from individual consumers. To better understand the impact of Big Data on various marketing activities, enabling firms to better exploit its benefits, a conceptual framework that builds on resource-based theory was proposed. Three resources-physical, human, and organizational capital-moderate the following: (1) the process of collecting and storing evidence of consumer activity as Big Data, (2) the process of extracting consumer insight from Big Data, and (3) the process of utilizing consumer insight to enhance dynamic/adaptive capabilities. Furthermore, unique resource requirements for firms to benefit from Big Data are discussed.

Kundu and Gahlawat (2016) established the linkage between various retention practices and perceived firm performance and innovation performance. Using multiple regression analysis on a sample of 563 respondents from 204 organizations operating in India, the study has highlighted that employee retention practices in the form of 'development and empowerment' and 'supportive organizational culture' are positively related to perceived firm performance. Findings have also highlighted the positive relationship between 'development and empowerment' and innovation performance. However, no such relationship has been found between supportive organizational culture and innovation performance. Implications for HR practitioners and further researches are discussed.

Akhavan and Mahdi Hosseini (2016) examined effectively encouraging employees to share valuable knowledge can increase and sustain a firm's competitive advantages. This study adopted an integrated approach to understand casual relationships among knowledge sharing (KS) enablers (social capital factors), mechanism of forming KS behaviours (knowledge collecting and knowledge donating) through individuals' KS intention, and KS outcome (innovation capability) within research and development teams. The research model was developed by reviewing literature and tested with survey data collected from 230 employees in multiple companies in Iran. Results of partial least squares analysis indicated that social interaction ties (as a structural capital factor), trust, reciprocity, and team identification (as relational capital factors) significantly associated with KS intention. KS intention, in turn, was significantly related to KS behaviours (knowledge colleting and knowledge donating). In addition, findings revealed that members' willingness to collect and donate knowledge can affect team innovation capability. This study also discussed the implications for fostering social capital and KS behaviours to enhance team innovation capability.

Vivares et al. (2016) proposed Human resource management (HRM) is considered an important issue in operations strategy (OS). Furthermore, OS effectiveness depends on performance in competitive priorities (CP). However, little empirical evidence exists about the relationship between them. Thus, the purpose of this paper investigated the impact of HRM on performance in CP. The research was conducted by surveying a sample of medium and large manufacturing companies in the Colombian coffee region. Three groups of variables were studied: performance in CP, HRM practices and factors related to employees. A regression analysis was conducted to test the hypotheses. They found that No significant relationship was found between HRM practices and performance in CP. Regarding the factors related to employees, two findings were relevant: first, when the companies involve features about the individuals in OS decision making (motivations, personal goals, abilities, etc.) better performance can be observed in CP; second, when employees reach a higher level of satisfaction and job performance, the performance in CP improves as well. Considering the importance of HRM practices, appropriate adjustment and application should be sought to improve company performance. Furthermore, factors related to employees (features about the individuals, job satisfaction and employee performance), must be properly aligned with the OS. The studied addressed an issue supported by little empirical evidence. Because few studies have considered the total set of CP identified in the literature review, the authors applied an indicator to establish the global performance of the production system according to the market requirements. Traditionally, HRM has been studied from the perspective of management practices, giving little attention to employees. In this research, the authors consider not only this perspective but also the effects of factors related to employees on performance in CP when they are aligned with the OS.

Report of the 18th CPC National Congress proposed that relying on the technological power is the most fundamental and improving autonomous innovative capacity substantially is the most crux and promoting our country's economic and social development to be on the track driven by innovation as soon as possible in order to achieve scientific development and accelerate the transformation of economic development. National Science and Technology Conference held in 2012 enacted the principles of science and technology development that making independent innovation, leapfrogging advances in key areas, supporting development and leading a better future. Guangxi science and technology innovation conference held in September 30.2012 pointed that we should always implement the scientific development concept thoroughly and the strategies vigorously of rejuvenating the Guangxi through human resource and development with science and technology in the outstanding position and focus on innovating scientific and technological institutional mechanism to make important contributions constantly for Guangxi stable and rapid economic and social development with the improvement of independent innovative capability as a core and implementation of independent innovative projects in Guangxi as the starting point.

The improvement of the independent innovation capability and building an innovation-oriented country are the core driving force and also the key to enhance the comprehensive national strength [1]. And enterprises are the main body of autonomous innovation and the crux to enhance national capacity for autonomous innovation. In the process of economic globalization, facing increasingly fierce competition and increasing pressure, enterprises must master the relevant technique and property right and fully improve their own innovation capability at the same time in order to obtain deeper development in the future. Nationwide, economic and technological development level in Guangxi is lagging behind and industrialization level is not high [2]. Meanwhile, the capability of independent innovation in Guangxi is poor and industrial technology depended mostly on external input. Accelerating the pace of autonomous innovation must be paid attention to in order to achieve the improvement of corporate core competitiveness, thereby promote overall economic development in Guangxi. Therefore, how to improve capability of corporate independent innovation in Guangxi becomes a pressing issue [3]. They evaluated the capability of corporate independent innovation in Guangxi through factor analysis and concluded several factors with the greater impact on the capability of corporate independent innovation. Then, they analyzed the results and put forward proposed reference in order to improve the capability of corporate independent innovation in Guangxi.

Through the research of pre-existing literature, we can find that many domestic and foreign scholars have different standpoints concerning the evaluation indicator system of capability of corporate independent innovation based on the different viewing angles and position of analyzing problems, and the unified evaluation indicator system has not yet been formed [4]. Although the scholars did not select the same indicators, from the comprehensive standpoint, innovative input capability, innovative activities capability and innovative production capability are the core contents and similar points of evaluation system of capability of corporate independent innovation. For example, the factor of manufacturing capability can be incorporated into the corporate innovation input; the capability of R & D, the capability of digestion and absorption and the capability of internal management can be incorporated into innovative activities capability; and the capability of marketing and sales revenue from new products can be incorporated into innovation output capability. In order to ensure effective and comprehensive economic indicator system and make analysis process easier to be quantitative, this paper mainly integrated indicator system constructed by academic predecessors and eliminated the indicators that are close correlative, weak representative, and covering the small amount of information to construct the evaluation system of corporate independent innovation capability from three aspects as the capability of innovation output, innovation activities and innovation output.

Table 1 Citations of Human Resources Capabilities Factors

Criteria	Support References
Knowledge Resources Capability	Kimberly and Evanisko (1981), Archibugi et al. (1991), Johnson et al. (1996), Baldwin and Johnson (1996), Young et al. (2001), Jimenez-Jimenez and Sanz-Tether (2004), Smith et al. (2005), Wong and He (2005), Valle (2005), Freel, M. (2006), Guan et al. (2006), Akman, and Yilmaz (2008), Chang & Lee (2008), García-Muiña and Navas-López (2007), Akhavan and Mahdi Hosseini (2016), Vivares et al. (2016).
Human Capital and Innovativeness Capability	Jiménez-Jiménez and Sanz-Valle (2007), Jensen et al. (2007), Birkinshaw et al. (2008), Orfila-Sintes and Mattsson (2009), Mol and Birkinshaw (2009), Zhou and Wu (2010), DeWinne and Sels (2010), Schneider and Veugelers (2010), Ling and Nasurdin (2010), Staniewski, M. W. (2011), Leitner (2011), Tan and Nasurdin (2011), Al-bahussin and El-Garaihy (2013), Camisón and Villar-López (2014), Lusch and Nambisan (2015), Nieves and Segarra-Ciprés (2015), Erevelles et al. (2016), Kundu and Gahlawat (2016),
Social Capital Capability	Wong and He (2005), Valle (2005), Freel, M. (2006), Jiménez-Jiménez and Sanz-Valle (2007), (Jensen et al., 2007), Birkinshaw et al. (2008), Orfila-Sintes and Mattsson (2009), Santiago and Alcorta (2009), Mol and Birkinshaw (2009), Zolnik and Sutter (2010), Zhou and Wu (2010), DeWinne and Sels (2010), Schneider and Veugelers (2010), Ling and Nasurdin (2010), Staniewski, M. W. (2011), Leitner (2011), Tan and Nasurdin (2011), Vaccaro et al. (2012), Al-bahussin and El-Garaihy (2013), Volberda et al. (2013), Camisón and Villar-López (2014), Lusch and Nambisan (2015), Nieves and Segarra-Ciprés (2015), Erevelles et al. (2016), Kundu and Gahlawat (2016), Akhavan and Mahdi Hosseini (2016), Vivares et al. (2016).
Research and Development Cooperation Capability	Kimberly and Evanisko (1981), Archibugi et al. (1991), Nonaka and Takeuchi (1995), Grant (1996), Johnson et al. (1996), Baldwin and Johnson (1996), (Teece et al., 1997), Swan et al. (1999), Lev and Zarowin (1999), Young et al. (2001), Davidsson and Honig (2003), Jimenez-Jimenez and Sanz-Tether (2004), Smith et al. (2005), Wong and He (2005), Valle (2005), Freel, M. (2006), Jiménez-Jiménez and Sanz-Valle (2007), Jensen et al. (2007), Birkinshaw et al. (2008), Orfila-Sintes and Mattsson (2009), Santiago and Alcorta (2009), Mol and Birkinshaw (2009), Zolnik and Sutter (2010), Zhou and Wu (2010), DeWinne and Sels (2010), Schneider and Veugelers (2010), Ling and Nasurdin (2010), Staniewski, M. W. (2011), Leitner (2011), Tan and Nasurdin (2011), Vaccaro et al. (2012), Al-bahussin and El-Garaihy (2013), Volberda et al. (2013), Camisón and Villar-López (2014), Lusch and Nambisan (2015), Akhavan and Mahdi Hosseini (2016), Vivares et al. (2016).
Resource Allocation Capability	Nonaka and Takeuchi (1995), Grant (1996), Johnson et al. (1996), Baldwin and Johnson (1996), (Teece et al., 1997), Swan et al. (1999), Lev and Zarowin (1999), Young et al. (2001), Davidsson and Honig (2003), Jimenez-Jimenez and Sanz-Tether (2004), Smith et al. (2005), Wong and He (2005), Valle (2005), Freel, M.

	(2006), Jiménez-Jiménez and Sanz-Valle (2007), (Jensen et al., 2007), Birkinshaw et al. (2008), Orfila-Sintes and Mattsson (2009), Santiago and Alcorta (2009), Mol and Birkinshaw (2009), Zolnik and Sutter (2010), Zhou and Wu (2010), DeWinne and Sels (2010), Schneider and Veugelers (2010), Ling and Nasurdin (2010), Staniewski, M. W. (2011), Leitner (2011), Tan and Nasurdin (2011), Vaccaro et al. (2012), Al-bahussin and El-Garaihy (2013), Volberda et al. (2013), Camisón and Villar-López (2014), Lusch and Nambisan (2015), Nieves and Segarra-Ciprés (2015), Erevelles et al. (2016), Kundu and Gahlawat (2016), Akhavan and Mahdi Hosseini (2016), Vivares et al. (2016).
Learning Capability	Kimberly and Evanisko (1981), Archibugi et al. (1991), (Nonaka and Takeuchi (1995), Grant (1996), Johnson et al. (1996), Baldwin and Johnson (1996), (Teece et al., 1997), Swan et al. (1999), Lev and Zarowin (1999), Young et al. (2001), Davidsson and Honig (2003), Jimenez-Jimenez and Sanz-Tether (2004), Smith et al. (2005), Wong and He (2005), Valle (2005), Freel, M. (2006), Jiménez-Jiménez and Sanz-Valle (2007), (Jensen et al., 2007), Birkinshaw et al. (2008), Orfila-Sintes and Mattsson (2009), Santiago and Alcorta (2009), Mol and Birkinshaw (2009), Zolnik and Sutter (2010), Zhou and Wu (2010), DeWinne and Sels (2010), Schneider and Veugelers (2010), Ling and Nasurdin (2010), Staniewski, M. W. (2011), Leitner (2011), Tan and Nasurdin (2011), Vaccaro et al. (2012), Al-bahussin and El-Garaihy (2013), Volberda et al. (2013), Camisón and Villar-López (2014), Lusch and Nambisan (2015).

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[29]. Miriam Ruiz, Oihana Basilio, Juan Carlos Salazar, Paloma Sánchez "Human capabilities and innovation in young companies" pp 1-5 Proceedings of the 2013 EU-SPRI Forum Conference Madrid 10-12 April 2013 ISBN 978-84-695-7408-9 ORAL PRESENTATION.