

**DYNAMICS OF HUMAN RESOURCE PRACTICES AND KNOWLEDGE  
MANAGEMENT IN PROMOTING INNOVATION IN HIGHER  
EDUCATION: A LITERATURE REVIEW**

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**ABSTRACT**

*Higher education in India has gone through several transformations to reach its present level of performance, but is now at the highest level of vulnerability due to the globalization and the entry of the foreign universities into the domestic market. The sustainability of the Indian universities is only through the gaining of the competitive advantage in business, in which Innovation plays a major role. Unless the universities learn from their counterparts in the western world and bring home the innovative practices in the teaching-learning processes, their very survival may be at stake. In this paper, we suggest and review three perspectives of the literature. The literature review explains HRM practices Knowledge Management (KM) and Innovation. The literature review is taken from the secondary resources such as journals, books, conference proceedings etc. Our aim is to clearly establish the link between the three main constructs of the study.*

***Index Terms***—Human Resource Practices, Knowledge Management, Innovation, Higher Education (*key words*)

**I. INTRODUCTION**

Higher education in India has gone through several transformations to reach its present level of performance, but is now at the highest level of vulnerability due to the globalization and the entry of the foreign universities into the domestic market. The sustainability of the Indian universities is only through the gaining of the competitive advantage in business, in which Innovation plays a major role. Unless the universities learn from their counterparts in the western world and bring home the innovative practices in the teaching-learning processes, their very

survival may be at stake. Already measures are being taken to improve the quality of higher education and the governing bodies have strict regulation on the quality aspects of education. In this paper, we suggest and review three perspectives of the literature. The literature review links the three constructs of Human Resource Management, Knowledge Management and Innovation.

## **II. LITERATURE REVIEW ON HR PRACTICES**

HR Practices has the dimensions such as recruitment, compensation and reward, performance appraisal, teamwork, and training and development. The literature reviews on each of these dimensions are given below.

### **Recruitment**

Recruiting and retaining the best of the talent is vital to the organisational sustainability [1]. In this knowledge driven economy the qualified job seekers are recruited to contribute to the organization in gaining the competitive advantage [2]. One of the biggest challenges of all the organizations including the higher educational service sectors is the retention of the talented staff and the Generation-Y (The internet generation)[3][4][5][6][7]. This because of their rich shared social and historical experiences. So, it is not enough to attract the best talent to the organization but retaining them through proper mechanisms through a thorough understanding of the theories of expectancy value theory (motivation = expectancy = Instrumentality X Valence). Expectancy refers to the perception that the performance is dependent upon effort. Instrumentality component refers to the perception that performance is connected with specific consequences. Valence component refers to the amount of value (or importance) an individual ascribes to achieving the goal minus any costs that may be involved. In goal-setting theory, goals act to encourage individuals to find strategies for how a goal can be achieved and, thus, individuals direct effort towards relevant activities. Goal-setting theory requires the goals to be difficult but attainable. A group of researchers have opined that a thorough knowledge of all these aspects may be expected out of the recruitment practice if it has to be effective and worth the cost [8][9][10][11][12].

### **Compensation and Reward**

Compensation processes are built on strategies, guiding principles, structures and procedures which are devised and managed to provide and maintain appropriate types and levels of pay, benefits and other forms of compensation [13]. This constitutes measuring job values, designing and maintaining pay structures, paying for performance, competence and skill, and providing employee benefits. However, compensation management is not just about monetary gains and is beyond that. It is also concerned with that non-financial compensation which provides intrinsic or extrinsic motivation [13]. Compensation implies having a compensation structure in which the employees who perform better are paid more than the average performing employees [14]. Compensation Management is concerned with the formulation and implementation of strategies and Policies that aim to compensate people fairly, equitably and consistently in accordance with their value to the organization [15]. The task in compensation administration is to develop policies and procedures that will attain maximum return on the amount spent in the terms of attracting, satisfying, retaining and perhaps motivating employees [16]. This practice is very much in tune to the latest trends and techniques in case of industries, but is yet to be fully functional in higher educational institutes. The point to be noted is that they have bearing on organizational performance, and hence, it is important to the organization.

### **Performance Appraisal**

Performance appraisal is potentially a key tool for organisations to make the most of their human resources and the use of appraisal is widespread across the service and product organizations [17]. Systematic evaluation of individual performance has to be linked to workplace behaviour and/or specific criteria. In industries, appraisals often take the form of an appraisal interview, usually annual, supported by standardised forms and paperwork, but it is not a practice in many universities. The key objective of appraisal is to provide the Professors with feedback on their performance by the Head of the Department. There are three key questions for quality of feedback: what and how the observations on performance made? Why and how are they discussed? What determines the level of performance in the job?[18] . These three questions are very vital in the context of performance appraisal.

### **Team work**

Team work refers to the process of establishing and developing a greater sense of collaboration and trust between team members. Interactive exercises, team assessments, and group discussions enable groups to cultivate this greater sense of teamwork. Most of the work in a higher educational setting except taking classes is teamwork. The activities such as research, general administration, organizing conferences or workshops, admission, examination, innovation, accreditation, and almost all the activities in the higher educational set-up demands a good teamwork among the faculty members. The effectiveness of workplace teams is often directly related to the skills of the individual tasked with team assembly. In this regard there is a need for a degree of understanding when it comes to the needs and motives of different people and this in turn requires recognition that one can often classify individuals as having a particular type of personality. Understanding the role that each of these personalities play within the team managed project process is central to delivering successful project outcomes [19]. There are several roles an employee may exhibit such as: leader, the play maker, the analyst, the farmer, the finisher, the company employee, the assistant, the team player, team assembly. All these roles are different in nature but each one of them may have a typical use e.g. the play maker may be a catalyst for innovation, the assistant may demonstrate high IQ without being dominant and so on.

Teamwork is defined by [20] “as a cooperative process that allows ordinary people to achieve extraordinary results”. A team has a common goal or purpose where team members can develop effective, mutual relationships to achieve team goals explains [21]. Teamwork relies upon individuals working together in a cooperative environment to achieve common team goals through sharing knowledge and skills. The literature consistently highlights that one of the essential elements of a team is its focus toward a common goal and a clear purpose [22] Teams are an integral part of many organizations and should be incorporated as part of the delivery of tertiary units. Successful teamwork relies upon synergism existing between all team members creating an environment where they are all willing to contribute and participate in order to promote and nurture a positive, effective team environment. Team members must be flexible enough to adapt to cooperative working environments where goals are achieved through collaboration and social interdependence rather than individualised, competitive goals [23].

### **Training & Development**

Training is systematic development of the knowledge, skills and attitudes required by an individual to perform adequately a given task or job[24]. In today's ever changing knowledge driven economy training and development is a survival tool of an individual. Reforming, modernizing and considering the social dimension of higher education is in the ultimate aim of any country[25]. Training and development involves an expert working with trainees to impart knowledge, skill, and attitude so that they become more effective in their job. In the context of HR T & D has more job focus and is often associated with new job [26]. These days outsourcing of T & D is common particularly when the expertise is not available in-house [27].

### **III. LITERATURE REVIEW ON 'KNOWLEDGE MANAGEMENT (KM) PROCESSES'**

The KM processes identified through literature review are knowledge diagnosing, knowledge acquisition, knowledge generation, knowledge sharing, knowledge storing, and knowledge application as given below.

#### **Knowledge diagnosing**

Several works have contributed to diagnosing organizational knowledge creation. One significant category of such research body is the identification of knowledge enablers, e.g. [29] five enablers to encourage SECI processes and [28] five enablers to enhance innovation. Considering that knowledge creation is a result of the SECI modes that can be measured and scored, weakness in or absence of any mode has been found to prevent the knowledge spiral from moving forward; [30] have claimed that the balance in the four conversion modes, rather than the overall score, was an indicator of organizational knowledge diagnosing. All these concepts are relevant to the higher educational scenario. The educational system is known by its curriculum and unless there is a robust process of diagnosing knowledge which is current and relevant the market standing of the university will be at stake.

### **Knowledge acquisition**

Acquiring knowledge in a university can be viewed at both institutional level and individual level. At an organizational level (Professors and students), knowledge acquisition can be defined as accepting knowledge from the external environment and transforming it so that it can be used by an organization [31] . Since knowledge is justified belief in what is the truth [32], acquiring knowledge means that individuals change their cognitive structure by justifying their personal belief that the acquired knowledge is true[32][33] . The second component is intention to use the knowledge. To be claimed as knowledge, the individuals' true belief should increase their capacity for effective action [34] and unless they intend to use the knowledge, the effective action cannot be achieved. To make effective use of source's knowledge, recipients have to comprehend the knowledge and decide to use it[35][36] Scholars use changes in cognitive structure to represent knowledge sourcing[35] (Gray and Meister, 2004) and the intention to use knowledge to represent knowledge consuming [37] In proposed research the Individual Knowledge Acquisition (IKA) should be represented by both dimensions, which are changing cognitive structure to comply with acquired knowledge as well as the intention to use it. In the context of higher education, changing cognitive structure is important as the recipient of knowledge should be a lifelong learner and intention to use the knowledge should lead towards research and practical application of what has been learnt.

### **Knowledge generation**

Effective knowledge generation in higher education requires not only a stock of knowledge, but also a constant flow of it, the essence of sharing knowledge is to support the generation of knowledge. Therefore, knowledge sharing includes two different strategies to transfer knowledge between different

Organizational members as well as departments[38] . This is essential for multidisciplinary and interdisciplinary knowledge to be generated in the university. First, direct contact between individuals or groups of individuals is required which represent personal and context specific exchanges of knowledge. This knowledge sharing practices especially succeed in the context of tacit or non-codified knowledge that is in possession of organizational members, deeply embedded in firm routines and cannot be completely articulated in documents and other

secondary sources[39]. In this situation, the combination of the individuals' repertoire of skills and knowledge contains the potential to create new knowledge [40]. Second, knowledge can be shared by the use of electronic databases, that is, written documents or data, which are recorded and uploaded by employees. This knowledge can be accessed by other employees when needed [41]. Knowledge generation can take place when four managerial tasks are executed effectively. These tasks are: planning, organizing, controlling, and staffing. Like the conventional management, knowledge generation also requires that these four tasks be systematically undertaken with the objective of generating knowledge.

### **Knowledge sharing**

Knowledge sharing can immensely benefit the university in constantly updating the curriculum and enhancing its research and consultancy services. There are several technologies which can be of use in knowledge sharing. Some of them are Salesforce.com, BMC Software, DCASoft, and Atlassian which are in use for the knowledge sharing applications in business organization, governments, and educational institutions [42]. The Indian universities are yet to make use of these tools but the process is on in many universities. Theory of Planned Behaviour (TPB)[43] seems to be the most appropriate model for knowledge sharing behaviour as it explains the process of how knowledge sharing tendency can be developed in a systematic manner in the knowledge worker. Each of the TPB elements including attitude toward behaviour, subjective norms, perceived behavioural control and intention is counted as an aspect of actual behavior[43][44] Attitude toward a specific behaviour is defined as a person's evaluation of that behaviour when deciding to perform it [45]. Behavioural control is the person's perception of the extent to which the knowledge worker has control over a specific behavior [46]. People's knowledge sharing is affected by their confidence in the opportunities and resources that enables them to share their knowledge[43] Norms are both explicit and implicit rules of a group that identify the range of acceptable behaviours [47] Subjective norms refer to the person's perception of the expected behaviour within a special group and in a certain situation[48] Intentions are affected by the person's approval of distinctive norms; thereby the person tends to adapt to norms and is rationally criticisable whenever the person ignores them [49]. In other words, intentions are formed by the motivational factors that affect behaviour; they are indicators

of people's willingness to try hard [43]. Further to this theory, when faculty members of a university build close relationships with one another, they devote a notable amount of time to share their mutual problems and concerns. In some studies it was found that anticipated, open-ended future interaction has a positive effect on cooperation behaviour [50]. All these theories contribute to the knowledge sharing behaviour of the professors in the universities.

### **Knowledge storing**

One of the purposes of KM is to store the organizational knowledge for future use. The idea is that people may come and go but the organization must grow and for that to happen there must be a very robust way of storing the knowledge in a systematic manner so that it may be retrieved with ease in a minimum time. Public storage will make knowledge grow whereas private storage will make the knowledge die. Recruitment and training practices greatly influence the sharing and storage of knowledge [51]. Data warehouses are the main component of KM infrastructure. Organizations store data in a number of databases. The data warehousing process extracts data captured by multiple business applications and organizes it in a way that provides meaningful knowledge to the business, which can be accessed for future reference. For example, data warehouses could act as a central storage area for an organization's transaction data. Data warehouses differ from traditional transaction databases in that they are designed to support decision-making and data processing and analyses rather than simply efficiently capturing transaction data. Knowledge warehouses are another type of data warehouse but which are aimed more at providing qualitative data than the kind of quantitative data typical of data warehouses. Knowledge warehouses store the knowledge generated from a wide range of databases including: data warehouses, work processes, news articles, external databases, web pages and people (documents, etc.). Thus, knowledge warehouses are likely to be virtual warehouses where knowledge is dispersed across a number of servers. Databases and Knowledge bases can be distinguished by the type and characteristics of the data stored. While data in a database has to be represented in explicit form (generally speaking the information can only be extracted as it is stored in the system), the knowledge-based systems support generation of knowledge that does not explicitly exist in the database. In this way, the data in knowledge bases can be incomplete, fuzzy, and include a factor of uncertainty. The knowledge in the knowledge bases is stored based

on rules, There are other forms such as data mart, data repository, content and document management systems [52][53][54][55][56][57].

### **Knowledge Application**

Although firms deliberately set up mechanisms for intra-organizational knowledge sharing and dissemination across units, it is not guaranteed that these mechanisms actually contribute to knowledge application. To exploit the knowledge in an organization, it is not sufficient that employees simply engage in knowledge sharing behavior. In some instances, tools for knowledge sharing and knowledge transfer can contribute to increase in application of methods, techniques, and models, while in other instances these effects may be negligible[58]. In complex organizations, employees may have several affiliations or multi-memberships[59][60]. Knowledge application is the extent to which knowledge acquired from other employees or units has been applied in a beneficial manner in a given organizational unit. Knowledge application represents the logical next step after knowledge sharing in the knowledge management cycle [61]. It is not enough to share knowledge or disseminate knowledge to a receiving part. Rather, the methods, practices, and techniques in question must be used by the respondents in a way that changes their actions. Knowledge is applied when the experience of one individual or unit influences another unit through changes in behavior [62][63]. The employee has a primary “home” in the line organization but, at the same time, can belong to other spheres, or communities, that serve different purposes. Communities of practice and internal knowledge networks are examples of secondary intra-organizational structures that have come to typify horizontal knowledge overlays. Such overlays may potentially reduce the power of the line organization as well as take focus away from the work occurring within the line organization. The manager may perceive the employee’s participation in these communities as either disrupting work, or alternatively as a source of new insights, methods, and procedures that will improve the quality of the work. Thus, the manager’s perception of the value of the employee’s participation may influence the knowledge application.

## **IV. LITERATURE REVIEW ON INNOVATION**

Knowledge innovation can be the ultimate aim of any university in the world. Innovation is the process of bringing into existence a new product, service or combination of both. But the component of it may not be very clear and may be a dynamic construct as the expectations of the product and service organizations may change from time to time. However, the following three components merge out as the key components of innovation in the academic environment of a university [64].

### **Product innovation**

Product innovation is defined as the development driven by a desire to improve the properties and performance of finished products and the objectives. Product innovation may be to develop new products, improve product properties, or improve product quality [65]. The typical process of product innovation should pass through systematic stages with starting point as a new conceptual idea passed to the R & D department, design department, engineering department, production department, marketing department, and then come out as a new product into the market [66].

The literature highlights the role of information technologies, firm strategy, organizational design and, more recently, human resource management and organizational culture as the determinant of product innovation [67](Valencia, 2010). But most of these studies are in the product industries and some are in service industries too but not many are in the context of a university as a service organization. There are several product offerings in a university in the form of programmes which are offered, patents files, inventions, etc. Unless the university is innovative in its approach towards their products and the services, sustainability is a farfetched possibility. Organizational culture is considered in the literature as one of the factors that can most stimulate innovative behaviour among members of the organization. Since it influences employee behaviour, it may lead them to accept innovation as a fundamental value of the organization and to feel more involved in the business [68] (Hartmann, 2006). Some studies have put forward theoretical explanations for the relation between culture, or some of its components, and organizational innovation [69][70][71]. Product innovation work is mainly driven by market needs and ultimately external customers. Thus, the product innovation work is primarily effectiveness-driven [72].

### **Process innovation**

Process innovation is defined as development driven by internal production objectives, which may be reduction of production costs, higher production yields, improvement of production volumes and product recoveries, environment-friendly production. Process innovation work is mainly driven by the needs of production (i.e. internal customers) and can be said to be primarily efficiency-driven. Process innovation is an important enabler of product innovation[72] . The roots of process innovation can be traced back to: the quality movement, scientific management, the socio-technical school, research on diffusion of innovation, and research on competitive use of IT. From the quality movement [73][74][75] process innovation has inherited process thinking, i.e. an emphasis on processes, process stability, and incremental process changes (improvements).From scientific management[76] process innovation has inherited a focus on division of labor or tasks and a focus on measuring. From the socio-technical school [77], process innovation has inherited an emphasis on the interplay between technology and people. From research on diffusion of innovation[78] (Rogers, 1962), process innovation has inherited a dual adaptation strategy, i.e. adaptation of technology on the one hand and adaptation of organizational structures and processes on the other hand, to accommodate an innovation. From research on competitive use of IT [79] , process innovation has inherited an awareness of the possibility of using IT to effect radical change of an organization's work processes and competitiveness. In the settings of university process innovation has higher role to play as it is basically a service organization. University is a host to a number of processes such as admission process, recruitment process, teaching-learning process, quality assurance process, examination process, etc[80][81][82]. So innovativeness is required in each of these processes to ensure sustainability of the university [83][84].

### **Organizational innovation**

An organizational innovation is defined as a new organizational method in the firm's business practices, workplace organization or external relations[85]. Organizational innovations can be intended to increase a firm's performance by reducing administrative costs or transaction costs, improving workplace satisfaction (and thus labour productivity), gaining access to non-tradable assets (such as non-codified external knowledge) or reducing cost of supplies. Business

practices include organizational elements such as leadership, culture, human resource management, management processes including business development, performance and incentive systems and mechanisms for learning, and external and internal corporate communication. Organizational innovation can refer to either 'new-to-the-state-of-the-art' or 'new-to-the-firm' [86]. This would mean that organizational innovations could be a result of existing diffused organizational ideas, but also of a more local process of inventions in a specific context (e.g. within a specific firm). According to [87], an organizational innovation creates long-term competitive advantages.

Several researchers have theoretically linked knowledge management processes with organizational innovation. Ordinarily organizational productivity depends on techniques, procedures and in-depth human knowledge [88][89] suggested that the knowledge of an organization is used to carry out organizational tasks. [90] submitted that knowledge will become the final substitute for any other resource. Thus, to enhance the organizational innovation, it is necessary to make more effective use of intellectual properties among organizations, improve the knowledge procedures of the members of the organization and to encourage employees to continually contribute to the knowledge share [91]. The ability to make good use of knowledge and appropriately manage and apply this knowledge internally within a firm has become the main criteria for business competition [92][93]. Universities are also service centric organizations and all these aspects refer to the settings of the university.

## **V. SUMMARY OF LITERATURE REVIEW**

The literature review has clearly identified the meaning of the individual constructs of research interest: HR practices, KM processes, and innovation in the context of this study and has revealed that there is a very well-established link between these constructs. The literature review has revealed that the construct HR Practices has the dimensions: recruitment, compensation and reward, performance appraisal, teamwork, and training and development, which have a significant role to play to the efficiency of KM processes. The KM processes identified through literature review are: knowledge diagnosing, knowledge acquisition, knowledge generation, knowledge sharing, knowledge storing, and knowledge application. The purpose of KM processes in a service or product organization is to contribute to the innovation so as to gain the

competitive advantage in business. The three main dimensions of innovation in the context of higher education are product innovation, process innovation, and organizational innovation. The literature review has clearly established the link between the three main constructs of the study.

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