Conceptual paper

Knowledge management, decision-making style and organizational performance

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ABSTRACT

A synthesis of existing Industry 4.0 literature depicts that knowledge management and decision making strategies are crucial factors for organizations. This article highlights the need and develops a framework for knowledge management and decision-making style by reviewing existing management literature. This research proposes a framework that supports the relationship between knowledge management enabling factors (i.e., organizational member's collaboration, T-shaped skills, learning and IT-support) and organizational performance, and the mediating effect of knowledge creation process. The article also propose that decision-making style (i.e., intuitive and/or rational) will moderate the relationship between knowledge creation process and organizational performance. A set of propositions that represent an empirically-driven research agenda, and also describe the relationships between the focal variables are presented to enhance audience's understanding within a business context.

Introduction

Managers are saddled with the responsibility of leading their organizations to achieve objectives and stated goals. This does not only require versatility and prowess, but more adequate knowledge management with excellent decision-making. The term "knowledge" has being viewed and defined from differing perspectives. According to Davenport and Prusak (1998), knowledge is a blend of contextual information, framed experience, expert's experience and value that results in innovation and pristine experience. Knowledge is also regarded as organizational culture, skills, reputation, intuition, and codified theory that influences human behavior and thought (Hall & Andriani, 2003).

Nonaka (1991) classified knowledge into "Tacit" and "Explicit" knowledge based on the ease for coding and transferring the available knowledge. Explicit knowledge is easily transferable and coded, while tacit knowledge is rooted deeply into the system within the organization. In its passive form, knowledge is useless, however, when activated through creative processes for application, replenishing and sharing, it may lead to outstanding performance. Therein, knowledge management is the process of activating passive knowledge for the benefits of organizations and to gain competitive edge (Duffy, 2000; Van Buren, 1999).

Knowledge management is a meticulous approach toward the optimization of a firm's knowledge economy. It involves several elements like human resources practices, technology, culture and organizational structures (Du Plessis, 2007). Several knowledge management models propose that knowledge management framework should include knowledge management enablers and processes. Knowledge management framework should have a basic understanding of knowledge operations and infrastructures to support the organizational operations. In Lee and Choi's (2003) opinion, knowledge management enablers are mechanisms employed by organizations to foster consistent knowledge usage.

Organizational performance in its simplistic state is the realization of organizational objectives. It is important that organizations have measurable objectives as this has been found to be integral to employees' engagement and commitment toward the organization. Financial benefits, profitability and organizational learning are some ways to assess organizational performance. The burden of achieving performance within an organization lies directly on the leadership of the organization,

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as they are required to make and implement decision/strategies that will result in achieving the goals and objectives of the organization.

Problem statements

Many studies have addressed the importance of knowledge management on organizational outcomes such as organizational learning, innovation, product quality, besides creative, financial, economic and organizational performance (Adams, & Graham, 2017; Brix, 2017; Esterhuizen, Schutte, & du Toit, 2012; Li, Huang, & Tsai, 2009; Vila, Cabrer, & Pavía, 2015). However, what is lacking in the literature and practice of knowledge management and organizational performance is a sound judgment and research on the influences of decision-making style on the processes and enablers of knowledge management on organizational performance. This present a gap that this research intents to bridge. This work seeks to outline a comprehensive view of the integrative process-oriented approach of knowledge management and organizational performance by proposing a model which incorporates both rational and intuitive decision-making styles as moderators of the relationship between knowledge management and organizational performance.

Contribution of the study

This research contributes in several ways toward achieving a clearer understanding of the role of knowledge management and decision-making styles to organization's performance. First, it creates a robust operational and theoretical approach to organizational performance through the utilization of knowledge related theoretical framework. Second, prior research suggests that knowledge enablers and processes guarantees organizational success through organizational performance, this study contributes to practice, as accurate decision-making effort by decision makers can amplify the relationship chain. More subtly, we propose the moderating role of intuitive and rational decision-making styles on the relationship between knowledge creation process and organizational performance.

Overview of prior studies

Knowledge management processes and enablers

Knowledge management is the process of using meticulous steps to acquire, design, manage and share knowledge within an organization to achieve better performance such as reduced costly rework, faster work and use of best practices (Nonaka & Takeuchi, 1995; Pasternack & Viscio, 1998; Pfeffer & Sutton, 1999; Ruggles & Holtshouse, 1999). The key characteristic of knowledge management is its "save it, it will be useful later" approach to content. Knowledge management processes has varied classifications by different scholars. De Long (1997) identified knowledge management processes as capture, transfer and application. Spender (1996) identified it as creation, transfer and application. Probst, Romhardt, and Raub (2000) identified it as identification, capture, development, sharing, dissemination, application and storage. According to Alavi and Leidner (2001), knowledge process involves 4 factors: creation, retrieval/storage, transfer and application. This classification received support from other scholars (i.e., knowledge acquisition, knowledge protection, knowledge conversation and knowledge application) as noted by Park (2006), and (i.e., knowledge capture, knowledge creation, knowledge storage, knowledge organization, knowledge application and knowledge dissemination) as noted by

Lawson (2003). The following sections will discuss each factor in detail.

Knowledge Creation Process – is a dynamic, multidimensional and complex process. It is the ability of an organization to formulate, and circulate knowledge in their services, products, and systems (Nonaka & Takeuchi, 1995). Effective, consistent creation and application of knowledge in an organization is crucial to the success of such organization (Mousavizadeh, Harden, Ryan, & Windsor, 2015). To properly comprehend the dynamism of knowledge creation in organizations, Nonaka and Nishiguchi (2001) proposed a model detailing the elements of knowledge creation. Knowledge is created through the interaction of these elements. The knowledge creation elements are as follows: knowledge assets which include the outputs, inputs and brokers of the knowledge creation process, knowledge creation through the transformation of tacit knowledge to explicit knowledge, and the communal perspective for knowledge creation (Barker, 2015; Hubers, Poortman, Schildkamp, Pieters, & Handelzalts, 2016)

Knowledge Capture Process – is the process involving the creation of new content and replacement of existing ones (Pentland, 1995). It is necessary for organizations to capture both explicit and implicit knowledge (Park, 2006). For intra-organization exploration, active or passive means can be used to capture knowledge (i.e., personnel knowledge and experiences, trial and error practices and/or learning by doing) as discussed by Raj and Ha-Brookshire (2016). Furthermore, traditional methods and new technologies (i.e., video conferences, voice recognition tools and data mining) are some of the tools required to capture knowledge (Sharma, Gupta, & Wickramasinghe, 2004).

Knowledge Organization Process – is associated with knowledge sharing process and also indicates knowledge structure, listing and modeling. There are three stages involved in knowledge organization process namely: selection and evaluation, organization and "weeding" or re-selection. Additionally, selection and evaluation are continuous process because knowledge need to be re-evaluated and updated on regular basis (Rowley, 2000). Knowledge organization should be defined based on the following development phases (1) knowledge creation, (2) knowledge implementation/adoption, (3) knowledge dissemination/sharing and (4) knowledge modification/revision (Bhatt, 2000).

Knowledge Storage Process – the creation of new knowledge is not sufficient, having mechanism to store and retrieve the knowledge when needed is more important (Alavi, 2000). This gave rise to organization memory concept, which simply means the existence of knowledge in various structures and formats (i.e., electronic databases, written documentations, individual and team tacit knowledge, and codified knowledge (Tan, Teo, Tan, & Wei, 1998). Organizational memory comprises of personal memory (an individual's actions, experiences and observation) as well as information archives (inside and outside of the organization), shared knowledge and interactions, ecology (physical work setting) and organizational culture, transformations, structure (formal organizational roles) as noted by Walsh and Ungson (1991).

Knowledge Dissemination Process – also known as knowledge sharing is defined as the process of transferring knowledge between individuals, groups or organizations using variety of means or communication channels (Alavi & Leidner, 2001). Gupta and Govindarajan (2000) equated knowledge sharing to knowledge flow. Knowledge sharing is a set of behaviors that involve the exchange of information or assistance to other (Connelly & Kevin Kelloway, 2003). Knowledge sharing behaviors of individuals are influenced by a number of factors, ranging from "soft issues" (i.e., provision of incentives and motivations to inspire knowledge sharing, personal values and self-identity, organizational culture, trust, national culture, organizational resources

like space, time and access to knowledgeable people in the organization) to "hard issues" (i.e., technologies and modern tools) as noted by (Chennamaneni, 2006). Human Resources (HR) practices are crucial elements affecting knowledge sharing. For instance, new products and service quality are affected by employees degree of participation in knowledge dissemination (Duffy, 2000; Yang, 2008); and knowledge sharing is known to inspire innovative behaviors (Huarng & Mas-Tur, 2016).

Knowledge Application Process – the essential point in knowledge management is ensuring that the knowledge is applied productively to profit the organization (Probst et al., 2000). Knowledge application includes applying knowledge action, problem solving and for decision-making protection which can ultimately result in knowledge creation. The created knowledge needs to be captured, shared and applied; hence, the cycle ensues. Implying from Becerra-Fernandez and Sabherwal (2006), Knowledge Management Systems (KMS) assist processes by which individuals utilize others knowledge. Reduction of cost and increase in efficiency are some of the benefits of effective knowledge application (Davenport & Klahr, 1998).

Knowledge management enabling factors

According to Chan and Chau (2008), knowledge enablers are characterized as influencing factors and can expedite knowledge management activities such as arraying and disseminating knowledge capital among individuals. Yeh, Lai, and Ho (2006) noted that knowledge management enablers are the systems in which organizations use in developing their knowledge, stimulating, creating, sharing and protecting knowledge. Studies by (Gold & Arvind Malhotra, 2001; Laupase, 2003; Syed-Ikhsan & Rowland, 2004) shows that there is a significant impact of knowledge management enablers and processes on the effectiveness of knowledge. Three key knowledge management enabling factors were identified from the above studies namely: (1) structure, (2) culture, and (3) technology.

Organizational Structure – effective knowledge management within an organization can be inhibited by organizational structure (O'Dell, Grayson, & Essaides, 1998). Organizational structure has 3 dimension, formalization, centralization/decentralization and specialization. Dekoulou and Trivellas (2017) defined formalization as "the degree to which decisions, work relationships and operational routines are governed by specific standard rules, regulations, policies and procedures". Centralization refers to the hierarchical level of authority in decision-making within an organization, and is the degree in which those with authority make right decisions and evaluate organizational activities. More specifically, this assess the structure and location of authority, strategy and resource allocation. Finally, specialization asses how employee or teams accomplish variety of duties, and also how tasks are distributed across the organization (Dekoulou & Trivellas, 2017).

Organizational Culture and Entities – are set of people norms, beliefs, values, procedures and meanings shared by members of an organization (Robbins, 2001). Organizational culture affects individuals' interpretation and response to various situations (Farrell & Mavondo, 2004). Effective and efficient organizational culture can stimulate knowledge management activities and exchange (Janz & Prasarnphanich, 2003). Every organization should have a prevailing culture where trust, sociability and values stimulate knowledge sharing and interaction among the staff (Ngoc, 2005). Collaboration is defined as the extent to which individuals help and support one another in group work (Lee & Choi, 2003). Research shows that collaboration has three elements: voluntary collaboration, parity in relationships and goal interdependence (Slater, 2004). A collaborative environment gives opportunities for successful knowledge management programs and individuals can openly share their

knowledge (Duffy, 2000; Pfister, & Eppler, 2012). Intangible and tangible rewards can be used to motivate and stimulate knowledge sharing among personnel, thereby making it an essential part of the knowledge management process (Hurley & Green, 2005).

Information Technology – plays a central role in eliminating the communication barriers in organizations. Enabling collaborative learning, knowledge seeking and communication are the important role of information technology (Ngoc, 2005). According to Davenport and Prusak (1998), information technology is a crucial enabling factor and has a dynamic role in knowledge management. Gold and Arvind Malhotra (2001) opined that there must be comprehensive investment in technological infrastructures to aid various systematic activities within the organization. We there opined that to increase the success of knowledge management projects and applications, investing in information technology is unavoidable.

Decision-making style

Scott and Bruce (1995) defined decision-making style as the habitual, learned response pattern an individual exhibit when tackled with a problem or situation. Behling, Gifford and Tolliver (1980) associated decision-making style with cognitive style, because it is believed that those who gather information intuitively are more likely to be "feeling as information evaluators" while those who gather information systematically are more likely to be "thinking as information evaluators". A classification scheme for decision-making style proposed by Harren (1979) includes two opposing categories in regards to information gathering and evaluation: intuitive and rational. Therefore, individuals can be classified as consistently intuitive or consistently analytical in information gathering and evaluation.

Intuitive Decision-Making Style – intuition denotes "a vague feeling" or "sense of feeling of pattern or relationships". It is also referred as "holistic thinking, immediate insight, seeing the answer without knowing how it was reached" (Thorne, 1990), or as "a technique of swiftly retrieving hunks and forms of knowledge molded from previous experience" (Seal, 1990). Decision-makers might sense patterns, feelings and objects in seemingly unconnected facts. Intuition is often perceived by people as a sudden awareness of information (Ritter, & Dijskterhuis, 2014; Sauter, 1999). Intuition also provides the decision-makers with relationships and facts without understanding why such relationship or facts existed. Zander, Horr, Bolte, and Volz (2016) explained how intuition works, the authors stated that "unconscious thought is a process wherein disorganized information becomes more and more organized until some kind of threshold is reached and conclusions can be transferred to consciousness." Thus resulting to higher individual and organizational performance.

Sauter (1999) proposed a number ways by which intuition can be elicited in. *Detection*; where the mind uncovers confirmable truths that can solve the problem. *Evaluation*; is plagued with the inherent confusion of emotion and feelings (Hodgetts, Vachon, Chamberland, & Tremblay, 2017; Sauter, 1999). The role of intuition in decision-making has been hypothesized as a two-step process: (1) explicit decision – made by the use of emotions; (2) implicit decision – made by referencing previous decisions (Bierman, Destrebecqz, & Cleeremans, 2005). Patton (2003) identified three sources of intuition used by decision makers: (1) general experience – the learning that occurs during the normal process of accumulating and aging of experience (2) innate response – the instinct that brings subconscious but appropriate reactions to situations. It is usually inborn not learned; and (3) focused learning – the learning that originates from deliberate efforts to cultivate habits and attain intuitive responses. A recent study by Açıkgöz, Günsel, Bayyurt, and Kuzey (2014)

found that intuition enhance project success and corporate performance.

Rational Decision-Making Style – causes decision makers be obliged to consider a number of alternative scenarios and probabilities for each alternative before making decision (Busari & Spicer, 2015; Oliveira, 2007). According to Dean and Sharfman (1993), rationality is "the extent to which the decision making process involves the collection of information relevant to the decision, and the reliance upon analysis of this information in making the choice." Rational decision-making incorporates critical evaluation of evidence and a structured process that requires time and conscious effort (Fitzgerald, Mohammed, & Kremer, 2017). Rational procedures help decision makers establish relevant decision criteria, identify a comprehensive set of alternatives, and evaluate the individual alternatives objectively (Kaufmann, Kreft, Ehrgott, & Reimann, 2012).

In contrast to intuitive decision-making style, rational decision-making style encompass cautious and methodical thoughtfulness of all conceivable decision choices (Baird, 1989; Tetlock, Peterson, & Berry, 1993). Scrutinizing the available options by means of rational decision-making style necessitates the decision maker to deliberately appraise options and their relevant probable consequences. In addition to being a cognizant and thoughtful process, rational decision-making style is largely free from ridiculousness and predispositions, and thus results in enhanced decision (Pacini & Epstein, 1999), higher work and organizational performance (Busari & Spicer, 2015; Singh, 2014; Smolka et al., 2016; Uzelac, Bauer, Matzler, & Waschak, 2016)

Individual and organizational performance

Much attention has been given to defining and understanding the underlying structure of individual and organizational performance (Austin & Villanova, 1992). Borman and Motowidlo (1993) defined performance as the actions or behaviors that are pertinent to the organization's goals. Therefore, individual work performance includes behaviors under the individual's control and excludes actions or behaviors constrained by environment (Viswesvaran & Ones, 2000).

Koopmans et al. (2011) proposed a heuristic framework of individual work performance and consisted of four generic and broad dimensions. One, contextual performance signifies employee behaviors that support organizational, psychological and social environment that ensures fundamental job tasks are executed (Pulakos, Arad, Donovan, & Plamondon, 2000). Two, task performance delineates the proficiency in which employee execute the fundamental jobs (Borman & Motowidlo, 1993). Three, counterproductive work behavior is a harmful behavior that hinders the organizations' well-being (Viswesvaran & Ones, 2000). Four, adaptive performance indicates employee's adeptness in acclimating to changes in environment or work roles (Sinclair & Tucker, 2006). The need to integrate individual performance into organization performance was expressed by Gavin, Green, and Fairhurst (1995), who stated that individuals like managers also need information about their performance. It has been proven over time that teams respond positively when they can assess their performance with standards or target goals (Salas, Reyes, & Woods, 2017; Sorensen & Stanton, 2016).

Similarly, organizations can monitor their performance by comparing targets and actual performance. It is expedient to identify set of indicators when examining organizational performance so as to achieve accuracy. Some of these indicators are an independent financial audit, a formal mission statement, information systems, HR systems and strategic plan (Herman & Renz, 1998; Stone, Bigelow, & Crittenden, 1999). KMS can improve organization operational processes (Wu, 1998) and reduce frequency of

solving operational obstacles (Arora, 2002). Consequently, KMS provide better solutions in terms of decision-making support system (Boomer, 2004; Foster, 1999; Skyrme, 2007) which fosters better decisions (Frey, 2001). Thus, KMS can be considered as a performance indicator for organizations.

Propositions

T-shaped skills, knowledge creation process and performance

Competence depicts a non-random ability to sustain the coordinated deployment of assets and resources enabling firms or individuals to obtain or protect acquired resources and inimitable competitiveness (Tomenendal, Raffer, Stockklauser, & Kirch, 2017) required to achieve stated goals. This corresponds to the resource-based view, since it focuses on the internal capacity (Tomenendal et al., 2017). Individuals with T-shaped skills are needed, those with T-shaped skills have adequate knowledge of discipline and know how to cooperate with others to function as a team (Hamdi, Silong, Omar, & Rasdi, 2016). In other words, they can expand their ability across several areas, and develop systemic thinking skills (Lee & Choi, 2003), by combining both theoretical and practical knowledge (Madhavan & Grover, 1998).

T-shaped skills include the horizontal of the "T" (broad) and the vertical part of "T" (deep). The horizontal refers to the ability to collaborate with experts in other discipline and use knowledge garnered from them, while the vertical refers to the experts knowledge and experience in a particular field. People who possess these skills are valuable for their knowledge creation abilities, as they can integrate diverse knowledge assets, investigate various knowledge fields and their applications (Leonard-Barton, 1995). They are also able to combine both theoretical and practical knowledge; understand how there can be interaction between their field of knowledge with other disciplines. For instance, Hansen and Oetinger (2001) noted that the simultaneously commitment to one's specific work or area of expertise (vertically) and to other areas in the organization (horizontally), so as to share knowledge and interact with other organization members is known as T-shaped skills.

Consequently, the people having T-shaped skills can extend their skills to several operational fields, and therefore create new knowledge (Madhavan & Grover, 1998). According to Johannessen, Olsen, and Olaisen (1999), people with these skills can help their teams coordinate market and technical knowledge in an efficient and systematic way. This means that T-shaped skills give individuals the ability to comprehend diverse new information, nitty-gritty of the process for creating knowledge and integration of newly created knowledge with existing ones. A number of empirical studies found that T-shaped skills have a positive impact on innovation speed (Hamdi et al., 2016; Zhang & Yin, 2012). Logically, this could impact organizational performance. Based on these arguments, we propose the following proposition:

Proposition 1. (a) Organizational members' T-shaped skills will positively influence knowledge creation process; (b) and organizational performance.

Collaboration, knowledge creation process and performance

Temporal stability is the shared history of working together and expectation of ongoing collaboration, where this "conceptualization is intrinsically linked to the team's life span" (Alge, Wiethoff, & Klein, 2003). The relationship between collaboration and knowledge creation is non-linear, because collaboration is largely affected by the strength of ties among collaborators. Wang (2016) added that "weak ties have low cognitive capital (i.e., shared knowledge and understanding) and relational capital (i.e., trust, norm, and obligation)." Such type of ties is mostly associated with epistemological

and communicational drawbacks, which affects the sharing of ideas and information. Strong ties have higher cognitive and relational capital, and as a result, the collaboration can results in a better knowledge creation process (Guan, Yan, & Zhang, 2017)

Intra-team trust can influence team performance, hence it facilitates collaboration, which in turn enhance organizational performance (De Jong, Dirks, & Gillespie, 2016). In particular, lack of intra-team trust may increase opportunistic behavior and impede knowledge sharing (Wang, 2016), which hampers organizational performance. A number of empirical work (i.e., Bapuji & Crossan, 2004; Dodgson, 1993; Inkpen & Crossan, 1995; Levinson & Asahi, 1995; Melton & Hartline, 2013) noted that collaboration correlates with organizational learning and new knowledge creation (Bapuji & Crossan, 2004; Mowery, Oxley, & Silverman, 1996). Therefore, collaboration can be link to knowledge creation through utilization lens, that is knowledge can been generated via information, shared ideas and coalesced through exchang relationships (Bapuji & Crossan, 2004; Day, 1994; Nonaka & Konno, 1998; Nonaka, Byosiere, Borucki, & Konno, 1994).

Learning new things requires participation, hence an eclectic inter-organizational relationships and linkages (De Jong et al., 2016). These affiliations facilitate conversing of individualistically developed ideas and thoughts, and results in having shared understandings and common language which are conducive for facilitation and creation of new knowledge (Nonaka et al., 1994). Collaboration enhances organization's ability to create and transfer knowledge between processes and units in an organization. Darr, Argote, and Epple (1995) and Epple, Argote, and Murphy (1996) added that collaboration contributes to organizational performance both in manufacturing and service industry.

Collaboration in term of knowledge management "is a complex process that subsumes knowledge sharing, knowledge transfer and knowledge creation" (Gao, Guo, Chen, & Li, 2016). Knowledge collaboration has been proven to have positive relationship with enterprise performance, team performance, management performance and innovative performance (Gao et al., 2016; Shi, Du, & Liu, 2013; Xu & Zheng, 2010; Zhou & Jiang, 2012). Goerzen and Beamish (2005) declare that collaboration can pave way to increase market penetration, value, condense innovation time-span and finally tie matching technological competences. Intellectual capital acquired by employees through collaboration formation gives an organization a great expanse of flexibility, as it allows organizations to get resources and skills that would be too expensive to acquire and sustain. Organizations use collaboration to influence employees comparative competencies (Latta, 2009), by providing a loyal, truthful and mutual working environment that is focused on optimizing resources, reducing cost thereby improving organizational performance. Based on these arguments, we propose the following proposition:

Proposition 2. (a) Organizational member's collaboration will positively influence knowledge creation process; (b) and organizational performance.

IT-support, knowledge creation process and performance

The extent to which knowledge management is reinforced by the use of information technology is referred as information technology support. By different researchers (Davenport & Prusak, 1998; Raven & Prasser, 1996) IT has been found to be a key element for effective and efficient knowledge process, because it expedites swift collection, storage, and exchange of knowledge on a magnitude not feasible in the past. IT integrate fragmented knowledge, thus, it eliminates barriers to communication within the organization, in doing so supports knowledge processes such as generating, facilitating, expending and transferring.

IT-support through participation and autonomy facilitate creativity, reduce inhibiting organizational barriers, and support knowledge creation process (Gallupe et al., 1992; Gold & Arvind Malhotra, 2001; Zuboff, 1988). IT-support also increase the organization's capacity to absorb knowledge and exchange of ideas (Cohen & Levinthal, 1990). Subsequently, Prasarnphanich and Wagner (2009) found that the success of the collaborative knowledge creation model embedded in Wikipedia appears to be related to wiki technology. This simply means IT and its supportive apparatus can improve organizational ability to discover and exploit opportunities and to respond quickly in harsh market conditions (Su, Lin, & Chen, 2015). Technology-oriented KMS practices have been linked with innovations (Inkinen, Kianto, & Vanhala, 2015).

In a recent study, Little and Deokar (2016) noted that social competencies and the interaction between people and IT processes are factors impacting knowledge creation. Little and Deokar (2016) concluded that the "training and support opportunities are methods that can enhance our understanding on how knowledge system tasks are connected". According to Cohen and Olsen (2015), IT-support for "knowledge management and codification practices (converting tacit knowledge into explicit) that built on human capital knowledge management capabilities were directly linked with financial and market performance". Hence, IT-support can expedite exchange of information and its integration will stimulate creativity and learning within the organization, which results in organizational performance. Based on these arguments, we propose the following proposition:

Proposition 3. (a) IT-support will positively influence knowledge creation process; (b) and organizational performance.

Learning, knowledge creation process and performance

The perception of beneficial activities that aids employees to create, acquire, and transfer knowledge (dialogue, knowledge inquiry and application) is known as perceived learning climate (Marsick & Watkins, 2003). Perceived learning, grant employees, the opportunities to engage in dialogue, share knowledge, and also to get along with the organization's vision, moreover, perceived learning helps employees develop a deeper connection with their jobs and organizational goals. Learning is obtaining new knowledge by people who have ability and willingness to apply that knowledge in influencing others or in decision-making. According to Swap, Leonard, Shields, and Abrams (2001), organizations need to adopt learning culture and also afford different means of learning like education, training and mentoring for effective knowledge creation processes.

Perceived learning has a positive effect on engagement, because learning environment creates the confidence that goals can be accomplished and fulfills the employees' need to belong (Eldor & Harpaz, 2016). The relationship between learning and organizational cognizance is crucial, because cognitive processes of organizational members determine successful "change" practices in the organization (Reger, Gustafson, Demarie, & Mullane, 1994). March and Simon (1958) added that rationality and sound decision are promoted by a formal problem-solving methods that allow organizations to capture, generate and apply knowledge systematically. Organizational learning is the competence within an organization based on experience for the purpose of maintaining or improving performance.

The learning activities include knowledge acquisition (the creation or development of relationships, insights and skills), knowledge sharing (the dissemination to acquired knowledge by some to others), and knowledge utilization (integration of learning so that it is broadly available, assimilated and can be universal for new situations) as noted by (DiBella, Nevis, & Gould, 1996). The main objective of organizational learning is to create, maintain and

enlarge its customer base; enhance performance quantity and quality, achieve more support and allow the organization to increase and improve sales. Furthermore, organizations that learn and do so quickly increase their strategic proficiency which gives and sustain their competitive advantage position and consequently improve organizational outcomes. Based on these arguments, we propose the following proposition:

Proposition 4. (a) Organizational Learning will positively influence knowledge creation process; (b) and organizational performance.

Knowledge creation process and performance

In recent years an interesting research stream "knowledge creation", appears to be linked to the knowledge view of enterprises, and in particular to the knowledge management perspective. According to Kao and Wu (2016), knowledge creation is a multidimensional theme that covers various fields of practice and research (i.e., human behavior, organizational behavior, leadership, technology, environment, strategic thinking and management). Several studies (Gold & Arvind Malhotra, 2001; Kogut & Zander, 2003) suggested that knowledge creation plays a key role in organizational success. Calabretta, Gemser, and Wijnberg (2017) noted that knowledge creation process subsumes "embedding new ideas, cognitive frames, and manners of thinking in organizations requires adaptation (i.e., translation) to the specific practices and sociocultural context of the target organization."

Therefore, knowledge can be generated through various types of individual social interactions that subsumes communication, coordination, and collaborate for various purposes (Kao & Wu, 2016). Knowledge is extensively acclaimed as a strategic source (Grant, 1996; Teece, 1998), creating and utilizing knowledge is ambiguous, but it enables organizations to develop a sustainable competitive advantage (Grant, 1996; Matusik & Hill, 1998; Zack, 1999). Scholars like (i.e., Fidel et al., 2015; Ferraris, Santoro, & Dezi, 2017; Tseng, 2016; Yeşil et al., 2013) further explain that knowledge creation process (i.e., knowledge creation, transfer, and storage) is the main source for innovation and corporate performance. Furthermore, leadership characteristics and organizational arrangements were found to be important meddling factors in the relationship between knowledge creation process and organizational performance (Inkinen, 2016).

The discursive assemblages of processes of knowledge creation served as a tool of imitation to learn, copy, and produce duplicative copies from the learning organization perspective (Bi, Sarpong, Botchie, & Rao-Nicholson, 2017). Organizations that are able to connect knowledge in distinct and new ways, provide added value for their clients (Nonaka & Konno, 1998), which enhances organizational innovation, competitive advantages, effectiveness and efficiency (Chia, 2003). Moreover, improving knowledge creation processes can lead to creative, financial, market and organizational performance, (Kao & Wu, 2016; Quinn, Anderson, & Finkelstein, 1996). Organizational performance can be said to be the output of knowledge processes. Hence, when an enterprise possesses rich strategic resources and capabilities, it is easier for it to survive, grow, and earn profits in a competitive market (Kiessling et al., 2009). Based on these arguments, we propose the following proposition:

Proposition 5. Knowledge creation process will positively influence organizational performance.

Rational decision-making style, knowledge creation process and performance

Considering the complexities associated with achieving organizational performance and effective utilization of knowledge within organization through knowledge management, we find reason to assume that knowledge managers requires some level of decision-making abilities to achieve their objectives. Organizations need to make on spot decision (Vester, 2002), thus knowledge managers must be able to analyze, prioritize, interpret, and use the available information to deliver timely results. Skyrme (2002) stated that there is a direct link between knowledge management and decision-making. Like knowledge management, decision-making involves organizational, group and individual levels (Bryant, 2003; Harrison, 1999). Likewise, as required in knowledge management, step by step procedures must be followed when using a rational decision-making style (Hellriegel, Slocum, & Woodman, 2001; Hendry, 2000).

Researchers (i.e., Chater, Oaksford, Nakisa, & Redington, 2003; Mangalindan, 2004; Nutt, 1984) asserted that in rational decision-making processes, there is a need to pinpoint the problem, generate possible solutions, select the most feasible solution, and lastly applying and appraising the selected solution. Every step of decision-making is influenced by knowledge management (Nicolas, 2004) and the complete decision-making process (Holsapple, 1995). In practice, practitioners impartially analyze the entire information to arrive at a decision.

The relationship between rational decision and organizational performance has been a subject of extensive empirical research and debate. Among notable studies of decision-making and organizational outcomes, the degree of rationality has been found to be crucial (Fredrickson, 1984; Marusich et al., 2016; Walker, James, & Brewer, 2017). Rationality is an incessant preemptive quest to detect problems and prospects using a formal planning process and extensive analyses. Rationality can also accentuates participative and ample decision-making (Ferretti & Parmentola, 2015; Fredrickson, 1983, 1984). Managers are supposed to evaluate both internal and external organizational environment to make strategic decisions based on unbiased criteria and systematic analysis. Meta-analyses by Schwenk and Shrader (1993) and Miller and Cardinal (1994) shows that there is a relationship between rationality and performance. Based on these arguments, we propose the following proposition:

Proposition 6. Rational decision-making style will moderate the relationship between knowledge creation process and organizational performance

Intuitive decision-making style, knowledge creation process and performance

Studies have shown that information processing capabilities of individual are often limited by the extents of our cognitive capacities (Ariely, 2010; Simon, 1976) and also influenced by the inherent arrangement of neural substrate (Kahneman, 2011; Tranel, Damasio, Damasio, & Brandt, 1994). Hebert Simon opined that within the context of business, human behavior are "intendedly" but rarely exclusively rational (Simon, 1976). This view has been shared by many scholars, suggesting that intuition guides complex information processing (Tranel et al., 1994). Building on Simon's study, scholars (Klein, 1998a, 1998b; Klein, Pongonis, & Klein, 2002) demonstrated that decision makers rely on inner feelings to make quick decisions of seemingly complex situation.

These inner feelings (intuitions) reinforce the information and ensures faster decision-making due to hidden information embedded in prior experience that were used in similar situations. Intuitive decision-making style is a type of right-brain decision-making approach that encourages the use of feelings over facts in the process of making a decision (Wray, 2017). It basically involves the use of impulsive and amorphous procedure to consider the available information to make a decision (Busari, Mughal, Khan, Rasool, & Kiyani, 2017). By doing so, the pressure of logical reasoning and calculations required for rational decision-making are

relieved and the mind is freed to engage in other cognitive assignment as may be required (Kahneman, 2003; Kahneman & Klein, 2009).

Sadler-Smith (2008) asserted that human decision has an intertwined aspect of both intuition and deliberation. More generally, complex information processes depends on faint signals from the brain which results in considerations (Tranel et al., 1994). Further when these faint signals are no longer faint but strong enough to break individual's awareness threshold, it becomes an intuition (Becker, 2004). It is important to note that the choice of decision-making style is premise on the nature of the problem and the atmosphere. For example, some problems require the use of effortful information, deliberation and precise rule to make decision. Other problems demands no predefined rules to arrive at solution. This exertion is the focal quality that differentiates intuitive from rational decision-making style (Dijksterhuis & Nordgren, 2006; Kahneman, 2011).

The nature of knowledge creation processes requires knowledge practitioners and professionals to gather, process and use knowledge in a measured manner. This is often due to the need to make knowledge decisions within a very short time space, which requires loads of deliberation and thoughtfulness. Organizational performance on the other hand, is concerned with measurable achievement of organizational objectives which may require knowledge management at its best. While knowledge management and organizational performance may require certain procedures to be followed or curtained conditions to be fulfilled, there are no specific rules on processes or how these procedures must be followed. As such, we argue that, intuitive decision-making style that enjoys the flexibility of decision makers to consolidate available knowledge with their intuitions can alter the influence of knowledge creation process on organizational performance. Based on the above arguments, we propose the following proposition:

Proposition 7. Intuitive decision-making style will moderate the relationship between knowledge creation process and organizational performance.

Discussion and future research direction

This paper reviews knowledge management enablers, knowledge creation processes, organizational outcomes and decision-making theories, together with extant empirical work and develops testable propositions. The central bi-dimensional goal of knowledge management subsumes recognition-oriented approach, which views knowledge as anything that can be encrypted, systematized, stored and retrieved when the need arise. Whereas the professional technical-oriented approach accentuates the role of novel information and communicative technology in processing the knowledge (Ekbia & Hara, 2008). Knowledge is built with a helix of pairs of apparently opposing concepts like mind and body, induction and deduction, macro and micro, chaos and order, explicit and tacit (Nonaka & Nishiguchi, 2001). Knowledge management is built around interactions of various entities that results in social knowledge, moreover, social knowledge as the aggregate of what people and system know, is known to affect the creation of knowledge in an organization (Goucher, 2007).

First, the authors highlight the importance of T-shaped skills in knowledge creation process and organizational performance. T-Shaped professionals are the "Industry 4.0 style workforce" (Hecklau, Galeitzke, Flachs, & Kohl, 2016; Pfeiffer, 2015) and managers, who are loyal to their individual work units, and also breaks out of the traditional corporate hierarchy to share knowledge across the organization. Employees with T-Shaped skills are endowed with competencies required for innovative and creative performance, as they leverage on their problem-solving and

decision-making capabilities. This view allows us to draw the conclusions that T-shaped skills have a significant impact on knowledge creation processes and organizational performance.

Second, from a theoretical perspective, the positivist research stream has been most concerned with describing the governance mechanisms that collaboration has on team performance. This article posits that collaboration is effective in curbing knowledge hiding behaviors, which is known to be an obstacle of innovation (Labafi, 2017), it mostly occurs among co-workers, hence, the quality of their relationship is important. More generally, the dissemination of knowledge among colleagues, through collaboration facilitates knowledge creation processes, which is likely to improve competitive advantage, and can help organizations to out-perform rivals. This view allows us to draw the conclusions that collaboration has a significant impact on knowledge creation processes and organizational performance.

Third, IT-support helps in the acquisition, dissemination and storage of knowledge, however, the exegesis of knowledge is contingent upon mankind or professionals. Kautz and Thaysen (2001) added that "IT can only assist implicitly in providing information to support the processes and circumstances that enable knowledge creation and knowledge management". Furthermore, knowledge creation processes can increase work efficiency through the reuse of valuable knowledge (Wang, Clay, & Forsgren, 2015). Gregory, Ngo, and Karavdic (2017) added that in information-intensive industry, IT-support can enhance work and business efficiency, which enhance overall performance. This view allows us to draw the conclusions that IT-support has a significant impact on knowledge creation processes and organizational performance.

Fourth, knowledge creation take place through participation and/or apprenticeship, new and/or market knowledge which are essential for updating and reactivating knowledge (Marsh & Stock, 2006). Organizations must have sufficient prior technological and market knowledge, as it is necessary for enhancing firm performance (Chih, Huang, & Yang, 2016; Hernández-Espallardo, Augusto Rodríguez-Orejuela, & Sánchez-Pérez, 2010). Therein, learning can affects how much knowledge can be applied in exploitative opportunities, knowledge created can be applied to new products, services or business processes. This view allows us to draw the conclusions that learning has an impact on knowledge creation processes and organizational performance.

Fifth, the crucial point of knowledge management is to maintain a balance between creation and application (Bi et al., 2017), and generate positive organizational outcomes (i.e., organizational learning, financial performance, market performance, corporate performance, innovation and creative performance) as noted by (Ferraris et al., 2017; Fidel et al., 2015; Kao & Wu, 2016; Tseng, 2016). The extant empirical and conceptual evidence allows us to draw the conclusions that knowledge creation processes can enhance overall organizational performance.

Finally, research shows that people often have affinity for intuition or rationality over another. In intuition decision-making, decision-maker create a problem-solving approach that link information in an unrelated manner. Knowledge creation results in unprocessed knowledge, disorganized information becomes more and more organized through unconscious thought (Zander et al., 2016), by which conclusions could be drawn from. Rational decision-making relies on rational methods, structured procedures and methodologies to reduce ambiguity and uncertainty (Calabretta et al., 2017). Rational decision makers are mostly uncomfortable and even reject potential outcomes when the cause–effect logic is unclear. Thus, resulting to tension between the conscious (rational) and sub-consciousness decision-making (intuition).

According to Phillips, Fletcher, Marks, and Hine (2016), the effectiveness of rational and intuitive decision-making are context
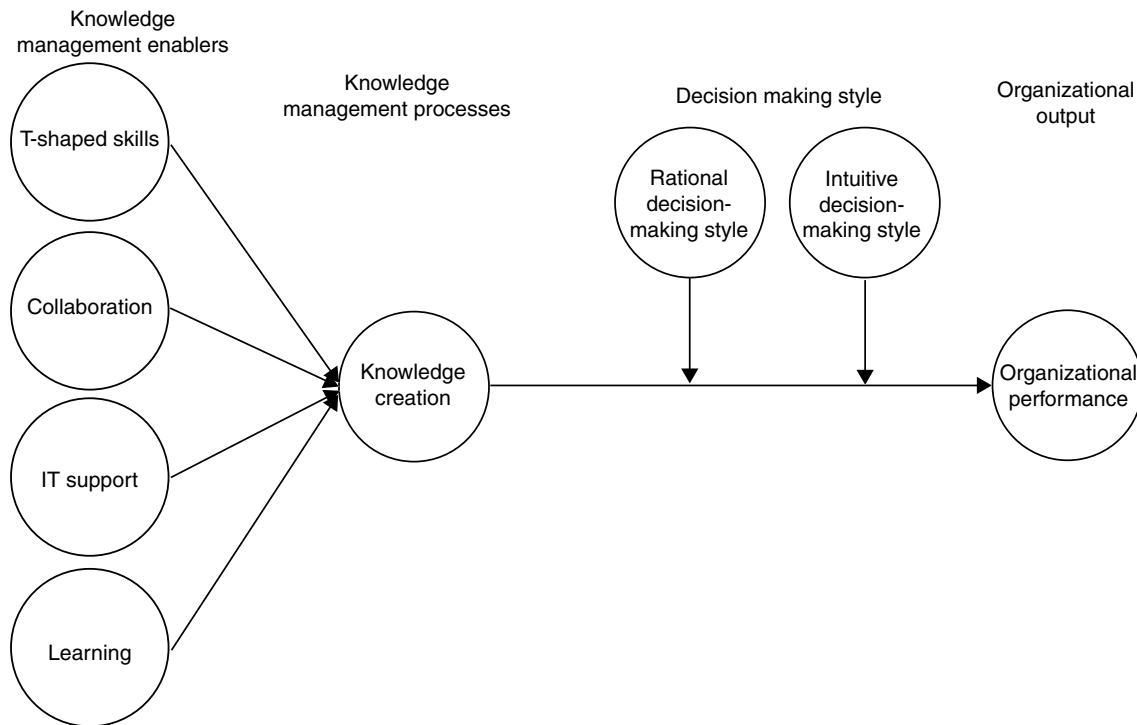
Fig. 1. Conceptual framework.

dependent. Contrariwise to prior work that conceptualize intuition and rationality as alternative decision-making approaches (Dayan & Elbanna, 2011; Witteman, van den Bercken, Claes, & Godoy, 2009), we argue that intuitive and rational approaches can complement each other, this notion received support from (Elbanna, 2006; Elbanna & Child, 2007). The extant literature shows that knowledge creation has an impact on organizational performance. This view allows us to draw the conclusions that both rational and intuitive decision-making style can strengthen the impact of knowledge creation processes on organizational performance.

The framework in Fig. 1 highlights several interesting issues for future research. The proposed model presents a partial view of the knowledge intensive world, although it is valid, but also ignores a good bit of the complexity of the business processes that heavily depend on human capital. We recommend that knowledge management researchers should look beyond the existing knowledge management literature, to harvest more industrial development. For knowledge management researchers, the pay-off now is in empirical research, as such we encourage researchers to test the proposed model empirically. Moreover, longitudinal evidence is needed to enhance our understanding on how the aforementioned antecedents can promote knowledge creation process and performance. It important to note that decision-making style varies across cultures, as such the impacts and magnitude may vary, this could be a useful areas to look into. Future research should also try to explore the following questions empirically:

1. Does decision-making style impacts the influence of knowledge management on organizational success (i.e., financial, market, corporate, innovative and entrepreneurial performance)? To what extent does decision-making style impacts this relationship?
2. Does knowledge enablers facilitate knowledge creation better? And under which condition does knowledge creation deliver best performance?

3. Which decision-making style better performs? With what enablers does it deliver optimum result?
4. Does team unit, managerial decision-making interacts with employees T-shaped skills?

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