Chapter

Aligning Human Resource Management with Knowledge Management for Better Organizational Performance: How Human Resource Practices Support Knowledge Management Strategies?

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Abstract

Contributing to the HR-approach to knowledge management (KM), this chapter aims at outlining the role of human resource management (HRM) in supporting KM through utilizing the theoretical and empirical literature. The article is divided into two sections. The first section presents various knowledge concepts, KM perspectives and KM strategies. This section ends up by linking these topics in a KM sequential model which helps us to track the philosophical underpinnings and perspectives of each KM strategy. The second section investigates various HR orientations and HR practices and situates their differing contextual characteristics under each KM strategy. It aligns various HR practices with different KM strategies; suggesting that HRM is most effective as a combination of practices that are consistent and sharpened in supporting each KM strategy, which is part of the organizational strategy. The debated practices are recruitment and selection, compensation management, training and development, performance management, retention management and career management. Each of those practices is speculated to alter based on the chosen KM strategy; presenting a framework that is useful for practitioners and academics alike. The review ends up by identifying some research gaps and opportunities to be carried out in future studies. Those research gaps, if addressed, will extend our understanding of KM and the supporting role HRM.

Keywords: knowledge management, human resource management, organizational strategy

1. Introduction

In the knowledge economy, knowledge is recognized as the major source of wealth production, and managing knowledge effectively and efficiently is considered to be a key success factor to gain sustainable competitive advantage for organizations [1–3]. Notably, competitive advantage is increasingly based on the successful application, leverage and creation of knowledge—especially knowledge embedded

in human assets. Managing knowledge effectively is as a significant factor in innovating faster and better than competitors [4–6]. Human resource management (HRM) practices—major contributor to organizations' competitive advantage—should be utilized to manage organizational human assets through facilitating the development of competencies that generate organizational knowledge [4, 5, 7–9]. Ananthram et al. [3] suggested that a new paradigm of HRM is evolving towards "strategic human assets" theory in pursuit of firm global competitive advantage. This paradigm is built on two pillars: strategic agility and knowledge management (KM). However, much of the literature of KM continues to reflect a techno-centric focus, similar to that of information management, which in essence regards knowledge as an entity that can be captured, manipulated and leveraged. This is a limited and ultimately hazardous perception [4]. It is widely accepted that "it is not technology, but the art of human- and humane-management" that is the continuing challenge for executives [5]. In this regard, Gloet [4] illustrated a revitalization of the HRM function to respond to the demands of the knowledge economy, looking both within and outside the organization. The traditional focus on managing people has been broadened to managing organizational capabilities, relationships, learning and knowledge. Banerjee [6] also believes that we must look beyond human capital to a more sustainable and holistic view of individuals; suggesting the term "sustainable human capital" that moves away from the traditional view of human capital.

The collective knowledge of human expertise through their abilities, experience and interaction with the individual's environment has become such a critical resource to reinvest [1]. It is important that knowledge is viewed as a social creation emerging at the interface between people and information, especially within communities engaged in communication, knowledge-creation, and knowledge-sharing and learning [4]. The most crucial point about HRM is that people and their interpersonal relations become and are treated as resources [10]. The success of strategic HRM in the knowledge economy also depends on its ability to harness the hidden potential in the informal social architecture, including tacit knowledge, co-operation and informal learning [5].

HRM and KM are two people-centered concepts focusing on using, sharing and creating knowledge [5, 8]. Mainly, knowledge cannot be managed in the void—without people—and vice versa [10]. As Thite [5] identified some key HR strategies for effective people-centric partnership in KM, namely, trusting HR philosophy, institutionalizing learning to learn, and fine-tuning HR systems in recruitment, retention, performance and reward management [5]. Most researchers suggest that KM can be interpreted as a form of HRM. In particular, HRM supports employees in creating and managing knowledge through the sharing of ideas, opinions and experiences [8].

Successful businesses demand high-performing HRM practices and effective KM capacity. Those are two complementary processes and interdependent constructs in the theory of knowledge-based view of the firm as they have a direct link with strategic management and strategic HRM [3, 8]. At the firm-level, the theory suggests that organizations must make investments in developing the human capital of their workforce in order to increase firm performance [6]. Svetlik and Stavrou-Costea [10] demonstrate the benefits of using an integrative approach between HRM and KM, where one reinforces and supports the other in enhancing organizational effectiveness and performance. Gope et al. [8] argue that HRM practices can improve management process at the organizational level by increasing employees' skills and abilities, influencing their behavior and attitudes and increasing their motivation and learning capacity, and through facilitating the development of competencies. Specifically, the contribution of HRM to KM is at the high end of the value chain as it primarily creates and sustains a culture that fosters innovation,

creativity and learning [5]. A collection of research articles explores how HRM and KM are interrelated and provide empirical support for such a connection, and many will be highlighted in this review. The implicit assumption is that HRM and KM should still come closer together.

To this end, this chapter examines developments in research on KM and HRM linkage and then seeks to elaborate on their implications for practice. The chapter is structured as follows, a background to conceptualization, approaches and strategies of KM, and then the role of HRM in supporting various KM strategies.

2. Knowledge and knowledge management

In order to understand KM, the underpinning idea of the knowledge concept needs to be examined and understood, as differing perceptions of knowledge tend to shape the various KM perspectives. Broadly, the knowledge concept is debated among two main groups: objectivists and those who adopt "epistemology of practice" [11]. This categorization in Ryle (1963), cited in Nilsson and Ellström [12], is referred to as a "theoretical component" and a "practical component". Objectivists view knowledge as an object that can be referred to as declarative, propositional or codified knowledge and can be managed separately. Objectivists classify knowledge into various types and provide models of how to manage their interactions and transformations. The most popular categorization is the differentiation between explicit and tacit knowledge, for example, see [13]. Another common labeling is concerned with where knowledge is situated. It differentiates between personal and organizational knowledge. Organizational knowledge is infused in the organization itself, whether systematically through procedures or unsystematically through culture [14]. Their main philosophical approach is dualism, which depends on classifications, taxonomies and contingencies [15].

Alternatively, members of the "epistemology of practice" propose that knowledge is tacit in nature and is unlikely to be transformed fully into explicit knowledge. Practical knowledge or "know-how" is associated with experience, is implicit or expressed only in practice, and is thus inseparable from actions [12, 15]. Even if tacit knowledge was partially transformed into explicit knowledge, it will unavoidably contain tacit aspects. Moreover, even if employees are willing to express the knowledge they are in possession of, the likelihood is that they know more than they initially realize. In this sense, knowledge cannot be perceived as a separate object from the knower. "Epistemology of practice" follows a duality philosophy that depends upon structurational models, theories of practice and pragmatism [15]. The most important factor here is the personal nature of tacit knowledge, which requires the willingness, on the part of those workers who possess it, to share and communicate it [16].

Differing perspectives of what knowledge is lead to differing KM formulations. Reviewing existent various KM definitions and categorizing them based on defining the nature of knowledge, reflects the basic assumption of two paradigms that have been labeled differently. These two paradigms can be illustrated in a continuum with a range from IT-based/Hard/Calculative/Mechanistic/Scientific paradigm to a Social/Organic/Soft/Humanistic one. In reality, juncture and co-proximity orientations of each paradigm stem from ontological and epistemological assumptions on KM's nature [17]. Those two paradigms lead to two KM approaches/perspective. The first is IT-focused, where organizations approach KM in a mechanistic, systematic and techno-centric way to enhance knowledge integration and creation [2, 17]. The second is HR-focused, where firms' orientation to KM is more ecological-focused and people-centric, aiming to increase employee interaction and to flourish employee behaviors and an organizational culture that enhances KM activities such as knowledge sharing and creation [2, 17].

The IT perspective perceives KM as a process to store information into databases logically and make knowledge accessible [11, 18]. With this in mind, the main KM goal here could be seen as the codification of knowledge. This codification step is believed to minimize the risk of knowledge loss and maximize knowledge sharing, protection and utilization. A major criticism of IT usage in this context is that it deals with knowledge as information, i.e., it separates it from the knower. However, even if this could be considered "doable," there are still other factors to be considered. The "interpretive flexibility" symptom is one of these factors and is a symptom that reveals itself when an employee is contributing or interpreting information.

In contrast, the HR perspective emphasizes the point that IT solutions are information providers only. They are considered to lack comprehension, be vulnerable and not to encourage trust and loyalty among the workforce of a company. The quintessence of the HR perspective is based on interaction, networking, direct tacit knowledge-sharing and building a knowledge-sharing/creating culture [19]. Knowledge-intensive organizations need to develop a culture that promotes organizational learning; that encourages innovation and the development of novel systems and processes, products and services [20].

KM approaches take an organizational focus in order to optimize organization design and workflows [2]. The approach and perspective to KM can be considered essential to forming a KM strategy. Decision makers' attitude towards the knowledge concept, KM perspective and their managerial philosophy translates into a KM strategy. Alignment between organizational, HRM and KM strategies is a key element for organizational management in the knowledge era [7]. So, in order to operationalize KM into a strategy, we need to understand how organizations view KM.

The predominant view among academics and practitioners seems to be that KM is a "process"; a set of interrelated activities that should be facilitated—mainly through informal mechanisms that are supported by leadership styles and organizational practices, for example, see [15]. The process aims to make the maximum use of knowledge existent within organizations. Hosseingholizadeh [17] on the base of reviewing 32 KM models, found that nine main components (core knowledge activities) that can be viewed as a process of KM. Those are goal setting and knowledge identification, creation, acquisition, evaluation, organization, preservation, retention and update, sharing, application, and finally KM effectiveness evaluation. She added that this process-based approach is vital to improving knowledge work activities.

Following the IT and HR perspectives, Hansen et al. [21] proposed two main strategies: codification and personalization, respectively. Each stresses various KM activities and their interrelations and management.

Codification aims at codifying and storing knowledge with a high dependency on IT for further reuse. Its competitiveness lies in the ability to deliver fast, reliable and high-quality solutions, which are usually mature services and competitively priced [21]. Personalization refers to the development of tacit knowledge that is based on employee insights, intuition and personal skills for solving complex problems. Such knowledge is mainly shared through direct person-to-person contacts. Dialogs, learning histories and communities of practice are among the techniques that have to be used in order to facilitate tacit knowledge sharing. Personalization and explorative learning are closely related, where explorative learning is associated with complex search, basic research, innovation, risk-taking and more relaxed controls. The stress is on flexibility, investment in learning and the creation of new capabilities [22]. Personalization competitive advantage is creativity and innovation in supplying unique and customized services that can be priced at high-profit margins [21].

Hansen et al. [21] highlighted that the two strategies differ in addressing the competitive strategy, economic models, IT and HR. This account stresses the need for the best fit between HRM practices an organization's approach to managing knowledge work [22]. Realizing that, in reality, organizations usually use a combination of the two strategies, Hansen et al. [21] argued that one strategy will be used to a greater extent whilst the other one is relegated to a more supportive role. They claimed that one should be stressed or else the KM strategy's focus will be confusing and will lead to failure and inconsistency with the organizational strategy. The codification strategy and low-cost strategy, for instance, both focus on effectiveness, lowering cost and standardization. The combined KM and general strategy of this kind are called exploitative strategy. Similarly, personalization strategy and differentiation center on new capabilities, innovation and new ways of working. This kind of KM and general strategy is termed as an explorative strategy [22]. Both strategies have the capacity to be successful, if the correct strategy is chosen according to the organizational situation.

However, many scholars criticized Hansen et al. [21] claim that either personalization or codification should be dominant. For example, Edwards et al. [23] found that many practitioners believe that a combination of both strategies should be utilized and should be considered to be of equal importance. Support for the latter observations is visible in a socio-technical approach laid down by Pan and Scarbrough [24], who suggested a multi-layered interaction model for KM. The model takes into account the following facets: infrastructure, info-structure and info-culture.

Based on previous discussions, it can be deduced that there is a logical sequence that links knowledge concepts, KM perspectives and KM strategies (see **Figure 1**). If a particular person favors the objectivist approach, then ultimately the KM aspect aims at transforming tacit and personal knowledge into explicit and organizational knowledge. Following on from this, the IT approach is adopted, with the eventual use of the codification strategy. Alternatively, if the decision makers are supporters of the "epistemology of practice" philosophy, then they believe that knowledge

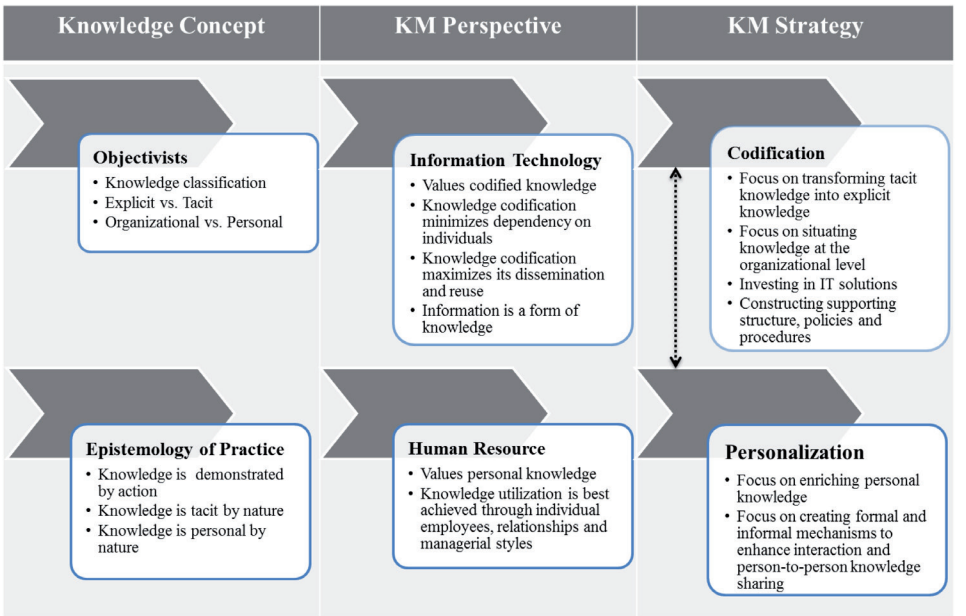

Figure 1.
The knowledge management sequential model.

exists within individuals and is tacit in nature. The decision makers are then likely to support an HR-based approach to KM with an underpinning personalization strategy. It has been noted, however, that these two approaches are not mutually exclusive and completely independent of one another. Alternatively, Edwards et al. [23] suggested a combination strategy; where opposing perspectives and strategies are held on an equal footing. It then follows that if the premise of this approach is followed then the debate concerning the knowledge concept is of less concern.

3. Human resource management and knowledge management: a review of extant literature

Knowledge as an asset and KM as a process has received considerable attention in the strategic management and strategic HRM-literature, as a means to attain competitive business advantage [3]. KM's effectiveness often depends on HRM processes and on the quality of management's strategic alignment (organization, people and knowledge). HRM must be analyzed as a factor influencing KM implementation [7]. From the strategic HRM perspective, a set of integrative HR practices that support a firm's strategy produce a sustainable competitive advantage. Human capital (skills, knowledge and behaviors) and organizational capital (routine, systems, tacit knowledge) are the most cited resources in the resource-based view literature, which are gained over time and make it difficult for competitors to interpret and imitate [25].

HRM is understood here as a set of policies, practices and systems that influence behaviors, attitudes and performance of organizational members, aiming to increase their competitiveness and learning capacity, to the extent of creating a culture of learning. For example, Gope et al. [8] found that HRM practices, which enhance individual learning, motivation and retention of employees with an intention to boost knowledge-acquisition and knowledge-sharing, improve organizational performance. Their findings also showed that the traditional roles of HRM practices are evolving to support the achievement of talent management goals such as talent identification, talent development and talent engagement. As suggested by Bontis and Serenko [26], employees' capabilities depend on their training and development as well as job satisfaction levels. Arunprasad [25] noted that strategic HRM practices are significantly and positively related to learning outcomes. For instance, staffing and performance evaluation are the factors that significantly contributed to learning dynamics in software firms. Therefore, according to Theriou and Chatzoglou [16], firms pursuing best HRM practices achieve higher performance through designing HR practices that support KM and organizational learning capability, and in return, the creation of organizational capabilities. It is suggested that best HRM practices are not only related directly to organizational capability, but also indirectly related to the processes of organizational learning capability and KM. In fact, HRM acquires a key role in potentiating and facilitating both KM and learning processes [7]. Thus, if HRM is about managing people effectively and if people's most valuable resource is knowledge, then HRM and KM are closely interrelated [10].

Studies of an alternative point of views have examined the type and quality of HRM and KM linkages. It is widely accepted that HRM is not KM [27]. For example, Teece (2000), cited in Svetlik and Stavrou-Costea [10], argues that KM is more multifaceted than HRM because it involves managing intellectual property rights and the development and transfer of individual and organizational know-how. However, Svetlik and Stavrou-Costea [10] stated that HRM and KM share common activities, goals and strategies when creating work units, teams, cross-functional

cooperation, as well as communication flows and networks inside the organization and across its borders. They proposed an integrative approach between KM and HRM, so that if we compare the KM cycle with HRM processes, we will find that various activities are shared between both.

The literature has for a long time supported the claim that employees are the most important organizational asset, especially when it comes to achieving an effective KM process [12, 22, 27, 28]. Employees are the vehicles for knowledge creation, sharing and implementation. Nilsson and Ellström [12] emphasized that the general organizational success is increasingly associated with identifying, recruiting, managing, and retaining high performers or talented individuals to meet the present and future demands of an organization. Therefore, the core purpose of the HR function is to develop, select and hire people, train and develop the staff, evaluate their performance, reward them and create a culture of learning to support and achieve the business strategy [22]. In fact, human capital advantage stems from having more capable people than the competition [29]. Shaw et al. [30] argue that human capital can meet the criteria of sustained advantage, when HRM investments are aimed at increasing the knowledge and skills of the workforce and also to tightly integrate the human capital.

Therefore, HRM activities, such as recruitment and selection, education and training, performance management and reward systems, are essential for managing knowledge properly [28] and contribute instrumentally to improving the knowledge flow, i.e., acquisition, transfer and its integration in the organization [7]. Zhou et al. [31] found that several HRM practices (namely, internal communication, training and performance appraisals) play an important role in helping firms to build absorptive capacity and to enhance knowledge transfer during mergers and acquisitions. Knowledge sharing practices must be integrated into strategic business objectives, human resources practices, and the organization's culture so as to encourage and support on-going collaborative behavior [32].

Some scholars have highlighted recently "Knowledge-based HRM" including those HRM practices purposefully designed to enhance knowledge processes within an organization [33] with the need to reposition its functions, orienting them towards strategic capacities of knowledge. That is to manage knowledge workers, to construct a value from knowledge and to assess the risk of knowledge loss [7]. For instance, Hussinki et al. [34] divided HRM practices into several categories such as heterogeneous workgroups and brainstorming commitment-based HR practices (e.g., employee empowerment and career development) and knowledge-based (e.g., recruiting, professional development, and employee retention).

Broadly speaking, HRM should be aligned with KM and organizational strategies, especially as there is a positive relationship between HRM and those of performance and innovation [21, 35, 36]. HR policies should also be evaluated on their ability to foster the application of personal knowledge for the benefit of the firm. Gourlay [37] added that the employees' willingness to cooperate with KM initiatives is likely to be dependent on HRM policies and procedures. Moreover, Kase and Zupan [35] commented that the performance of HRM should be linked with learning, innovation and intellectual capital. It should focus on building social capital and knowledge networks. An advantage of using HRM is that it is built through the maintenance and development of human capital and organizational processes. This gives it a major role in managing social networks, which are essential in transferring tacit knowledge. Hosseingholizadeh et al. [38] added that HR practices have a vital role in supporting knowledge-work within organizations, especially that they empirically confirmed that motivation, ability and the opportunity provided to knowledge-workers influence knowledge application, sharing and creation. HR practices should focus mainly on enhancing employees' ability and motivation for them to contribute individually to KM activities.

Some scholars have stated previously that the HR section in an organization is the one best equipped to handle KM initiatives due to the fact that the activities of the department itself do not directly conflict with the KM initiatives [39]. However, whether or not the HR section is chosen to undertake this role is based on the performance of the department, i.e., the better it performs, the more trust is generated within the organization and the more likely it is to be chosen as the best candidate to roll out KM initiatives [40]. It should also be borne in mind that HRM practices are not exclusively actioned by the HR department per se; top, medium and line managers are highly involved in HR practices as well. This leads to the assumption that, even if HR departments are assigned to play a leading role in KM, strong results are not expected exclusively from them [19].

HRM at its strategic and functional levels should be aligned with organizational and KM strategies and practices. The personalization approach usually aids decentralized, explorative and double-loop learning along with organic organizational strategies. This is different from the codification approach, which aids to a greater extent centralized, exploitative and single-loop learning along with standardization strategies [22, 41]. HRM practices in an organization are adjusted in line with which approach is adopted. In the literature, it is not clear exactly how the combination approach, when used, handles the different KM approaches and organizational strategies in the context of translating their goals into HRM practicalities. Thus, the chapter focuses on the personalization and codification strategies while assigning the contextual HR practices under each strategy.

To understand the overall effect HRM practices can have, it is best to view them in combinations [41]. Horwitz et al. [42] stated that HRM practices should be aligned with HRM, KM and organizational strategies but also noted that other organizational factors could also be considered to influence the development of HRM practices. These factors could be the size and nature of the industry, the organizational characteristics of a firm and the ownership structure of a firm, along with cross-cultural factors and cultural differences. The competitiveness of human capital has also been claimed to have an effect on the selection of HRM practices, which inevitably goes on to affect KM [43].

In short, various HRM practices do have a noticeable effect on KM [36, 40, 44–46]. There are, of course, numerous HRM practices that exist in current literature; however, only six HR practices that have been discussed in depth in previous literature are analyzed in this article. These six HR practices are: recruitment and selection, compensation management, training and development, performance management, retention management and career management. Although each will be discussed separately, the alignment of each practice with others under each KM strategy is highlighted in **Table 1**. In this study, according to Kianto et al. [33], traditional HRM practices have seen from a knowledge-based perspective and integrated with KM. The nature of these practices is outlined in the following sections.

3.1 Knowledge-based recruitment and selection

Constantly new and changing demands in the world of work create challenges for HR professionals attempting to identify and develop relevant talent. However, the identification and development of talent have generally been based on a technical rational perspective that is driven from labor economics [12]. But, it seems that traditional recruitment and selection practices can block knowledge sharing between groups or departments in firms organized according to the functional principle [22]. In a knowledge-intensive labor market, it is increasingly difficult to assess the competence of individuals in relation to the requirements of specific jobs [12].

	Codification	**Personalization**
HRM	Alignment with the codification and organizational strategies Focus on retrieving and contributing to explicit knowledge Focus on short-term contributions Catering for centralization, exploitative, single-loop learning and standardization strategies	Alignment with the personalization and organizational strategies Focus on knowledge sharing and creation and innovation Focus on the short-term, medium-term and long-term contributions Catering to decentralization, explorative, double-loop learning and organic strategies
Recruitment and selection	Limited sets of skills and experience for most new recruits with a focus to fill "job vacancies" Highly qualified "key employees" with demonstrated technical knowledge The tendency towards seeking a cultural fit	Focus on filling "knowledge gaps" Highly qualified new recruits with knowledge depth and breadth, ability to learn and willingness to share knowledge The tendency towards achieving a flexible and diversified culture
Compensation management	Individual incentives Extrinsic rewards Short-term incentives	Both individual and group incentives Intrinsic rewards are primary while extrinsic ones should satisfy Both short-term and long-term incentives
Training and development	For most, training subjects are limited to procedural knowledge and IT skills needed to accomplish current tasks Formal T&D Internal T&D Structured T&D	Training subjects are diversified and address technical and interpersonal skills needed for current and future tasks The training aims to strengthen the depth and breadth of knowledge embedded in employees Informal T&D is primary and formal T&D is secondary Both internal and external T&D Unstructured T&D is primary and structured T&D is secondary
Performance management	Focus on basic business and IT knowledge Focus on individual performance Utilized to identify underperformers Underperformers face a high risk of dismissal	Focus on the breadth and depth of knowledge/skills/competencies Focus on individual and group performance Utilized to locate the knowledge gaps and to form personal development plans Underperformers are tolerated
Retention management	Low retention rates Retention plan focuses on a few key experts Knowledge-retention orientation through codification	High retention rates People-retention orientation Direct knowledge-sharing between leavers and successors
Career management	Limited progress for most employees Rare hierarchal and lateral movements	Promotion is encouraged and, at many organizations, it is a must Dual career ladders Early lateral movements Potential shortage in managerial skills due to emphasizing technical career ladders

Table 1.
The role of HRM in supporting various KM strategies.

The recruitment and selection process are what provide the input of human capital. From a KM standpoint, recruitment and selection should aim at filling knowledge gaps, which allows an organization to adopt a more flexible approach, as opposed to simply "filling jobs" [47]. The aim of the recruitment process is to attract, obtain and create knowledge [42]. Moreover, Arunprasad [25] found that staffing is a significant factor contributing to the learning dynamics and innovation within firms—both at the individual and group levels.

Firstly, within the personalization strategy, knowledge workers' essential abilities and skills required for efficient KM, which are: a commitment to learn and develop, creativity, the ability to deal with complexity, adaptability and cooperation [33, 47]. Smith [36] added to this list lateral and visionary thinking, demonstrated skills and abilities, resilience, the capacity to be a team player and a willingness to share accrued knowledge. Further to this, Robertson and Hammersley [48] identified high specialization, knowledge in other disciplines, commercial awareness and innovative ability as strong characteristics on which to base a recruitment decision. Narasimha [49] also stressed demonstrated depth and breadth of knowledge as being important. Taylor [50] stated that new recruits must also have altruistic behavior. Arunprasad [25] observed that selection criteria of new recruits test for learning ability of individuals, decision-making approach, a desire to share tacit knowledge and readiness to take additional responsibility. In addition to the aforementioned abilities and competencies, it could be argued that the higher the occupation level recruited for under the personalization strategy, the more the hiring decision accounts for the intensity of industry experience and the demonstrated depth and breadth of specific bodies of knowledge. In short, knowledge-based recruitment involves a strong and explicit focus on choosing candidates with relevant knowledge, learning and networking capabilities [33].

As for the process of recruitment and selection under a codification strategy, most new recruits target to fill vacancies at the entry-level positions. Hansen et al. [21], stipulates that new recruits—at junior levels—need limited specialized knowledge for their employment as their job description is mainly concerned with extracting knowledge from databases. Accordingly, the selection decision focuses on the candidates' abilities and skills to effectively utilize codified knowledge, to abide by preset work processes and procedures and to be productive within a short time frame after joining the organization. However, when it comes to the few experts that organizations depend on to design products and services, formulate work processes and procedures and ensure customer satisfaction, the selection processes focus on their demonstrated experience and depth of knowledge that could be directly exploited after joining the firm. Consistently, an effective selection is vital to acquire new knowledge and increase innovation for top key employees in the hotel industry [51]. That said, they found that this is not true for low-skill workers; where recruiting them will not have a significant effect on increasing the human capital. Firms which adopt the codification strategy, the development of technological solutions is encouraged, particularly in electronic recruitment and psychometric testing [22, 52]. Therefore, based on the preceding analysis of required KSAs under each strategy, it could be argued that the recruitment and selection process is more stringent for companies that adopt a personalization strategy as opposed to those that adopt a codification strategy.

Another major debate in relation to the recruitment and selection process is concerned with so-called "cultural fitness." Studies highlight the importance of a fit between new recruits and the organization's knowledge culture. They stress a fit between organizational culture and hiring of suitable personalities, as well as the socialization of individuals into the culture of the firm [22]. Others emphasized the need to select individuals capable of adapting to different cultures rather than

fitting an existing culture [47]. The logic behind this thinking is that the organizational culture of a firm may change in essence over time, rather than remaining fixed and static. Furthermore, Currie and Kerrin [53] placed emphasis on the importance of new employees having a good level of general business knowledge rather than simply having the functional skills required for the role, the reason being that employees with good general business knowledge can more effectively "bridge" the cultural gap between organizational entities. To present a different point of view, Kase and Zupan [35] emphasized the importance of recruitment and selection in being able to find people who fit the organizational culture and support knowledge networks. This "cultural fit" perspective was criticized due to the potential risk of duplicating employee skills, which in turn could limit the ability of newly recruited employees to contribute their new skills to the knowledge base of the company [47]. It may be hypothesized from the literature that the "cultural fit" approach to recruitment is more suitable for companies that adopt the codification approach to KM, whilst recruiting employees who embody cultural diversity and flexibility would be better suited to companies that adopt the personalization approach to KM. Thus, the recruitment process for all the companies considers the level of fit between the individual and the organizational culture. This influences the cultural aspects of the socialization process of individuals within the organization, as well as encourages and supports the interchange of knowledge among the old and new members [8].

Adding to the work of Hansen et al. [21], Haesli and Boxall [19] highlighted that the organizations that adopt the codification strategy to KM suffer from a relatively higher labor turnover than those that follow the personalization strategy. So, to maintain a level of staff necessary to sustain the organization, a large portion of the duties undertaken in the HRM department will be based around the recruitment and replacement of people to fill the natural vacancies caused by high staff turnover. The working environment in a company also tends to repress the full range of skills an employee possesses. This is due to the fact that there are often few opportunities to utilize such skills, as these types of companies often have an expected dependency on IT and existing information and solutions. These kinds of companies, however, do tend to exhibit a higher level of overall HR spending due to the relatively larger expense of training and recruiting new employees along with having to live with reduced productivity during the induction periods of new recruits. Gope et al. [8] found that most of the companies tend to focus on the use of employment agencies to recruit talented employees and introduce new knowledge into the company. However, also the internal recruitment process is adopted, mainly for promotions and change of positions.

3.2 Knowledge-based compensation and rewards management

Arguably, compensation management acts as an effective tool to motivate employees to acquire, use, share, transfer and create knowledge [33, 36, 39]. Compensation management system should recognize innovation, risk-taking and group collaboration [46]. Furthermore, some scholars have suggested that relative compensation should also be based on contribution, knowledge and skills without sole emphasis on hierarchical position, i.e., taking into account teamwork and flexibility rather than functional and individual measures [54, 55]. Despres and Hiltrop [54] added that rewards should be engineered based on employees' perceptions and not those of managers, with proper justification and communication.

One of the main arguments in this area is focused on whether individual or group incentives should be utilized as a source of motivation to stimulate KM activities. Kase and Zupan [35] stressed the importance of group incentives, arguing that they

encourage network cohesion. Yet, they also acknowledge the importance of all incentive levels being included in the overall compensation of individuals. Laursen and Mahnke [41] state that individual incentives serve to underline the strong performance of individual employees when carrying out personal tasks. Yet, they also stress that the process of allocating individual incentives should be reliably measured or the process could be viewed as being complicated and lacking in fairness. Siemsen et al. [56] graded compensation management based on inter-employee linkages within workgroups. These gradings can be categorized under three group headings: outcome, help and knowledge linkages. The first group, outcome, tends to emphasize the coordination of the group whilst the latter two promote cooperation. They found that if employees are "outcome-linked" then individual incentives were found to work best; however, if the employees are reliant on helping each other (or "help-linked") within the group to complete the goal, then group incentives produce an optimal result. When employees are knowledge-linked then both individual and group incentives are considered vital and complementary. Individual incentives are important in encouraging an employee to put his/her acquired knowledge into use, while the group incentives encourage possessors to share their knowledge. Siemsen et al. [56] made similar findings that add to Taylor's [50] contribution in which he found that group-based incentives promote a greater degree of co-operation between employees. Moreover, Quigley et al. [57] found that group incentives are stronger in promoting knowledge sharing from the provider perspective when supported by organizational norms.

Therefore, whenever tasks are interrelated, group incentives are perceived as a better choice of compensatory measure for employees. This holds true whenever the standardization level is low and the output process is complex. Another potential drawback to individual incentives is that they limit potential knowledge and information sharing, i.e., they create an atmosphere of secrecy. When individual incentives are used by organizations, they tend to be used to reward the achievement of personal and short-term goals. Overall knowledge creation and the achievement of long-term objectives are rewarded through group incentives. Thus, the literature indicates that group incentives are more suitable than individual ones when interaction and direct tacit knowledge sharing are required. In this fashion, group incentives then seem to serve companies that adopt personalization strategies the best; however, individual incentives are not wholly excluded: rather they are relegated to playing a secondary role. If individual incentives were dominant in this type of organization, then employees would be encouraged to push for an outcome favorable to themselves as opposed to pursuing the group goal. For companies with a codification-based strategy, personal incentives are more commonplace. This is due to the fact that interaction between employees is less necessary to the company goal and personal effort in extracting explicit knowledge is considered more essential.

Another issue related to compensation management is whether intrinsic rewards, extrinsic rewards or a combination of the two should be given to personnel completing KM-based tasks. For this circumstance, it seems that the characteristics of personnel described in knowledge worker-based literature are in alignment with those described in the literature published about the personalization strategy. Smith [36] claimed that knowledge workers value nonfinancial incentives more than financial ones. Consistently, Zhou et al. [31] found that performance-based compensation (extrinsic) has an insignificant effect in supporting absorptive capacity and knowledge transfer in mergers and acquisitions. Additionally, Despres and Hiltrop [54] suggested that effective compensation systems during the knowledge economy era should place emphasis on social and intrinsic needs rather than extrinsic needs (which should be regarded as secondary). Not underestimating extrinsic motivators, Hosseingholizadeh et al. [38] empirically demonstrated that intrinsic motivators have much more influence on knowledge-work than extrinsic motivators. Lee and Ahn [58], in addition to

this, argued that intrinsic rewards tend to support the vision of a company that holds a personalization-based approach, whilst formal extrinsic rewards tend to support the vision of a company that holds a codification-based approach.

Whereas Vicere [59] stressed that knowledge workers should be paid fairly and mostly want part of the organizational profit through methods of equity sharing. Gope et al. [8]' findings also stated employees are expected to repeat positive behavior in obtaining rewards and recognition by the company. Thus, the firms use compensation and rewards as tools to elicit, enhance and maintain the desired knowledge sharing behavior of employees.

Many scholars stated that compensation systems should strike a balance between intrinsic and extrinsic rewards, for each addresses a different "need" [39, 58]. Managers can use both tangible/financial (e.g., bonuses and one-off rewards) and intangible/nonfinancial incentives (e.g., status and recognition) to motivate employees to share, create and apply knowledge [33]. This is consistent with the practices of most companies, where this kind of rewarding system motivates and supports individual employee's performances through better learning and commitment that increase the motivation to share and create new knowledge, as already confirmed in other studies [8].

Another debate in this topic area is that concerning the use of short-term and long-term rewards. Many argue that using a combination of the two is the most favored method for companies, as the short-term rewards act as a direct motivator encouraging individual and group contributions, whilst long-term rewards are important for the retention of employees by rewarding them for long-term organizational performance [47]. Olomolaiye and Egbu [39] highlighted the importance of long-term incentives in the process of grouping key contributors with the organization. It can be hypothesized that short-term incentives would be utilized to a greater degree in the codification-based companies; however, both reward types seem important in personalization-based and combination-based companies.

3.3 Knowledge-based training and development

Training and development allow the employees of an organization to acquire and develop key skills that improve personal and organizational performance. The process itself is viewed by many scholars as being an effective HRM practice that aids the implementation of the KM strategy, activities and outcomes. HRM-related research on KM is chiefly focused on the transfer of knowledge by training [60]. Knowledge transfer concerns various forms of learning, the creation of a knowledge sharing climate, the establishment of training units which assess and analyze training needs, provide and evaluate training, and lead towards learning organizations [10]. Application of training is important to develop employees' learning capabilities and provide a common language and shared vision. This would develop a high level of self-efficacy so that employees may feel more assured of their abilities and will be more likely to exchange knowledge with others, thus fostering the acquisition of new knowledge and the dissemination of individual knowledge within the firm [8]. Training and development has a positive effect on increasing human capital and subsequently innovation within the hotel industry [51]. They argued that employee development tends to be much more effective than recruitment in increasing human capital. Similarly, Keat and Lin [61] found that talent development has a mediating effect between knowledge management and organizational performance in Malaysian private colleges. They added that employee development is more important than retention management, as their findings found no support that talent retention has a mediating factor between knowledge management and organizational performance.

To begin with, this section investigates the subjects of training under each KM strategy. Training subjects under personalization are more diverse than under codification and include subjects that strengthen employees' technical and interpersonal skills. Yahya and Goh [46] also declared that training should include some leadership skills and the ability to manage change as well as further training in the use of creativity, problem-solving skills and quality initiatives. Training is an important way of complementing the breadth and depth of knowledge that already exists in individuals in line with the KM strategy of the organization (which should identify the current competencies and the competencies that are desired in the future) [49]. Similarly, Kianto et al. [33] stated that knowledge-based training and development involve regularly developing the depth and breadth of employees' knowledge and expertise, personalizing training to fit particular needs and, finally, ensuring continuous employee development. In order to stay at the forefront of their professional fields they must be constantly aware of developments within their specific disciplines and professions and they need to participate in activities that offer opportunities to further their own professional development [22]. Smith [36] also added that developing a breadth of knowledge helps to create a strong general ability within employees, whilst developing a depth of knowledge produces employees with specialist knowledge. Training should be suggested as a means of focusing on growing the exploratory knowledge of employees instead of simply concentrating on developing traditional exploitative knowledge [36]. For skilled workers, providing team-based training, project-oriented training, on-the-job training, leadership development and other programs that are designed to improve quickly the employees' learning capability are vital [8].

On the other hand, the vast majority of training under a codification strategy is concerned with equipping employees with the technical skills that are needed for employees to be functional within their current role. The main training subjects focus on gaining procedural knowledge and enabling employees' to effectively utilize IT.

The training and development process is generally classified as being either formal or informal, with each classification contributing differently to KM. Brelade and Harman [47] saw formal training as an aid enabling employees who have the relevant skills to utilize information, create knowledge and work in teams. Smith [36] highlighted the importance of educating employees to enable them to understand the knowledge concept and the approach to knowledge that their company has adopted. This can be achieved by using awareness programs and by informing the employees within the company of new processes and procedures. The training should also include the appropriate usage of IT, and employees should know how and what knowledge should be located, extracted, used and shared. Moreover, as the mentors and coaches of employees, managers should be well trained especially when it comes to delivering feedback on how they can improve and foster creativity [59]. According to O'Neill and Adya [32], effective communication strategies by themselves are insufficient to transform employees into active knowledge workers. Managers must educate employees on how to share knowledge in ways that benefit the organization as well as their own careers. This necessitates familiarity with effective knowledge sharing practices, processes, and supporting technologies [32]. Direct training also involves building people skills such as networking, team building and effective communication.

As for informal training and development, Olomolaiye and Egbu [39] highlighted its importance in strengthening knowledge sharing and competencies such as through mentorship and on-the-job training. They suggested that employees should be involved in different teams, to help build their cooperation and knowledge-sharing capabilities, as an excellent informal training method. Alonderiene

et al. [62] stated that up to 70 or 90% of workplace learning takes place at an informal level. Kase and Zupan [35] also stressed that employees' skills can be developed strongly if they are moved between different workgroups to experience different working patterns. Filius et al. [44] also state that a high level of effective learning takes place when employees are involved in innovative projects. Smith [36] added that partnership working, peer assistance and a strong apprentice-mentor relationship all contribute to effective informal training. Cai et al. [63] found that informal network, not a formal one, has a significant impact on employees' performance. A study conducted by Manuti et al. [64] showed that communities of practice are effective learning spaces; beneficial for both individuals and organizations. From an individual perspective, communities could be beneficial in developing professional skills, a stronger sense of identity and finding continuity even during discontinuity and change. From an organizational perspective, communities of practice could help drive the strategy, start new lines of business, solve problems quickly and transfer best practices. Sprinkle and Urick [65] suggested that improved learning will occur in organizations that facilitate targeted socialization, respond to new preferences and trends in development programs while leveraging multiple approaches including informal/individualized initiatives (such as on-the-job education, mentorship programs), and embrace multiple types of volunteering activities.

The majority of literature that focuses on informal training tends to emphasize its role in building interaction, tacit knowledge sharing, creativity and innovation, which directly contribute to the goals of a company that has a personalization-based approach. Formal training is still important in an organization that has adopted this strategy type, but it tends to play a more secondary role. As for organizations that have a codification-based approach, the majority of the training is conducted formally and consists of the teaching of routine skills that are generally basic business- and IT-based.

Also, training can be classified as internal or external. Laursen and Mahnke [41] realized that internal training helps to form effective teams and develop strong team working. Internal training also aids in the externalization (converting tacit knowledge into explicit knowledge) and socialization (sharing tacit knowledge) phases in Nonaka's Socialization-Externalization-Combination-Internalization (SECI) model whilst external training strengthens the internalization phase (converting explicit knowledge into tacit knowledge). Both are essential for knowledge creation and sharing. External training can help employees to acquire new skills and learn about new technologies. However, the training is not usually firm-specific. Varying forms of internal training such as internal seminars and "on-the-job" training are seen to be of greater help in nurturing more company-specific knowledge. Kase and Zupan [35] also stated that internal training helps to build cohesive groups while external training helps to form intra-organizational and extra-organizational networks.

Firms adopting codification strategies tend to hire undergraduates and train them in groups to be implementers, i.e., to emphasize knowledge acquisition, manipulation, and storage, including the focus on technology [21, 52]. Personalization firms hire graduates to be inventors, i.e., to use their analytical and creative skills on unique business problems, and to share and disseminate knowledge [22]. In codification-based firms, employees are trained to achieve specific tasks that generally only need existing firm processes to achieve their goals; therefore, internal training is seen to be sufficient. However, personalization-based firms tend to emphasize knowledge creation and innovation, which often require both external and internal input. Consequently, the dual use of both internal and external training is seen to be favorable.

Moving onto a different aspect of training and development, Robertson and Hammersley [48] stated that training and development needs should be specified by the employees themselves due to the fact that they, more than anyone

else, should have an idea of their strengths and weaknesses. Employees should be trusted with their choices and consequently make it their own personal responsibility to integrate training activities into their schedule without interfering with their workload and productivity. A parallel view of this theory was found by Filius et al. [44], who noted that firms seem to prefer unstructured training. However, many scholars argue that such freedom offered to workers should be infrequent and training direction should be disseminated from the top of an organizational hierarchy downwards. There are also positive aspects to such structured training, which consist of the ability to build a common understanding of a workforce that helps lower "barriers" when developing a work culture. Bearing these factors in mind, it can be hypothesized that structured training best serves firms that have a codification-based approach. For firms that have an underpinning personalization-based strategy, unstructured training can act as a primary teaching tool, with structured training acting as a secondary training method.

3.4 Knowledge-based performance management

When compared with other HRM practices, performance management seems to have the strongest impact on the activity of knowledge sharing within an organization [53]. Criteria that are measured send a message to employees of what is valued in the organization; therefore, performance management can hinder or support KM activities within and across organizational agents. Hannula et al. [45] stressed the use of this practice in measuring various competencies, as it tends to be a strong indicator for assessing KM activities within a firm. Olomolaiye and Egbu [39] went one step further by stating that performance appraisal should measure its outcome in terms of knowledge sharing and not simply through inputs and processes. Yahya and Goh [46] also emphasized its importance in changing employees' behavior towards KM and also in highlighting the knowing-doing gap. The outcome of such an assessment should then act as an input to the KM process. Additionally, Arunprasad [25] found that performance evaluation, in addition to other HRM practices, contributes significantly to the organizational learning dynamics. He added that performance evaluation contributes to individual and team level learning, which is in line with some of the previous research conclusion.

That said, performance management systems can inhibit knowledge sharing. Along the performance management lines, Currie and Kerrin [53] recognized that varying company departments have differing performance management systems that tend to reflect an individual department's goal as opposed to a company one. This seems to have caused knowledge sharing to be stronger within the company departments but weakened from department to department. Consistently, Edvardsson [22] found that conflict between different functions can be due to the divergent objectives set out for employees in the performance agreements. In this circumstance, the focus should be given to long-term organizational goals such as learning rather than solely stressing the short-term targets set for departmental performance. O'Neill and Adya [32] stressed the need to involve managers to individually motivate workers to share knowledge, especially that knowledge-sharing as an activity tends to be intrinsically motivating to employees on their own and in the moment. Therefore, orientation coaching and mentoring should be provided by managers in addition to including knowledge sharing in performance appraisals.

Olomolaiye and Egbu [39] also argued that performance appraisal should stress intrinsic needs, teamwork and collaboration. Additionally, Brelade and Harman [47] were of the view that the assessment should include the acquisition of new skills and knowledge by an employee and how he or she has taken on new projects and responsibilities, contributed to a community or a team and participated in

developing others. Along similar lines, Narasimha [49] looked at the performance appraisal process as a measurement of innovation level and how an employee has sought to develop knowledge. However, Smith [36] raised the issue of complexity and difficulty in measuring intangible outcomes such as tacit knowledge sharing. That said, Kianto et al. [33] stressed that performance appraisal should focus on development and feedback, rather than taken as an evaluative tool only. Feedback helps to identify gaps between performance and targets.

One of the main outcomes of the appraisal process is the aim to reward employees who contribute positively to KM outcomes and activities. Reasonable failures should be tolerated in order to promote a culture of action and risk-taking [46]. In their case study on a knowledge-intensive organization, Robertson and Hammersley [48] realized that underperformers were endured due to the realization that the knowledge-creation process is inconsistent and unpredictable and holds the possibility that it may not succeed. Olomolaiye and Egbu [39] added that performance appraisal helps to allocate key knowledge holders, which then enables organizations to focus on the retention of those employees. However, all of these aims are based on healthy feedback from management, which requires a high level of specific training for managers on how to develop such skills.

Finally, performance management has been recognized by some as one of the strongest influences on KM as a whole. The topics of debate that have occurred in the literature about this subject can be summarized as follows: how and what is measured in the appraisal process, who should be rewarded and the process to deal with underperformers. In companies with a codification approach, performance management is all about measuring and improving known and expected tasks, which are based around an employee's ability to grasp and implement basic business and IT knowledge. Underperformers can be considered somewhat expendable and easily replaced due to the simple nature of the skills needed for the role. Also, within the codification strategy, efforts associated with systems and technologies are more likely to be recognized and rewarded. Inside such a paradigm, key performance is related to technology, technology application and the volume of data [22]. At the opposite end of the scale, a company with a personalization-based approach is concerned with the breadth and depth of an employee's skills and competencies. Underperformers are tolerated as the tasks they undertake can be considered as relatively more complex, mostly intangible and riskier. Moreover, the personalization paradigm focuses more on people, where key performance indicators are related to people and tacit forms of knowledge as well as the quality of data [22].

3.5 Knowledge-based retention management

Many scholars claim that organizations should value the high levels of tacit and personal knowledge that many people have, and it should be down to HRM to build effectively a good level of loyalty and retention rates [39]. Papa et al. [66] found that employee retention improves the effect of knowledge acquisition and innovation performance. They explained that employee retention increases employee commitment and trust, thus fostering knowledge specialization and fortification and creating an innovation culture. Moreover, employee retention increases knowledge retention and organizational knowledge base. Knowledge retention will even augment when benefiting from the employee knowledge-acquisition.

Developing the knowledge worker's organizational loyalty does appear to be more problematic because of labor market conditions, where the skills and knowledge of knowledge workers are typically relatively scarce, creates conditions for knowledge workers which are favorable to mobility. This is a potential problem because the knowledge possessed by knowledge workers is typically highly tacit [18].

Horwitz et al. [42] found that retention management was a useful tool for retaining organizational knowledge. They added that high retention rates help to protect the cultural fabric, competitive capability and intellectual capital of an organization. Moreover, Kase and Zupan [35] mentioned that, in certain networks, there are individuals who are placed in a central position that makes them essential for KM activities. With that in mind, effort should be made to retain, train and develop such personnel. This could require changing the HR strategy to an organization that is more learning-based. Studies on knowledge workers have found that they tend to have a high need for autonomy, significant drives for achievement, stronger identity and affiliation with a profession than a company, and a greater sense of self-direction. These characteristics make them likely to resist the authoritarian imposition of views, rules and structures [22].

Retention management is currently facing many challenges, one of which was raised by Young [67]—the aging workforce issue. This particular problem has been intensified because of increasing competition to attract younger employees and complications that have arisen from passing knowledge from one generation to another, as well a lack of age diversity in an organization [42]. Some of the solutions that have been suggested for knowledge retention in these circumstances are: the codification of retirees' knowledge, potentially offering them part-time or flex-time jobs, undertaking succession planning, making early identification of potential leaders for the organization and training them in mentoring programs and, finally, phased retirement options. Another issue is the higher turnover rates of knowledge workers. Knowledge workers have higher turnover rates that result in them costing 2.5 times more than other workers due to re-employment costs [42]. It has been noted though that the new generation, generally, tends to have less organizational loyalty [67].

Smith [36] suggested that retention management should be about retaining knowledge rather than people. For this purpose, some organizations have created formal knowledge-retention methods in order to capture the existing level of knowledge held by experienced personnel who are due to leave. Some firms conduct exit interviews and knowledge-capture sessions, while others opt for even more systematic and scheduled knowledge-retention approaches. The knowledge that is acquired by these means can be utilized to set up various beneficial company practices. However, the ability of organizations to transform tacit knowledge into explicit knowledge is still considered to be problematic and there are still many academics who question the effectiveness of using formal methods to capture tacit knowledge.

On the subject of why a company may have a high retention rate, the cause among some knowledge workers is a supportive working environment [48]. They state that recommendations should be made to companies to trust employees to manage their own time and tasks as well as offering them the freedom to choose the projects they are willing to work on based on their judgment of their own ability to contribute to a project. High retention rates could be achieved through motivating employees by using an incentive system that rewards the sharing of knowledge and provides recognition [42]. They added that job satisfaction is the result of a fair salary, the nature of work undertaken and future employability prospects along with good quality relationships with peers. Similarly, Gope et al. [8] found that many companies provide high professional training, career opportunity and high compensation packages to attract the employees and enhance their ability and motivation for acquiring knowledge. If the company succeeds to retain their employees, then the organization benefits from the knowledge embedded within them. Besides, the organizational and dynamic culture based on individual empowerment, reciprocal engagement and flexible benefit encourages employees to continue to work in the same organization. Accordingly, mixtures of rewards are needed to motivate knowledge workers. These include: equitable salary structures; profit-sharing or

equity-based rewards; a variety of employee benefits; flexibility over working time and location, as well as being given credit for significant pieces of work.

For many knowledge workers it is as motivating to have free time to work on knowledge-building projects, going to conferences or spending time on interesting projects, as monetary rewards [22]. Haesli and Boxall [19] realized, through empirical evidence that organizations that follow a personalization-based approach do tend to emphasize the retention of employees as a methodology for maintaining overall competency levels. The retention process can be achieved through understanding employees' particular needs and by meeting their expectations, engineering an adequate compensation system, providing challenging work and autonomy and linking payments to an individual's performance and capabilities. However, firms must be aware that retention is not the "be all and end all," i.e., complete focus must not be placed on only retaining personnel skills as recruiting new employees is still a powerful method of enriching the current body of knowledge in an organization.

Alvesson [68] managed to identify two forms of loyalty. The first is institutional loyalty, which is formed through the working culture, the social norms and supporting practices within a particular group or company. The second type of loyalty is called communication loyalty. It is formed by creating an identity for oneself through a group and by forming strong interpersonal relationships and sharing common interests. Both can be considered important; however, for the knowledge workers group, communication loyalty seems to act as a stronger retention factor. Additionally, Brelade and Harman [47] emphasized the importance of the psychological contract with an employee and the addressing of personal aspirations and lifestyle issues in relation to retaining knowledge workers. They added that knowledge workers are more inclined to leave due to the leadership and managerial styles exhibited in a company rather than salary issues.

Companies with a codification-based approach seem to be less concerned with employee retention, with the exception arising when it comes to keeping key experts who contribute to their explicit knowledge body. Companies that have a personalization-based approach place more value on personal and tacit knowledge and tend to be keener to engage in the struggle for high retention rates. In other words, codification-based companies tend to concentrate on pure knowledge retention whilst personalization-based companies place a greater emphasis on retaining people.

3.6 Knowledge-based career management

Career management is the personal and organizational responsibility for employee professional progression by increasing their knowledge base and allowing them to progress within the organizational hierarchy. The changing nature of work towards knowledge work has resulted in a major transition in the shape of careers and their management within organizations and novel approaches for the management of careers evolve, at both the individual and the organizational levels [69].

Many scholars emphasize that knowledge sharing is enabled through functional teams and individuals who act to decrease the potential barriers between different divisions or departments. Yet, such adjustments, especially when it comes to lateral movements that are needed to form such teams, are somewhat risky in nature, as there is a risk that some individuals may leave their organizations due to this situation [53]. The conscious choice of an employee to leave in this situation is down to their personal preference to stay within their expertise area. Examples of other causes may include fear of losing power and status, lack of awareness of potential benefits and lack of trust. So, it has been suggested that such movements should be

undertaken at the early stages of careers, so as to establish a "norm" within a career plan. This could potentially aid the new recruits from the outset, in forming their internal network and utilizing it as they progress later on.

Hansen et al. [21] suggested that different KM strategies require different methods of career management. Companies that have adopted the personalization approach like to promote upward movements: it is either "up or out" for some. Some scholars claim that knowledge workers have primary responsibility for their own career development [69]. Employee seen as especially valuable to the organization are developed more proactively by the organization and this often includes a stronger role for the organization in planning their careers and facilitating careers moves-now part of 'talent management' [70]. Along the same line, Gope et al. [8] revealed that companies encourage their employees towards self-choice career development and unhindered growth and provide them with flexibility and opportunities to enhance individual learning capabilities for creating new knowledge and sharing it in different functions and divisions. This is consistent with other studies on knowledge acquisition and knowledge sharing. Subsequently, some firms have created two hierarchies as a response to the personal career needs: a managerial hierarchy and an expert-oriented hierarchy. However, the increasing willingness of knowledge workers to stay in their domain of expertise mixed with the onset of increased organizational de-layering (which forces a reduction in the numbers of middle managers), there is a relative drought occurring of managerial talents that are needed to fill senior positions. Accordingly, firms are looking outside their own firms and recruiting externally to fill top managerial positions. This is increasing the personnel cost due to the labor market shortage and the decreasing retention rate.

This is at odds with a codification-based company, where progress is limited due to emphasis being placed on routine job roles [21]. Hierarchal movements are also limited for low-skilled employees. There is always difficulty in sparking interest in career progression in such mundane environments.

Overall, however, most scholars believe that career adjustments should always concentrate on involving KM roles and functions and then altering them to filling the knowledge gaps within the organization.

4. Discussion, recommendations and conclusions

The contributions made by this chapter can be separated into two major areas. The first contribution can be deemed as being the utilization of the KM Sequential Model to produce a logical link between various knowledge concepts, KM perspectives and KM strategies (**Figure 1**). The second contribution can be deemed as the suggestions made, based on the literature review, for the role of various HR practices in supporting different KM strategies (**Table 1**). The chapter suggests an alignment between HRM and its practices and various KM strategies. As many scholars have highlighted, in this study we proposed an integrative approach between KM and HRM, so that if we compare the KM cycle with HRM processes, we found that various activities are shared between both.

The constructed framework of HR practices under each KM strategy assumed that the practices should be consistent in order to best support the organizational strategy towards KM. Arguably, the HR strategy achieves its optimal supportive role by constructing a combination of practices that are consistent and complimentary in catering to the objectives set by the organizational strategy. However, in reality this might not be the case. HR strategies are subject to other forces such as organizational size, available resources, leadership climate, internal politics and power

structures, structural inertia and cultural considerations that might inhibit the alignment of HR practices with the identified KM strategies.

So far, the available literature on the role of HRM in supporting KM theoretically suggests a strong potential contribution for HR practices in implementing effective KM strategies. Various HRM practices were discussed and relationships made with KM activities, although the relationships mooted were mainly theoretical in nature or focusing on a few HR practices to empirically claim such a relationship. Due to the perceived novelty of this research field within HRM specifically and management studies in general, there are many contributions that have the potential to be made in this field. That being said, there is a definite niche for empirical research to be undertaken in this particular area. There is, of course, a probability that undiscovered gaps between theory and practice do indeed exist. Moreover, most of the studies focused on a few HR practices and not comprehensively covered HR practices in supporting KM strategies. Therefore, future empirical studies that look at HR practices as a combination in supporting KM are needed to claim the alignment of HR practices in supporting KM activities in practice and not only in theory.

A targeted empirical research effort is definitely needed to uncover the mechanisms that link HRM and KM and aid the deepening of our academic and practical understanding of the subject. Academically, empirical research will add to the available body of knowledge in the KM and HRM literature and allow amendments to be made to theoretical assumptions. Practically speaking, this effort would help to enforce KM initiatives within firms and it would assist in repositioning HRM in a more strategic position fit for tackling the knowledge economy era.

With the KM strategy and the implications it has for HRM, there is a debate regarding whether organizations should place emphasis on the personalization-based approach, the codification-based approach or a combination of the two. Although this argument may sound theoretical in nature, its empirical consequences are, nonetheless, important. Agreeing with Hansen et al. [21], the chapter indicates complications and inconsistencies when both a personalization strategy and a codification strategy are stressed. This is due to the differing—and sometimes contradictory—HRM practices suggested to support each strategy.

However, the suggestion put forth by Edwards et al. [23] is equally viable, based on a number of reasoning points. Firstly, both standpoints agree that a personalization approach and a codification approach coexist within a single organization, yet with different roles. They can either be rated as being of equal importance or as one method acting as a primary method with the other as a secondary method. Therefore, if Hansen et al. [21] are indeed right, then how can a supportive strategy be highlighted given that the firm places sole emphasis on its primary strategy? Secondly, although a combination approach may indicate an unclear strategic orientation within a company; this may actually be a reflection of the organizational complexity and the need to accommodate different strategies to serve various needs.

Nonetheless, the combination approach is tempting in that it sums up well the benefits of the personalization and the codification strategies. However, if it is practiced then empirical examinations are needed so its implementation mechanisms can be understood. In theory, the combination approach seems more inclined towards a personalization-based approach, with minor differences. So, it can be hypothesized that, within a combination strategy, the HRM and organizational practices of a company with a personalization approach would prevail over those of a company that has adopted the codification approach. Yet, how would contradictory practices be resolved in such a strategy? Also, the adoption of the combination strategy would raise issues, one being equality and fairness based on whether employees are treated differently within one firm.

Moreover, the literature focuses on debating and studying KM strategies at the organizational level. However, this might be a limited perception of reality. Different KM strategies might exist at various organizational levels. Thus, further research studying KM strategies at the intra-organizational level might be useful to address how knowledge is managed at various geographical locations, occupational levels, departments and practices. Subsequently, How HRM practices accommodate for various KM strategies within the same organization? Are HRM practices customized within organizations to support various strategies or are they standardized based on the holistic KM orientation at the organizational level.

Also, it is possible that both the HR and IT approaches within the same organization are weak and underdeveloped. Therefore, under such circumstances, how organizations manage their knowledge to ensure their output quality and quantity?

It is also interesting to further investigate the contextual characteristics under each KM strategy. Hansen et al. [21] focused on the competitive strategy, economic models, IT and HR. Other attributes such as the leadership style, culture type and organizational structure are some factors that might act as forces influencing the KM strategy formulation and implementation.

Another factor that future studies should focus on is the rise of artificial intelligence and its impact on KM and HR practices. It might be that the debate of either having a codification or personalization dominant strategy or the argument of having an equal-dominance coexistence of those strategies are obsolete. New KM strategies might emerge in organizations that highly depend on automation, artificial intelligence and big data, with a mass customization competitive advantage. For example, KM might be leaning towards a more partnership model between human capital and machines and software. Under such a strategy, what will be the role of HRM and how HR practices will be constructed? A parallel influence, related to the increasing embedment and dependence on technology within some organizations is the changing nature of the workplace and work arrangements. For example, the impact of the increasing trends of crowd-workers, virtual employees, teleworkers, dematerialization of workplace, etc., will definitely have an impact on KM and the supporting HR practices.

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