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The *MinK* Framework: Investigating Individual Knowledge Indicators

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Abstract

Purpose – Effective knowledge management (KM) entails knowledge assessment capability to enable identification of knowledge assets and proper governance of value creation dynamics. Although some studies have attempted to use different methods to measure knowledge at the organisational level, few have addressed the individual knowledge holder. The purpose of this paper is to present a state-of-the-art framework, referred to as *MinK*, that enables organisations to measure individual knowledge in the business context using a novel diversity of indicators.

Design/methodology/approach – The model was developed based on a comprehensive conceptual framework. A pilot study composed of 20 semi-structured interviews elicited valuable feedback from practitioners and was followed by a validation phase in which an electronic questionnaire is used to survey a large sample of senior managers.

Originality/value – This paper contributes to the literature by presenting an innovative integrated individual knowledge measurement framework, and proposing a theoretical framework for the pivotal role of individuals in the organisational knowledge environment.

Practical implications – The model provides mangers with a valuable tool capable of identifying knowledge holders and supporting effective KM decision making to achieve optimal organisational performance. Results showed that the *MinK* framework was also well received by industry and accepted as a valid framework.

Keywords – Knowledge Management, Knowledge Measurement, Intellectual Capital, Stocks and Flows

1 Introduction

In a business environment characterised by dynamic market needs and fierce global competition, knowledge emerges as a vital strategic resource and an antecedent of sustainable competitive advantage in today's knowledge economy (Spender, 1996, Drucker, 1999). An exponential growth of the Knowledge Management (KM) domain was triggered by the realisation that value creation is no longer dependant on financial assets only, but rather on intangible ones whereby organisations need to strive to leverage and exploit their knowledge resources (Carmeli and Tishler, 2004, Serenko and Bontis, 2013). The capacity to manage any organisational dimension becomes quite a challenging endeavour without the ability to assess what is being managed (Marr et al., 2004). Effective KM entails knowledge measurement capability to enable proper governance of an organisation's value creation dynamics (Carlucci and Schiuma, 2006). Knowledge measurement supports managers in identifying 'hidden' knowledge assets (Edvinsson and Malone, 1997), evaluating the impact of KM initiatives (Liebowitz and Wright, 1999), and aligning strategic plans with available intellectual capital (Wiig, 1997, Zack, 1999).

Based on extensive literature review of existing knowledge measurement methodologies, three main approaches: financial, intellectual capital components, and performance were identified by Ragab and Arisha (2013a). The financial approach uses data from a company's financial records to provide a holistic assessment of intellectual capital (IC) in financial terms based on the notion of market over-valuation (Grossman, 2006). IC is usually computed as a result of the difference between a company's book value and its market value (Tobin, 1969, Stern et al., 1995). The IC components approach divides IC into a human component and an organisational component and attempts to assess each component using metrics (Edvinsson and Malone, 1997, Bontis et al., 1999b). On the other hand, the performance approach tends not to measure knowledge/IC,

but rather its impact or effect on organisational performance (Ruggles, 1999, Shin, 2004).

The literature review in knowledge measurement shows that the majority of knowledge measurement frameworks are developed at an organisational level, with very little efforts directed into the assessment of individual knowledge holders within organisations (Kannan and Aulbur, 2004, Ragab and Arisha, 2013b). This critical gap is vital in attempting to effectively manage knowledge in isolation of 'the knowers who own it' as it overlooks the essential role of individuals in the organisational knowledge environment (Fahey and Prusak, 1998). The proposed research is aiming to address this issue by focusing on individual employees and knowledge holders. It also proposes a novel framework referred to as '*MinK'*, an acronym for *Measuring Individual Knowledge*. *MinK* provides managers with the visibility required for effective decision-making in the allocation, exploitation and development of knowledge-holding individuals within their organisations.

2 Conceptual Framework

The objective of the initial phase in the development of an individual knowledge measurement model is to develop an overarching theoretical framework that depicts the pivotal role of individuals in a company's knowledge environment. A number of KM theories were combined veritably in the conceptual framework to represent the theoretical foundation of *MinK*. An organisation is envisaged as the sum of its financial capital (monetary and physical assets) and its IC, both of which are exploited to improve organisational performance (Stewart, 1998) (Figure 1). IC could be divided into Structural Capital (SC) (i.e. knowledge held within the organisation's supportive infrastructure, business processes, IT systems and customer relations), and Human Capital (HC) (i.e. knowledge held by employees). In the 'stocks and flows' theory, IC is seen as the stock of knowledge a company holds at a certain time, while KM is concerned

with managing knowledge flows between individuals and the organisation (Bontis et al., 1999a, Al-Laham et al., 2011).
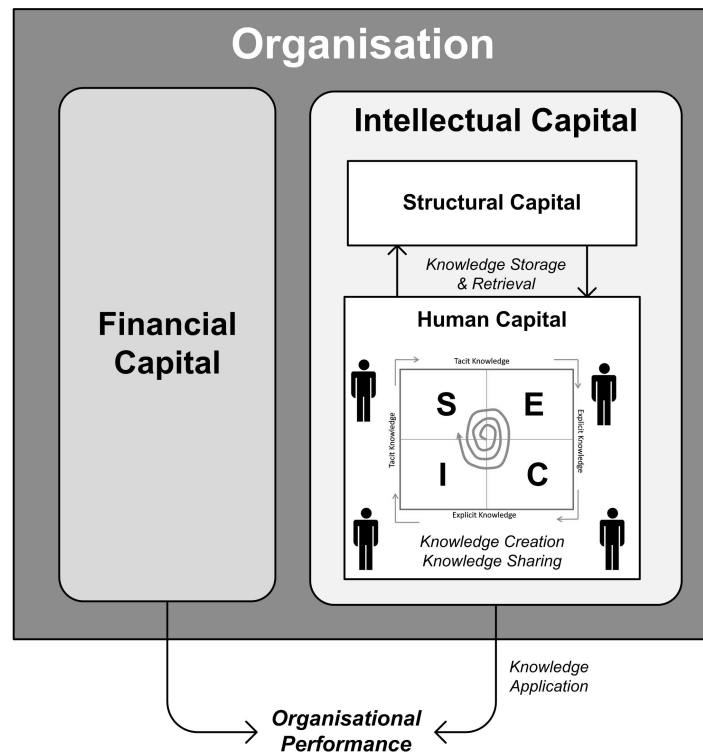

Figure 1: MinK Conceptual Framework

The dynamics of knowledge flows are governed by a number of knowledge processes starting by *knowledge creation*, followed by *knowledge sharing* and *knowledge storage & retrieval*, and ending by *knowledge application* (Alavi and Leidner, 2001, Mertins et al., 2003, Goldoni and Oliveira, 2010). The processes of knowledge creation and knowledge sharing within organisations are best represented by the renowned SECI model developed by Nonaka and Takeuchi (1995), which views the individual employee as the core of knowledge creation. They distinguish between explicit and tacit knowledge (Polanyi, 1967), then clearly state, "*At a fundamental level, knowledge is created by individuals … an organisation cannot create knowledge without individuals.*" They define

organisational knowledge creation as a process of elaborating and sharing tacit knowledge created by individuals by converting it into explicit knowledge through four simultaneous conversion modes. They are:

- *Socialisation* (S) – conversion of tacit knowledge into other forms of tacit knowledge through social interaction and dialogue with other individuals.
- *Externalisation* (E) – conversion of tacit knowledge into explicit knowledge though narratives and analogies to convey an individual's conceptualisation to others.
- *Combination* (C) – conversion of explicit knowledge into other forms of explicit knowledge through codification and documentation.
- *Internalisation* (I) – conversion of explicit knowledge into tacit knowledge within an individual through learning and experience.

The SECI model therefore portrays the knowledge production process that creates knowledge stocks and the consequent knowledge flows resulting from the knowledge sharing process between individuals. Similarly, the process of storage and retrieval underpins the flow of knowledge between an individual and the organisation. Explicit knowledge is codified by individuals into organisational 'knowledge items' such as knowledge repositories, business processes and intellectual properties (Bolisani and Oltramari, 2012). On the other hand, new employees acquire knowledge through knowledge retrieval from such items creating reciprocal knowledge flows between human capital embedded in employees and structural capital that is owned by the company (Roos et al., 1998, Bontis, 2001).

The knowledge application process is the ultimate objective of knowledge management and measurement whereby knowledge is utilised in business decision making to enhance organisational performance and achieve competitive advantage. It could be described as the aggregation of individuals' knowledge to create value through conversion of inputs to outputs in the form of products and services (Grant, 1996).

3   The *MinK* Framework: Development and Structure

The journey of developing an individual knowledge measurement model began by questioning what makes certain individuals "knowledgeable"? It is found that an individual's knowledge manifests itself in her/his *attributes* and *actions*. Knowledgeable people have certain knowledge-related characteristics (attributes), and engage in certain knowledge activities (actions) such as creation, acquisition, learning, sharing and application. Accordingly, instead of measuring knowledge *itself,* characteristics that indicate that knowledge is present within an individual could be identified and assessed. The *MinK* framework is therefore built on the premise that assessing certain of an individual's attributes and actions would provide a good indication of their knowledge. This is achieved by adopting a component-based structure similar to IC models in which individual knowledge is broken down into components that reflect an individual's knowledge-related facets and each component is then measured individually using a set of metrics.

Recognising that it is onerous -if not impossible- to measure the totality of an individual's knowledge, the scope of assessment is directed towards one's knowledge in their business domain, the knowledge that is of value to their organisations. It is acknowledged that an individual may hold knowledge in other areas that are unrelated to their work but such knowledge is viewed as irrelevant and out of the scope of the proposed framework. The focus of this study is individual knowledge in a business context and identifies relevant knowledge as one that contributes to improving organisational performance (Baron, 2011).

3.1 Indicators and Metrics

The *MinK* Framework defines a list of *Individual Knowledge Indicators (IKI)* each of which implies that an individual holds certain knowledge that is valuable to their organisation, or is active in acquiring, creating, sharing and applying such knowledge (Figure 2) (Ragab and Arisha, 2013c).
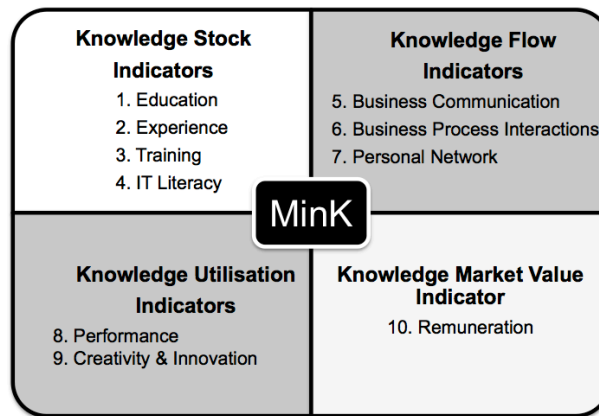
Figure 2: Individual Knowledge Indicators (IKIs)

The key four IKI groups are: Knowledge Stock, Knowledge Flow, Knowledge Utilisation, and Knowledge Market Value. Knowledge stock indicators are background measures which reflect the knowledge an individual has internalised through learning and experience. The assumption is that such indicators will measure *enabling attributes* that thrive an individual's creation and exploitation of knowledge (Bolisani and Oltramari, 2012). Knowledge flow indicators are process measures that reflect an individual's exposure to knowledge flows and their likely roles in accumulating knowledge stocks (Malhotra, 2003). The assumption here is that knowledgeable individuals would be highly engaged in knowledge acquisition and sharing activities through communication with their social networks, would contribute to the codification of knowledge into business processes, and would learn from existing ones. Knowledge utilisation indicators are indirect measures that evaluate the *effect* an individual's knowledge has had on their work output. The assumption is that there is direct correlation between knowledge and its effects on performance and innovation (Bolisani and Oltramari, 2012). Knowledge market value indicators assess an individual's knowledge using its market value by using remuneration as a measure. The assumption is that the market value of an individual (i.e. salary scale) could be used as a proxy

indicator of their knowledge in the same manner the market value of an organisation is used to calculate its IC.

The next stage in the *MinK* framework was to develop metrics to measure each IKI. Metrics are measurement units, which may be direct counts, monetary values or percentages, when used to measure quantitative attributes, or numerical scale-based ratings when used to quantify qualitative attributes. Accordingly, sets of metrics were proposed to evaluate each indicator (see Ragab and Arisha, 2013c).

3.2 Data Sources

To ensure the practicality of the solution, it is important to determine the sources of data the model requires about an individual to perform the assessment. It is noted that such data is of two types: *quantitative data* and *qualitative data*. The first type is used by such quantifiable metrics as the count of years of experience, hours spent in training, and the financial value of remuneration. This data is, to a great extent, objective and could be obtained from the individual's records in the company's Human Resources department then would be validated by the individual under assessment to ensure the information is up-to-date.

The second type of data includes ratings of parameters such as performance, innovation, and networking capacity and these have to be obtained mainly through qualitative assessments. Since such assessments involve one individual - usually the direct manager - evaluating another (the employee) they are challenged by subjectivity and bias diminishing their credibility. Managers may not be fully aware of employees' knowledge-related capabilities and may be influenced by other factors, such as personal relationships, when rating subordinates (Toegel and Conger, 2003). To overcome this challenge, a *360-degree* approach is proposed whereby individuals would be assessed by themselves, their peers, subordinates, managers and possibly external stakeholders. This approach has gained great interest from both managers and

researchers due to its contribution in increasing objectivity of qualitative assessments and reducing bias, and has recently been introduced in the human capital domain (Peter et al., 2011).

3.3 Aggregation

Given the multiplicity of IKIs and metrics in the *MinK* framework, there is an urge to combine the different measures into a concise format that represents an individual's knowledge for reporting and benchmarking purposes. Consolidation would be achieved by aggregating the results of IKIs to produce an *Individual Knowledge Index*. This would require an *aggregation methodology* that incorporates a technique for the combination of indicator and metric results and assignment of weights that would reflect the relative importance of different parameters (Figure 3).

Figure 3: *MinK* Framework – Data Sources

4   Pilot Study

Before proceeding to the next phase of this research, it was necessary to examine the validity of the proposed framework and elicit the opinions of businesses. A pilot study was done through interviews of practitioners from a variety of organisations (e.g. leading multinationals, indigenous companies and Small/Medium Enterprises). Interviews were conducted with management level and deemed to be an effective method of revealing information about views and experiences (Dunn, 2000). Interviews were semi-structured to provide

interviewees with the flexibility to elaborate on their understanding of individual knowledge and to allow the interviewer to alter the phrasing and sequence of questions to maintain conversational flow while ensuring that all scheduled issues were addressed. A total 20 interviews were completed and this sample size was considered appropriate for a pilot study. Managers represented corporations that operated in a number of industries namely consulting, IT, healthcare, education, pharmaceuticals, and food manufacturing. Interviews were conducted in person and by phone and typically lasted 30 - 45 minutes.

Interview responses were systematically analysed using an inductive and interpretive approach and coded for qualitative analysis. Codes were not pre-assigned and the coding scheme was developed as key themes emerged from the data (Glaser and Strauss, 1967, Iaquinto et al., 2011). At the beginning of interviews, participants were provided with brief background information about this research then were asked the first set of questions which aimed to examine the status of KM in their companies. Participants were then introduced to *MinK* and were asked to express their views about the model's methodology and components.

During initial discussions, it was apparent that all interviewees were aware of the concept of the 'knowledge economy' and KM as a business field. Most of their organisations implemented some sort of KM activity that ranged from 'hard' technology-based initiatives to 'softer' people-based ones. Most participants, however, expressed doubts about the effectiveness of their companies' KM initiatives and felt that they still suffered from knowledge attrition. When asked whether their organisations attempted to measure knowledge, several interviewees discussed their performance appraisal systems, which revealed a mix-up between knowledge measurement and performance measurement. This was, however, not unexpected because it stemmed from the implied notion of 'measuring knowledge through its effects' and the assumption that the most knowledgeable employees are the best performers. When the distinction between

knowledge assessment and performance appraisal was clarified and *MinK* was introduced, participants stated that their companies did not have a clear knowledge measurement system. Nevertheless, they expressed keen interest in the study and in the *MinK* framework. They believed it would enhance their KM capabilities and reduce the loss of valuable knowledge.

When asked to express their views on the model, managers found knowledge stock IKIs to be very relevant indicators of individual knowledge and noted that the same four parameters are used by most managers to evaluate individuals from their CVs during recruitment. When reviewing metrics, a number of participants disagreed to the use of number of hours and expenses as measures of training. They believed that the duration and cost of training are not necessarily valid indicators of the knowledge gained and that training should be evaluated based on outcomes and impact on business performance. This view was found to be confirmed by the training evaluation literature (Alliger and Janak, 1989, Alvarez et al., 2004, Pineda, 2010). Similarly, few managers commented that based on their experience, grades should not be used as measures of knowledge gained during education as in many cases an individual's performance at work is not related to their academic performance. Although there is debate in the literature about the link between college and work, a number of researchers have agreed with practitioners that this correlation does not exist (Cohen, 1984, Waldman and Korbar, 2004).

While most of interviewees agreed with the three knowledge flow indicators, most of them were not convinced with the proposed metrics. They found that the recurring use of counts as quantitative metrics provided misleading results and criticised such metrics for measuring the *quantity* and not the *quality* of their respective indicators. As one manager stated, "an employee receive hundreds of emails per day only for bureaucratic tasks that have nothing to do with his or her individual knowledge." The general recommendation in this regard was to replace quantitative metrics by qualitative assessment. For example, instead of counting

how many people an individual has in their personal network, the quality of their network and its relevance to the business would be assessed instead.

The approach of measuring individual knowledge via its market value was problematic to a number of managers who were critical of salary structures in their companies or in the job market at large. They questioned the link between knowledge and remuneration, because they believed there is a multiplicity of factors that determine a person's salary, leading to the fact that knowledgeable employees are sometimes underpaid while less-knowledgeable ones are overpaid. Given their emphasis on the effect of knowledge on performance, all interviewees heavily endorsed knowledge utilisation IKIs as indicators of individual knowledge. Overall, most managers agreed that *MinK* would provide a good indication of individual knowledge if their suggestions for improvement were considered.

A number of participants concluded their interviews with few interesting and constructive comments. One manager questioned the generalisability of *MinK* and suggested that the model should incorporate the flexibility to adapt its indicators and metrics to different organisational profiles. This is similar to the approach adopted by Roos et al. (1998) in their work related to the *IC Index* framework where they recommended that IC indicators would be determined by the company's top management based on its industry, size, age and strategy. The authors found this to be a valid point that should be studied. Moreover, few managers heavily emphasised their view that the value an organisation would derive from an individual's knowledge is highly dependant on the individual's attitude towards knowledge sharing. This factor - referred to by managers as *willingness*, *tendency*, or *motivation to share* - emerged as a key determinant of the value managers place on an employee's knowledge. Researchers widely agree with this view as the vital importance of knowledge sharing motivation is undisputed in the KM literature (Vilma and Jussi, 2012, Witherspoon et al., 2013).

On a final note, another manager discussed the optimal frequency of individual knowledge measurement within organisations. He suggested that knowledge assessment should not be a one-time practice, but rather should be conducted in regular time intervals to enable organisations to monitor the development of their knowledge stocks. Recent research has also adopted this perspective. Lerro et al. (2012) state that knowledge asset evaluation should not be a "*snapshot*" because by time knowledge assets either evolve or loose their value. They recommend that measurement would be conducted systematically to enable tracking of "*evolution trajectories*" of knowledge assets.

The pilot study provided valuable practitioner insights and recommendations that were, in many cases, confirmed by the findings of recent academic research publications. In light of the interviews and discussions with KM experts, the *MinK* framework was subsequently modified and some of the recommendations were incorporated. The modified version of *MinK* is used in the ensuing validation stage.

5   Validation

5.1 Design and Data Collection

In order to validate the framework, a survey approach is adopted. It was found to be the most suitable method to collect data from a large geographically dispersed sample of respondents in a cost effective manner and to be analysed quantitatively (Saunders et al., 2009, Easterby-Smith et al., 2012). A structured questionnaire composed of 58 questions divided into four sections was designed as the data collection instrument. Before populating the questionnaire, a preliminary survey was carried out with a group of senior managers and KM experts. Positive feedback was obtained from this exercise, which helped in fine-tuning the questionnaire and adjusting some terminology to ensure clarity. Redundant and/or irrelevant questions were excluded to shorten the number of questions in the final version.

The first section of the questionnaire comprised multiple-choice questions about the demographics of the participant and the organisation including the company's industry, size, age and location. In the second section, respondents were asked to indicate their level of agreement with a number of statements about KM in their organisations. Questions adopted a seven-point Likert scale ranging from 1="Strongly disagree" to 7 = "Strongly agree" (Likert, 1932). The third section introduced *MinK*'s ten IKIs and respondents were asked to rate the relevance of each indicator to individual knowledge using the same scale. A statement explaining each IKI was provided in the footer for further clarification. In the fourth section, respondents rated metrics that are proposed to measure each IKI then evaluated the effectiveness of the *MinK* framework holistically.

The sample of respondents consisted of managers in junior, middle and top positions from small and medium enterprises in addition to large corporations across a diversity of industries and excluded employees in non-managerial positions. To obtain reliable data, it was decided to choose organisations with 10 or more employees that have existed for more than five years and preference was given to leading multinationals. Smaller and younger companies were viewed as less likely to have a fully developed KM strategy and practice. Other criteria for selected managers included English language proficiency and researcher's access to their email addresses.

The questionnaire was conducted using the internet-based software *SurveyMonkey*. Formal emails were sent to more than 1000 managers inviting them to participate in the questionnaire. The invitation email provided a brief introduction to the research and its purpose and directed recipients to the web link of the survey. Respondents were offered to receive a summary of the research findings, if interested, as an incentive to complete the questionnaire. Follow-up e-mails were also sent at weekly intervals to increase the response rate. To eliminate concerns regarding confidentiality, respondents were informed that the questionnaire is completely anonymous since no personal information

was required at any stage of the questionnaire. This meant that researchers had no means of linking a certain response to a specific email address to ensure anonymity.

The administration of the questionnaire took place in stages and responses were monitored to ensure the data collected had a minimum of errors and missing data. Incomplete responses are eliminated from results. After verification, data is organised in tabular form to be analysed using the Statistical Package for the Social Sciences (SPSS). Since data collection was still on-going during the writing of this paper, only sample results composed of 179 completed responses received to-date are presented in this article. The full set of results, the final response rate and an extensive statistical analysis of the data will be reported once the data collection phase has been completed.

5.2 Results

The characteristics of the organisations that contributed in the survey are demonstrated in the data sample (Table 1, Figures 4-5). Respondents are clearly from a diverse background of industries and mostly senior and middle managers where the proportion of top management so far is 39.1%. Almost half of the companies surveyed are large organizations having more than 1,000 employees and around 30% are medium size having between 100 and 1000 employees. The proportion of multinational enterprises amounted to 86%, while the rest (14%) were indigenous companies.
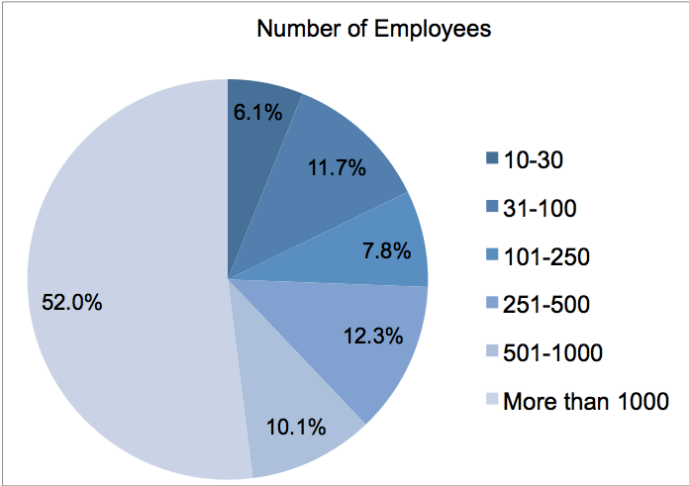
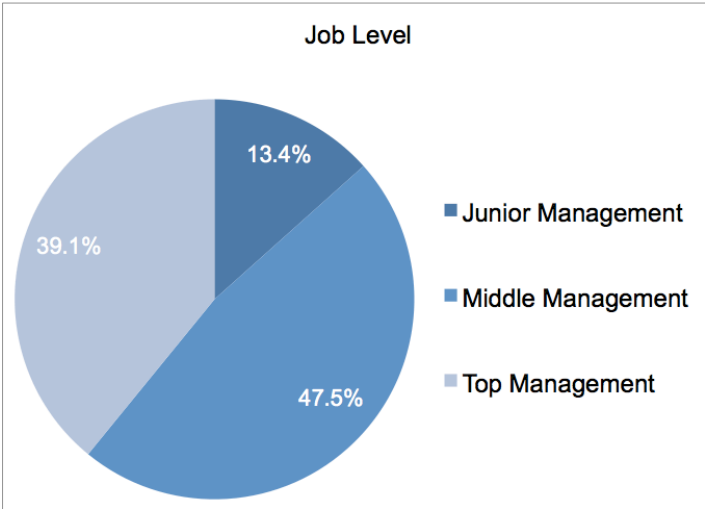**Figure 4: Profile of respondents – Company size**

Figure 5: Profile of respondents – Job level

Table 1: Profile of respondent organisations

Industry	Frequency	Proportion (%)
Advertising & Marketing	8	4.5%
Agriculture	2	1.1%
Banking, Financial Services	11	6.1%
Consulting	6	3.4%
Education & Training	28	15.6%
Food & Beverage	13	7.3%
Government & Non-profit	8	4.6%
Healthcare	13	7.3%
Logistic & Warehousing	10	5.6%
Manufacturing	8	4.5%
Petroleum & Energy	10	5.6%
Pharmaceuticals	15	8.4%
Real Estate	3	1.7%
Retailing	10	5.6%
IT & Telecom	21	11.7%
Tourism & Travel	7	4.0%
Trading & Distribution	6	3.3%
Total	**179**	**100%**
Company Age		
5-10 years	20	11.2%
11-20 years	35	19.6%
21-35 years	40	22.3%
36-50 years	20	11.2%
50 - 100 years	23	12.9%
More than 100 years	41	22.9%
Total	**179**	**100%**

In the first section of the questionnaire, the value of individual knowledge was emphasised by the managers as results confirmed organisations believed most of their knowledge was held by individual employees and that such knowledge was directly correlated to their company's performance (Figure 6).
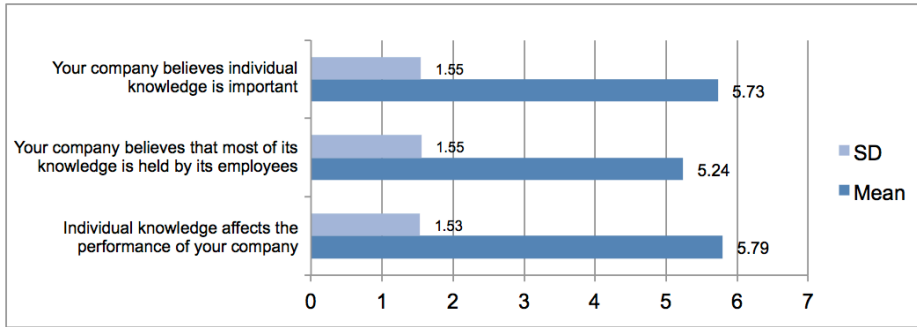
Figure 6: Questionnaire results - Importance of individual knowledge

(SD: Standard Deviation)

When the relevance of IKIs was assessed (Figure 7), most indicators where highly rated with nine out of ten indicators gaining average ratings of over 5 and the experience IKI rating 6.05. The lowest average rating of 4.49 was given to remuneration, which confirms the findings of the pilot study in which it was seen as the least relevant IKI. Metrics corresponding to each IKI are listed in Table 2 along with their mean ratings.
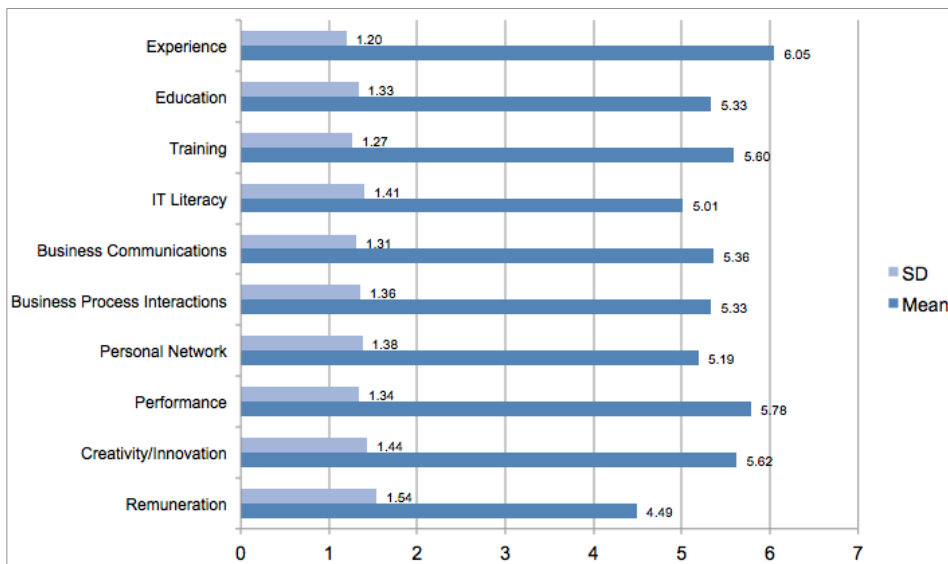

Figure 7: Questionnaire results - IKI Ratings

Table 2: Rating of Metrics

Indicator	Metrics	Mean	SD
Experience	Number of years in the company	4.8	1.5
	Number of years in function	5.5	1.3
	Number of years in the Industry	5.7	1.2
Education	Level of education	5.6	1.1
	Relevance of education to job	5.7	1.3
	International Exposure	5.6	1.3
	Proficiency in different languages	5.0	1.5
IT Literacy	Proficiency in general software & hardware	5.4	1.3
	Proficiency in function specific software & hardware	5.2	1.4
Training	Level of professional qualifications	5.5	1.1
	Number of training programs attended	4.8	1.4
	Impact of training attended on performance	6.1	1.1
Business Communications	Number of meetings attended per week	3.8	1.7
	Type of meetings attended (internal/external)	4.9	1.4
	Level of meetings (with managers/peers/subordinates)	5.2	1.3
	Rate of communications received per week	4.5	1.5
	Rate of communications sent per week	4.6	1.5
Business Process Interactions	Number of processes utilised	4.8	1.3
	Level of specialisation in utilised processes	5.3	1.1
	Number of processes supervised/reviewed	5.3	1.1
	Number of process improvement suggestions	5.7	1.1
	Level of involvement in business process improvement systems	5.7	1.2
Personal Network	Extent of contacts within the company	5.3	1.2
	Extent of external contacts	5.7	1.2
	Extent of international contacts	5.6	1.1
	Relevance of contacts to business	5.9	1.2
	Contact acquisition rate	5.0	1.5
Creativity & Innovation	Number of new ideas suggested	5.3	1.3
	Number of new ideas implemented	6.0	1.2
Remuneration	Salary	4.8	1.6
	Market cost of equivalent services	5.4	1.3

The last question in the questionnaire enquired whether managers believed that, overall, *MinK* would provide a *good* measure of individual knowledge. Results indicated it received a mean rating of 5.5. The response to this question in addition to the average ratings of indicators and metrics indicate that the *MinK* framework was *well received* by managers and accepted as a valid individual knowledge measurement tool.

6   Conclusion

This study presented the development of *MinK*, a framework designed to measure individual knowledge in a business context to support managers in KM decision making, enhance the effectiveness of KM systems, and to address an existing research gap. Ten indicators denoting knowledge stocks, flows, performance and market value were selected and metrics were developed to assess individuals' knowledge characteristics for each indicator. As a preliminary validation practice, a study was conducted through semi-structured interviews with managers from different industries to obtain feedback on the model from a practitioner perspective. This provided valuable comments and constructive feedback that were used to refine the model.

A number of managers suggested that training should be evaluated by outcome rather than by duration or cost, and believed that remuneration and academic grades where irrelevant measures of knowledge. There was a general preference to use qualitative assessments rather that quantitative metrics while measuring knowledge flow parameters in order to reflect *quality* rather than *quantity*. The generalisability of *MinK* was also questioned and researchers were encouraged to investigate whether it would be a generic framework or should be adapted to different company profiles. Another proposition discussed the frequency of knowledge assessment and suggested it should be conducted periodically to monitor the evolution and/or loss of knowledge assets. Finally, the motivation to share knowledge emerged as a crucial factor for the success of KM

in organisations. It was noted that most of the aforementioned practitioner views were found to be confirmed by researchers in the KM literature.

In the subsequent phase, a wide scale web-based questionnaire targeting managers was launched as part of the validation stage. Since data collection is still in process, only sample results were presented in this paper. Results showed that the *MinK* framework was highly rated by managers and well received as an individual knowledge assessment model. Once data collection has been completed, planned work includes an extensive statistical analysis of the questionnaire results to reveal data trends and correlations that may provide other new research insights.

Acknowledgements

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