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Knowledge acquisition and organisational performance in project-focused companies

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Abstract

The temporary nature of employment contracts can negate allegiance of workers to construction and engineering companies that are project-focussed. This affects the employee's willingness to share knowledge and permit its institutionalisation. Similarly, such a short-term relationship often implies that the employer would scarcely invest in employee-development. The nature of the relationship can, therefore, bode negative consequences for knowledge acquisition and its ability to affect organisational performance in a project-focused environment.

The purpose of this study, which was conducted from a positivist philosophical perspective, was to explore the relationship, if any, between knowledge acquisition and organisational performance. A mixed method research design was adopted. Self-administered questionnaires and follow-up telephonic interviews were utilised to collect data from a non-random sample of employees drawn from all construction companies listed on the Johannesburg Stock Exchange (JSE).

The study revealed that in the project-focused companies researched, high knowledge acquisition scores were associated with sound organisational performance. Consequently, companies ought to invest in mechanisms that enable the acquisition of knowledge from individuals and its transfer to institutional repositories. This, if done, is likely to benefit organisational performance.

Key phrases

acquisition, construction, knowledge, management, performance, project

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1. INTRODUCTION

Post-apartheid South Africa has witnessed extensive development, especially in terms of infrastructure. This is not only attributed to public sector expenditure but includes efforts in the private sector. According to Maharaj and Ramballi (1998:131), many construction and development interventions have been embarked upon in South Africa, largely to reduce certain inequalities created by the apartheid system of governance. This essentially signals that infrastructural deficiencies in certain geographical areas are being redressed. Despite this, the construction and engineering sector in South Africa is associated with poor performance, arguably due to the shortage of relevant skills and knowledge (Creamer Media Engineering News and Mining Weekly 2015) among the local population. MacGregor (2008:57) posits that this can be a major challenge since work in the construction sector tends to be project-based, and it makes the acquisition and consequent transfer of knowledge from one project to another, a critical consideration for performance. This is arguably the case because subsequent projects may witness improved performance if construction projects, whether they are executed by the same team members or not, have a repository of knowledge to tap from.

Indeed, the case for effective knowledge acquisition is furthered by the dynamic business environment, which arguably justifies Tobin and Magenuka's (2006:101) position that construction companies now require new solutions to meet the growing demand for new types of buildings and structures. In the South African situation, the dearth of skills and knowledge, as with any enterprise, can have far-reaching ramifications for the project-executing organisation. Such an environment could make the acquisition and dissemination of valuable knowledge to other projects a difficult undertaking (Kruger & Johnson 2013:270) which can lower performance potential. Furthermore, the fragmentation of the construction and engineering sector is also a veritable contributor towards poor performance primarily due to the absence of effective communication between parties in construction or engineering projects (MacGregor 2008:57). Against this background, a tenable proposition could be that formal knowledge management involving the collection, dissemination and utilisation of project-generated knowledge can be beneficial to the entire organisation.

For construction companies which fundamentally rely on project teams, constituted as may be deemed necessary, the issue of knowledge acquisition cannot be over-accentuated. For

instance, the reality of employees vacating their positions (either due to retirement or alternative employment) poses knowledge acquisition and retention challenges for organisations. Kacmar, Andrews, Van Rooy, Steilberg and Cerrone (2006:141) argue that the mobility of knowledge workers has immense implications for performance because it affects available human capital. Nyberg, Moliterno, Hale and Lepak (2014:321) assert that human capital comprises knowledge, skills and abilities of the workforce, among others.

Consequently, when employees leave project-focused organisations, it inevitably amounts to a loss of human capital, and more so if the employees leave with important knowledge that the organisation is yet to acquire. The situation related to the specific 'lost knowledge' does not necessarily change even when the exiting employees are replaced.

Long-serving employees are custodians of significant knowledge, experience and processes that have to be conveyed clearly and comprehensively to fellow employees in the organisation. Yet, as Lesser (2009:12) opines, the preservation of knowledge of long-serving employees remains a challenge for companies in the construction and engineering sector. The point is that it seems reasonable to invest in efforts aimed at securing and storing existing knowledge or organisations may never be able to recoup the pieces of invaluable information.

The consequences of the forfeiture of knowledge ranges from loss in efficiency, time, failure to reach strategic goals, decrease in levels of customer and employee satisfaction. It also leads to excessive expenditure in trying to recoup pieces of lost knowledge, which ultimately results in compromising an organisation's performance potential (Stevens 2010:17). In recognition of the fact that knowledge has taken on a vital strategic role, certain organisations have embarked on enterprise–wide knowledge management initiatives to leverage as well as transform organisational knowledge assets into core competencies to enhance performance (Eftekharzadeh 2008:46). Whether this is the case among construction companies in South Africa, remains to be seen.

The study, therefore, aims to explore knowledge acquisition and how it relates to organisational performance specifically in the context of project-focused organisations in the engineering and construction sector.

The study is significant as it aims to produce empirical evidence that links knowledge acquisition to organisational performance in South Africa's engineering and construction

sector. If such a relationship is established, then it would provide impetus for meaningful investment in mechanisms that would enable the acquisition of knowledge from employees, especially in environments which require employees to function for short periods of time. If the expected relationship is not established, then investment in knowledge acquisition with the intent to achieve improved organisational performance becomes questionable.

2. LITERATURE REVIEW

Meihami and Meihami (2014:81) posit that knowledge can easily be touted as an invaluable asset that an organisation has at its disposal. This could possibly be because of the difficulty associated with the acquisition or imitation of intangible resources by competitors. Typically, the intangibility and uniqueness of such resources have made the practice of knowledge management necessary in knowledge-intensive work environments (Sveiby 2001:346). Unfortunately, Eresia-Eke and Makore (2016:89) reveal that this lesson has evaded certain construction companies in South Africa because rigidity and reluctance to change work procedures continues to impede proper knowledge management. Kruger (2009:66) asserts that organisations that manage their knowledge are capable of coordinating and combining their resources including capabilities, in new and distinctive ways so as to provide additional value to their customers.

Through learning, people gain knowledge, which is translated into the organisation's daily routine and culture. Calo's (2008:408) observation that individuals know more than they can tell, is reflective of the notion that knowledge is some kind of 'object', therefore, it could be considered as an item that can be warehoused or transformed.

According to Zhao, Lu and Wang (2013:902), the management of knowledge is a dynamic process. This implies that it is not merely an act but rather involves a sequence of activities. Alavi and Leidner (2001:109) describe this process as one that primarily focuses on the application of know-how or expertise centred on forming, mobilising, sharing, and dispensing knowledge practices. Accordingly, Meihami and Meihami (2014:85) contend that the management of knowledge requires the construction and management of data. This entails knowledge being well-organised to simplify access to information. Knowledge is a valuable resource for organisations and yet its acquisition is one of the most significant issues that managers have to face (Apolloni, Mavisu & Ozeren 2014:173).

Perhaps, the difficulty may not be unrelated to the fact that knowledge is an intangible resource and therefore, difficult to quantify and store as an asset. Consequently, the provision of resources for the acquisition and management thereof for which tangible proof cannot be easily proffered, may not be an attractive prospect for those who manage organisations. Nonetheless, perhaps the practice of knowledge acquisition and management needs to be taken more seriously since Meihami and Meihami (2014:87) posit that organisations can increase their operational effectiveness and efficiency with well-organised and distributed knowledge.

Often, generating value from knowledge assets would require knowledge-sharing among personnel, divisions and other organisations in an endeavour to derive best practices. Therefore, managers should create ideal conditions within the given context to drive and optimise the establishment of knowledge acquisition and sharing initiatives (Donate & Sanchez de Pablo 2015:363).

There are proposals from various researchers on the methods and agents of knowledge acquisition in organisations (Appolloni *et al.* 2014:176), for example, knowledge acquisition can be accomplished during socialisation (Nonaka, Konno & Toyama 2000:29); through mentorship and the utilisation of teams (Mitchell, Nicholas & Boyle 2009:537); by using skilled facilitators to encourage open conversations and deliberations as well as to extract vital knowledge (Fong, Hills & Hayles 2007:42); by cooperation (Yang 2007); through porous organisational boundaries and contingent work (Gold, Malhotra & Segars 2001:187).

An organisation's knowledge management structure is intended to be multi-dimensional. On the one hand, organisational structures should encourage rather than inhibit interaction among employees, which is critical for the acquisition of knowledge (Kim, Lee, and Chun & Benbasat 2014:400). On the other hand, the structures should be flexible enough to allow the organisation to adapt to the ever-changing environmental landscapes. This is possibly why organisations specifically utilise knowledge management structures to facilitate knowledge acquisition and sharing (Wang, Noe & Wang 2014:983).

Therefore, it is important that organisational structures are designed such that they are flexible, encourage sharing and collaboration across organisational boundaries and across the supply chain (Schoenherr, Griffith & Chandra 2014:7). Rational reasoning may suggest that this position should also be applicable to project-focused organisations, because the

sharing of knowledge and other resources may potentially contribute towards improved performance.

A culture that discourages employee engagements can be an impediment to organisational effectiveness in the management of knowledge. Therefore, shaping culture is core to the organisation's ability in the acquisition of knowledge and sharing (Kim *et al*. 2014:401). Culture is reflected in facets of the company such as the mission and embraced values and at a deeper level, culture is entrenched in the way people act, their expectations of each other and how they make sense of each other's actions (Schoenherr *et al*. 2014:11). Wong and Aspinwall (2005:74) summarise a culture that is supportive of knowledge acquisition as one that encourages:

- knowledge-seeking and problem-solving behaviour.
- high level of trust among employees in sharing knowledge.
- open-sharing of mistakes without the fear of punishment.
- collaboration and teamwork.
- empowerment of employees to explore new possibilities.
- acceptance of knowledge sharing (not hoarding) as a strength.

Knowledge acquisition can be interpreted through the social perspective whereby recognition is given to the manifestation of human and social dimensions as its major components, with leadership style and technology having a role to play (Donate & Sanchez de Pablo 2015:365). However, research has paid insufficient attention to knowledge-sharing between employees but has instead focused on knowledge creation and transfer at the team, unit or the organisational level (Wang *et al.* 2014:991). This concern relates to the process element of knowledge acquisition where effective communication among employees and encouragement of continuous learning at all levels are key considerations (Meihami & Meihami 2014:90).

Freedom of individuals to pursue action without prior approval is also shaped by the social ecology in knowledge acquisition. The social ecology framework encompasses issues related to how employees interact with parties inside and outside of the firm. All these are likely to have implications for the management style and systems, organisational structure in terms of networks, as well as alliances and communities of practice (Donate & Sanchez de

Pablo 2015:367). Invariably, social ecology points to a social system that is not a random collection of incongruent elements but a comprehensive and wholesome entity comprising elements that interact with each other (Wang *et al.* 2014:987).

It is noteworthy to indicate that the essential characteristic of a knowledge community is the presence of conversation and other forms of narratives such as story-telling, unguarded discussions sharing professional interests and understanding the context under which the conversation takes place (Kruger & Johnson 2013:7). Mwila (2013) argues that the eventual aim of acquiring and sharing knowledge is to transform all individual know-how and experiences into organisational competencies.

Proponents of knowledge management argue that because knowledge-based competencies and capabilities are generally difficult to imitate and socially complex, they are among the major determinants of sustainable competitive advantage and superior organisational performance (Alavi & Leidner 2001:118; Kok 2007:186). Extant knowledge-management literature suggests that knowledge management practices can affect and be positively affected by an organisational performance framework that creates a focus on elements that work together to deliver a well-executed strategy through an engaged workforce, resulting in a great customer experience, profitability and high organisational performance (Waal 2006:205).

These positions suggest that acquisition of knowledge as a practice can influence organisational performance by generating benefits categorised by Kosilov (2010:12) as knowledge, intermediate and organisational benefits. Knowledge benefits include faster access to knowledge and improved thinking, intermediate benefits are related to issues such as the minimisation of duplication and quicker problem-solving propensity while organisational benefits encompass, *inter alia*, improved customer service and innovativeness.

Since engineering and construction businesses tend to be 'project-focused', knowledge acquisition processes need to be institutionalised to collect, disseminate and use project-generated knowledge for the benefit of the entire organisation (Tobin & Volavsek 2006:103). This position should apply in the context of the South African construction industry that thrives on a project approach linked to the practice of hiring and laying-off employees as projects may dictate. Invariably, such a practice could make it difficult to compile and

disseminate useful knowledge to other projects. This is despite the reality that current market dynamics and trends towards customer-oriented services in the construction industry, demand the application of knowledge, particularly within project organisations (Tobin & Magenuka 2006:101).

This provides substantial impetus for the argument that one of the principal objectives of an organisation should be to optimise the expertise of its knowledge workers in producing new products, services or ways of working in order to sustain competitive advantage for organisational performance (Gold, *et al.* 2001:195; Grandori & Soda 2006:155; Massey & Montoya-Weiss 2006:104). Much of this is doable because as argued by Eresia-Eke and Makore (2015:481), knowledge management allows for knowledge to be retained in the organisation rather than be resident only among employees. It is a view that is particularly instructive for project-focused companies because employees are contractually appointed on a temporary basis.

3. RESEARCH METHODOLOGY

The primary purpose of the study was to investigate the possible existence of a relationship between knowledge acquisition and organisational performance in a project-focused environment. The motivation is linked to the projection that in a project-focused environment, employees function for short tenures due to the temporary nature of their employment and therefore, the need for organisations to acquire the knowledge of such employees ought to be greater. Furthermore, project-focused organisations that place a higher premium on the acquisition of knowledge may be able to perform better others.

In pursuit of the aforementioned purpose, this empirical study which was executed from a positivism perspective utilised primary and secondary data from the respondent population. This positivist philosophical viewpoint leans upon objective and scientific evidence to reveal the true nature of operations or inter-dependencies between constructs in society. The adoption of a positivist inclination often implies that researchers remain detached from the phenomenon being investigated, driven by a conviction that society shapes individuals and not the reverse.

This study is an applied research because it is focused on issues with practical implications. It adopts a deductive approach and employed the survey method as a strategy of inquiry.

The unit of analysis in the study was the construction and engineering company though the population of interest was delimited to those listed on the Johannesburg Stock Exchange (JSE). Since only ten construction and engineering firms were listed on the JSE in 2013, the study included all of them. Given the diverse skills and knowledge that workers require in the construction and engineering companies, this cohort of companies seemed to present a relevant group for the investigation.

Purposive sampling was utilised to identify and select respondents from the JSE-listed companies. The study acknowledges that this is a non-probability sampling technique and so the findings of the study cannot be generalised. Nonetheless, this sampling technique was selected because it had previously being used in studies in the knowledge management domain (see Wong & Aspinwall 2005; Eftekharzadeh 2008).

Furthermore, the technique assisted to identify key data sources which were the overseers of various departments within the selected organisations and consequently, considered to be the thought leaders. In essence, the key-informant technique was utilised. All the targeted respondents were knowledge workers in the respective construction and engineering companies. Knowledge workers are defined by Tobin and Magenuka (2006:104) as professional workers which in the context of construction and engineering would include engineers, architects, surveyors, designers, technicians, electrical engineers and project managers. These employees constituted the study's respondent population.

A self-administered questionnaire was the primary research instrument utilised by this study to measure knowledge acquisition in the respective companies. The questionnaire was adapted from the knowledge management instrument originally developed and tested by Darroch (2003) and Darroch (2005). The questionnaire comprised five knowledge acquisition factors (KAF1–KAF5). Each factor comprised questions that were meant to test the company's aptitude on particular aspects of knowledge acquisition. The questions took the form of statements with Likert-type response options that ranged from 'strongly disagree' to 'strongly agree'. The intention was to elicit responses that would reveal whether the company:

- is sensitive to information about changes in the market place (KAF1)
- works in partnership with customers (KAF2)
- gathers information through market surveys and other means (KAF3)

- values employees attitudes & opinions (KAF4)
- has a well-developed financial reporting system (KAF5)

While the questionnaire was utilised for the measurement of the knowledge acquisition construct, follow-up telephonic interviews were held with project managers at certain organisations. The interviews focused on the major reasons why employees leave the specific organisation including prime issues that impact on knowledge acquisition in each company. It should be noted that only four of the ten companies surveyed agreed to these follow-up interviews. For the purpose of establishing the performance of the organisation, financial records were utilised. This was in the form of secondary data that was extracted from the published financial statements of the organisations studied. The study was especially interested in the performance measure of average earnings per share over the period 2008-2012.

4. PRESENTATION OF FINDINGS

In the course of executing the study, 500 questionnaires were distributed to respondents drawn from the JSE-listed construction and engineering companies. The questionnaires were delivered to the respondents by the researchers at their various work sites. Unfortunately, only 191 completed questionnaires were returned. However, only 130 of the returned questionnaires had been completed properly and were deemed appropriate for the purpose of data analysis. The response rate of 26% was considered acceptable since it was in the range of response rates to similar studies (see Wong & Aspinwall 2005; Tobin & Volavsek 2006; Tobin & Magenuka 2006) in the knowledge management field.

The respondents' cumulative years of experience in the construction and engineering sector was of interest. It was revealed that from the pool of respondents, 5(2.6%) had worked in this industry for a year, 11(5.8%) for two years, 20(10.5%) for three years, 38(20%) for four years, 34(17.8%) for five years, 25(13.1%) for six years, 25(13.1%) also for seven years, 10(5.2%) for eight years, 8(4.2%) for nine years, 9(4.7%) for ten years and 3(1.6%) for more than a decade. These figures showed that the mode for the distribution of years of experience is four years, implying that employees tend to spend approximately four years with an employer before moving to other organisations in the industry. The rarity of

respondents who had been in the same organisation for a decade and above, was concerning.

Consequently, the researchers requested a face-to-face interview specifically with project managers in the organisations. Out of the ten organisations studied, only project managers in organisations A, B and C accepted the request. However, the request was granted on condition that the interaction would take the form of a telephonic conversation because access to the project sites were highly controlled. The aim of the brief interview was to ascertain the reasons for staff mobility in the respective companies. Table 1 illustrates that the lack of incentives to remain in the same organisation, a lack of career development plans and the retirement of employees were major factors.

TABLE 1: Reasons for employee mobility

Company	Reasons for employee mobility	Summary
A	No incentives to remain in the company.	Length of service in the construction and engineering sector is generally less than ten years. The impact hereof could filter into the company's performance since most knowledgeable and experienced employees would have moved on for a variety of reasons. Consequently, the concern of staff mobility is a real challenge for knowledge acquisition intentions.
B	Lack of career development plans	
C	High staff mobility and retirements.	

Source: Authors' own compilation

A ranking measure for the performance of organisations on the knowledge acquisition (KAC) scale was developed. The adopted instrument comprised of statements that required

responses based on options on a Likert scale. The average scores per item for respondents in a particular organisation were then aggregated to determine its overall KAC score. The aggregation made it possible for companies to then be placed in three mutually exclusive categories of 'low', 'medium' or 'high' KAC performance.

The questionnaire utilised for measuring knowledge acquisition (KAC) practice comprised 14 items, all of which were statements requiring responses based on a five-point Likert scale. The options on the Likert scale included strongly disagree, disagree, neither agree nor disagree, agree and strongly agree and respectively, scores of one, two, three, four and five were assigned to these options. This implied that the possible range of company scores was from a minimum of 14 to a maximum of 70.

Figure 1 illustrates that the scores were distributed evenly across groups, that is, the low performance category would comprise companies with an aggregate score between 14 and 32, companies in the medium category would have obtained scores between 33 and 51, while scores between 52 and 70 served as an indication that the company belongs in the high KAC performance category.

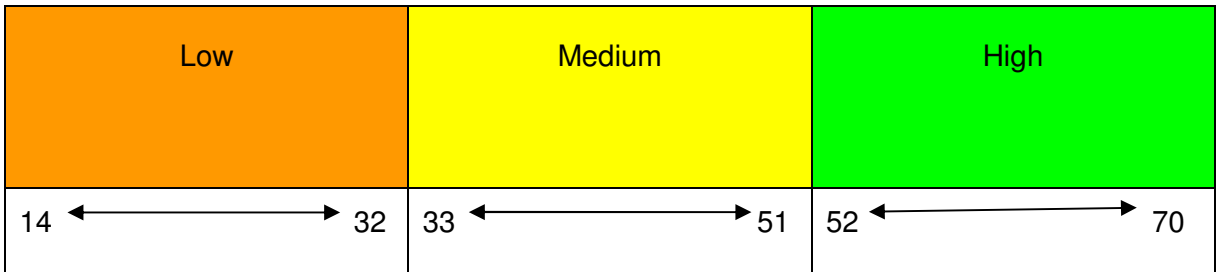

FIGURE 1: Knowledge acquisition (KAC) score categories

Source: Authors' own compilation

The scores obtained by each of the ten companies, labelled A to J to guarantee anonymity, are presented in Table 2. The table reveals the average score of each of the companies per item in the questionnaire, the average score of all the companies in the study per item in the questionnaire as well as the KAC score per company. For example, with respect to KAF 1 (comprising items 1 and 2) that sought to establish if the company is quick to detect changes in customers' preferences and the extent to which the company gathers information about

competitors, company C returned the lowest scores (1.9 and 1.6) while company J obtained the highest scores (4.4 and 4.3). For KAF 2 that focused on the issue of working in partnerships, the lowest score for item 3 which was about meeting with customers was obtained by Company C while company B had the lowest score for item 4 whose interest was on how new ideas were generated. There were two items (5 and 6) that made up KAF 3 that explored the method of information gathering utilised by the companies. The maximum scores for item 5 (which relates to the conduct of market researches) and for item 6 (that is concerned with undertaking of quality assessments), were obtained by company J (4.7) and H (4.4) respectively.

Knowledge acquisition factor 4 (KAF 4) which concerned itself with the value that organisations placed on employees' attitudes and opinions was measured with five items (7-11). The issues of frequency of attitudinal surveys, staff appraisals and participation in knowledge platforms, educational development and staff meetings were explored by items 7, 8, 9, 10 and 11 respectively. While company J returned the highest score of 4, for items 7, 8 and 9, Company C and I obtained the highest scores of 4.4 and 3.9 respectively for items 10 and 11. Items 12, 13 and 14, the constituents of KAF 5 focused on the existence of a well-developed financial reporting system. Item 13 explored the existence of precise knowledge related to issues of product/service costs while item 15 concerned itself with financial information management. Company J obtained the highest score of 4.7 for both items. The highest score for item 14 that focused on the analysis of the final contributions of products and services was obtained by company H.

Overall, the JSE-listed construction and engineering companies performed best with the analysis of financial contribution (Item 14) and performed worst with respect to the regular survey of employees to assess their attitudes towards work (Item 7).

Unfortunately, this revealed the low premium placed on the thoughts and attitudes of employees, possibly because of the seemingly temporary nature of the employees' tenure of work in a project-focused environment. Conversely, the high scores obtained across companies on the item focused on the analysis of financial contribution is indicative of the concrete commercial mind-set of the construction companies surveyed.

TABLE 2: Company knowledge acquisition (KAC) scores per item

KNOWLEDGE ACQUISITION (Scores on the KAC scale)											
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**Average**
Item 1	2.2	2.0	1.9	2.8	3.3	4.4	4.3	4.1	4.3	4.4	3.4
Item 2	1.7	1.7	1.6	2.2	3.0	3.7	3.8	3.5	3.8	4.3	2.9
Item 3	2.3	1.8	1.7	2.5	3.2	3.9	3.8	3.7	4.3	4.1	3.1
Item 4	2.7	2.0	3.3	3.1	3.2	4.0	3.7	3.8	4.1	4.0	3.4
Item 5	2.1	3.0	3.0	4.1	3.4	4.1	3.9	4.0	4.3	4.7	3.7
Item 6	2.2	1.8	1.4	1.8	2.9	4.1	3.9	4.4	4.2	3.8	3.1
Item 7	1.6	1.5	1.5	2.0	2.3	3.5	3.2	3.9	3.7	4.0	2.7
Item 8	2.3	2.3	2.1	3.1	2.6	3.5	3.2	3.5	3.6	4.0	3.0
Item 9	2.1	1.3	1.5	2.2	2.2	3.9	3.6	3.5	3.6	4.0	2.8
Item 10	3.8	4.3	4.4	4.0	4.1	3.1	2.8	3.2	3.6	3.8	3.7
Item 11	2.7	3.1	3.0	3.1	3.0	3.5	3.0	3.8	3.9	3.7	3.3
Item 12	3.8	3.3	3.1	3.9	4.0	4.4	4.4	4.0	4.4	4.7	4.0
Item 13	2.9	2.0	2.0	2.9	3.0	4.2	4.1	4.5	4.4	4.4	3.4
Item 14	3.6	3.5	3.7	3.8	3.5	4.3	4.4	4.6	4.4	4.7	4.1
Total Score	36	33.6	34.2	41.5	43.7	54.6	52.1	54.5	56.6	58.6	

Source: Authors' own compilation

The total company knowledge acquisition (KAC) scores in Table 2 revealed that the best performer was company J with a score of 58.6 while the worst was company B with a score of 33.6. Generally, the total scores obtained by the companies are reflective of the fact that companies J (58.6), I (56.6), F (54.6), H (54.5), G (52.1), E (43.7) and D (41.5) scored better than the other surveyed companies in basically all the aspects of knowledge acquisition that were probed by the questionnaire.

Follow-up telephonic interviews with project managers of three of the surveyed companies revealed that the major issues that affected knowledge acquisition in their respective companies included the utilisation of contractors, short-term temporary employment of staff and the poor support provided by the company for employee educational development (see Table 3).

TABLE 3: Prime issues impacting upon knowledge acquisition

Company	Issues affecting knowledge acquisition	Brief discussion
I	Extensive use of contractors	The companies engaged contractors for specialist knowledge e.g. architects. The impact of this for knowledge management could be interesting as contractors may opt to retain rather than share their knowledge in order to remain relevant for future projects.
B	Most employees are engaged on a contract basis	The commitment of an employee employed temporarily is questionable when it comes to sharing knowledge, and this could have an effect on the overall performance of the organisation
C	Further education is regarded as the responsibility of the individual	This implies that the company is not favourably disposed towards financing or providing opportunities for further education of the individual. In such a situation, knowledge growth can be stunted.

Source: Authors' own compilation

Seven project managers (company I, 3 respondents; company B, 2 respondents and company C, 2 respondents) were willing to participate in the follow-up interviews to further

explore the issues that may negatively impact on knowledge acquisition. The three respondents from company I, contended that there was an over-reliance on contractors in projects executed by their company. This, they claimed, posed a challenge for knowledge acquisition by the company because the contractors are driven by a singular motive to execute their tasks and receive payment as soon as possible. The implication is that contractors spare limited or no regard for the knowledge acquisition intentions in the company.

In the specific case of company B, the respondents argued that the predominant practice of contract-employment affected knowledge acquisition intentions. The respondents revealed that this preferred approach of employment does not necessarily augur well for knowledge acquisition because there is scant allegiance to the company by employees who are contracted to work for the organisation for a short-term. The consequence is reluctance of these employees to share knowledge with the company and this impacts on the aspirations of knowledge acquisition of the company.

In company C, the primary issue was that the organisation was reluctant to invest in the education of employees thereby making it extremely difficult to acquire new knowledge. Consequently, those employees who pay for their education, are not obliged to share their knowledge with the company. This is likely to impede any knowledge acquisition motives that the company may have.

It would seem that knowledge acquisition through training is not a priority for the JSE-listed construction and engineering companies. A site manager at one of the construction companies suggested that the reason for this situation is that the company prefers to "engage contractors with specialist knowledge on the various activities required at every stage of the project". The practice is institutionalised because the names of the contracted companies were displayed on the project information board at the site; this seemed to be the prevalent practice by all the construction companies. The reason could be related to the fact that jobs come in the form of projects with stringent completion timelines. Therefore, time has not been set aside to send employees for training.

Each of the ten surveyed companies was categorised in groups of low, medium and high knowledge acquisition performance based upon the total KAC scores they had obtained. The categorisation is presented in Table 4.

TABLE 4: Categorisation of companies according to KAC scores

High	Medium	Low
F; G; H; I; J	A; B; C; D; E	None

Source: Authors' own compilation

To enable the intended categorisation, the scores obtained by the companies on the knowledge acquisition scale (Table 2) are subjected to the criteria for KAC score categories (Figure 1). The outcome was that companies F, G, H, I and J can be placed in the high KAC performance category since their total scores fall in the 52-70 bracket. Interestingly, no company fell into the low KAC performance category, since none of them had a KAC total score that was less than 32. Companies A, B, C, D and E had KAC scores in the range of 33 to 51 which implied that they belonged to the medium KAC performance category.

The total knowledge acquisition scores were tabulated against the actual organisational performance per company. The measure of organisational performance was objective rather than perceptual and it was extracted from each company's published financial statements for the period 2008 until 2012. For this five-year period, the study adopted earnings per share as its measure of organisational performance. The annual earnings per share (EPS) for any of the organisations is equal to the net profit divided by the number of issued ordinary shares.

Table 5 is a presentation of the KAC score, KAC category and average earnings per share of each of the ten surveyed companies.

Some relationship appears evident between KAC scores and actual organisational performance, particularly for those at the top or the bottom of the KAC ladder for the surveyed companies. The interesting finding from the figures presented in Table 5, is that a high KAC score tends to be associated with a high EPS that is indicative of sound organisational performance; and conversely, a low KAC score is coincident with a low EPS, which reflects poor organisational performance. For instance, companies I and J are the top two companies in the cohort of companies in the high-KAC category. The two companies also returned impressive high average earnings per share figures. At the other extreme, companies B and C, both at the bottom end of the medium-KAC category, obtained the

lowest scores on the KAC scale in the study. Inspection of the EPS organisational performance measures of companies B and C revealed that these two companies had the lowest earnings per share of the ten surveyed companies.

TABLE 5: KAC category compared to actual organisational performance

Company	KAC score	KAC category	Average Earnings per share (EPS) for the period 2008 - 2012
A	36.0	Medium	-0.39
B	33.6	Medium	-130.84
C	34.2	Medium	-246.00
D	41.5	Medium	177.20
E	43.7	Medium	0.09
F	54.6	High	0.05
G	52.1	High	116.00
H	54.5	High	0.33
I	56.6	High	698.00
J	58.6	High	1166.70

Source: Authors' own compilation

These results have specific implications for the organisations studied. Given the direct association of EPS and KAC, it would be imperative for the organisations to invest some effort in the development or refining of systems that enable knowledge acquisition from employees on a continuous basis.

As part of this effort, organisations may also wish to consider the creation of memoranda of agreements with contract employees indicating the organisation's preference for their services and committing to utilising them, whenever a new project is to be executed. This

may increase the allegiance of such employees to the organisation, consequently paving the way for easier knowledge acquisition. A similar recipe could be utilised for contractors as this would enable healthier relationships and the development of stronger partnerships between the organisations and their contractors. Due to the camaraderie in such a working environment, the effort of knowledge acquisition is likely to meet with higher levels of cooperation and therefore, be more effective.

5. LIMITATIONS

While the findings of this study are useful to improve the practice and study of knowledge acquisition, it is appropriate to highlight that context is of particular significance in studies such as this one. Therefore, caution needs to be applied to generalising its findings, more so because a purposive sampling method was adopted.

The study utilised the key-informant technique to access respondents who were recommended by their respective human resource managers. This invariably can result in human resource managers selecting participants whom they perceive would offer responses that are favourable to the organisation. This, if it occurred, could have serious implications for the findings of the study due to bias. Though the study relied on a census of companies, the total number of companies studied is relatively small for extensive quantitative statistical analysis which impedes the development of a predictive model that links the independent variables in the knowledge acquisition construct to the dependent variable of organisational performance.

Furthermore, the use of a cross-sectional rather than a longitudinal time frame for the study implied that only a snapshot of the organisation is captured and utilised to determine the status of knowledge acquisition. This limitation is instructive, especially in the light of the fact that the dependent variable of organisational performance (to which the study sought to link KAC scores) was a longitudinal measure over a period of five years.

6. RECOMMENDATIONS

In the light of the results and findings of the study, the following recommendations that could be taken into consideration by project-focused organisations, are proposed. The recommendations are inspired by a quest to enhance the practice of knowledge acquisition

including the contribution of potential future studies to the academic literature in the knowledge acquisition domain of project-focused organisations in the construction industry. From a practical perspective, the bid to successfully achieve the institutionalisation of knowledge acquisition in companies may be enhanced by the following recommendations:

- Management should share with employees the purpose and collective goal of knowledge management and highlight how knowledge acquisition fits the goal.
- An engagement platform between management and contract employees should be established in companies. Such a platform could be used to address the causes of any negative perceptions linked to how management values employees.
- It could be beneficial to adopt an approach to knowledge acquisition almost akin to a *quid-pro-quo* arrangement. This can be operationalised through formal and informal platforms that not only encourage employees to share their knowledge but to also learn from others. In this regard, companies could consider investing in organising workshops, hosting meetings, creating bulletins board, constructing skill directories, forming alliances with international professional associations and connecting to electronic/physical forums that enable collaborative thinking.
- Managers in the construction and engineering sector should select and implement a limited number of knowledge acquisition measures and initiatives that are feasible in the context of the company's business processes, level of cultural readiness and funding constraints.
- Adequate attention must be paid to the people, processes and structures to adopt veritable information and communication technologies such as the utilisation of intranet discussion platforms that easily lend themselves to knowledge acquisition initiatives.
- Construction and engineering companies should provide opportunities for employees' professional development and encourage life-long education and training, particularly in areas that would enhance employees' skills or expand their areas of specialisation.

From an academic perspective, the findings of this research point to the need for further statistical tests of the relationship between KAC and organisational performance. This is possible if a larger pool of participating companies across industrial sectors is utilised. Future studies could also examine the possibility of geographical, industrial or firm size nuances on the association between KAC and organisational performance. It is also recommended that

further studies consider investigating other knowledge management elements besides KAC that could affect performance. These studies could be even more meaningful if they are longitudinal in nature. In this way, the effect of knowledge management practices on the performance of the company can be determined over a period of time.

7. CONCLUSION

The purpose of the study was to determine if a relationship exists between the practice of knowledge acquisition and organisational performance. The study revealed that organisations that obtained high scores for knowledge acquisition also tended to perform better than the rest, when the average earnings per share measure of organisational performance was considered. The study realised its purpose as it established that organisational performance and the practice of knowledge acquisition bear a direct relationship.

In the South African engineering and construction industry, company performances with respect to knowledge acquisition and earnings per share are coincidental given that companies I and J, which have the highest earnings per share also have the highest knowledge acquisition scores. The same is true for companies B and C that obtained low performance scores for knowledge acquisition as well as earnings per share. These results fundamentally serve to motivate for the improvement of knowledge acquisition practices and processes in the surveyed organisations. Halawi, Aronson and McCarthy (2005:75) argue that the ability to develop and leverage the value of intangible assets such as knowledge, constitutes a core competency for organisations, particularly those which provide professional services. This position resonates with that of Eresia-Eke and Makore (2016:82) who contend that due to the effect of globalisation, the route to survival and success for businesses specifically on the African continent is linked to the utilisation and management of intangible resources of which knowledge is a critical aspect.

Drawing from the results of this study, it can, therefore, be argued that investing in the institutionalisation of knowledge acquisition in a company is indeed a worthy organisation strategy. This is more so in today's ever-changing business environment and competitive landscape where knowledge is essential for the success of the organisation. Since the organisation’s employees are reservoirs of enormous and invaluable knowledge that are

significant for an organisation's survival, companies that successfully acquire and institutionalise this knowledge can enjoy sustainable organisational performance.

REFERENCES

ALAVI M & LEIDNER D. 2001. Review: knowledge management and knowledge management systems: conceptual foundations and research issues. *MIS Quarterly* 25(1):107-136.

APOLLONI A, MAVISU M & OZEREN E. 2014. Knowledge management practices and related benefits in Turkish manufacturing firms. *International Journal of Intelligent Enterprise* 2(2/3):169-195.

CALO T. 2008. Talent management in the era of the aging workforce: the critical role of knowledge transfer. *Public Personnel Management* 37(4):403-416.

CREAMER MEDIA ENGINEERING NEWS AND MINING WEEKLY. 2015. Construction: a review of South Africa's construction sector. *Creamer Media's Research Channel Africa.* 30 January.

DARROCH J. 2003. Developing a measure of knowledge management behaviours and practices. *Journal of Knowledge Management* 7(5):41–54.

DARROCH J. 2005. Knowledge management, innovation and firm performance. *Journal of Knowledge Management* 9(3):101-115.

DONATE M & SANCHEZ DE PABLO J. 2015. The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of Business Research* 68:360-370.

EFTEKHARZADEH R. 2008. Knowledge management implementation in developing countries: an experimental study. *Review of Business* 28(3):44-58.

ERESIA-EKE C & MAKORE S. 2015. The relationship between knowledge dissemination and organisational performance in the construction sector. *The Scientific Journal for Theory and Practice of Socio-economic Development* 4(8):477-492.

ERESIA-EKE C & MAKORE S. 2016. Responsiveness to knowledge and organisational performance of listed-companies in the construction sector. *Journal of Economics and Behavioural Studies* 8(5):82-90.

FONG P, HILLS M & HAYLES C. 2007. Dynamic knowledge creation through value management teams. *Journal of Management in Engineering* 23(1):40-49.

GOLD A, MALHOTRA A & SEGARS A. 2001. Knowledge management: an organisational capabilities perspective. *Journal of Management Information Systems* 18(1):185-214.

GRANDORI A & SODA G. 2006. A relationship approach to organisational design. *Industry and Innovation*. 13:151−172.

HALAWI L, ARONSON J & MCCARTHY R. 2005. Resource-based view of knowledge management for competitive advantage. *The Electronic Journal of Knowledge Management* 3(2):75-86.

KACMAR K, ANDREWS M, VAN ROOY D, STEILBERG R & CERRONE S. 2006. Sure everyone can be replaced but at what cost? Turnover as a predictor of unit-level performance. *Academy of Management Journal* 49:133–144.

KIM T, LEE J, CHUN J & BENBASAT I. 2014. Understanding the effect of knowledge management strategies on knowledge performance: a contingency perspective. *Information and Management* 51:398-416.

KOK A. 2007. Intellectual capital management as part of knowledge management initiatives at institutions of higher learning. *The Electronic Journal of Knowledge Management* 5(2):181–192.

KOSILOV A. 2010. Improving organisation performance with a knowledge management system. Trieste, Italy: International Atomic Energy Agency School of Nuclear Knowledge Management. (23–27 Aug).

KRUGER C. 2009. Knowledge management maturity from a strategic/managerial perspective. Pretoria: University of Pretoria. (PhD thesis in Information Technology).

KRUGER C & JOHNSON R. 2013. Knowledge management according to organisational size: a South African perspective. *SA Journal of Information Management* 15(1):1-11.

LESSER E. 2009. The maturing workforce-managing the crisis before it hits. [Internet: http://www.astd.org/LC/2006/; downloaded on 2009-10-27.]

MAHARAJ B & RAMBALLI K. 1998**.** Local economic development strategies in an emerging democracy: the case of Durban in South Africa. *Urban Studies* 35(1):131-148

MACGREGOR K. 2008. South Africa: challenges of equity, ageing expansion. *University World News*. Global edition, 14 December (Issue 57). [Internet: http://www.universityworldnews.com/article.php?story=20081214092139847; downloaded on 2012-06-27.]

MASSEY A & MONTOYA-WEISS M. 2006. Unravelling the temporal fabric of knowledge conversion: a model of media selection. *MIS Quarterly* 30:99–114.

MEIHAMI B & MEIHAMI H. 2014. Knowledge management a way to gain a competitive advantage in firms (evidence of manufacturing companies). *International Letters of Social and Humanistic Sciences* 3:80-91.

MITCHELL R, NICHOLAS S & BOYLE B. 2009. The role of openness to cognitive diversity and group processes in knowledge creation. *Small Group Research* 40:535-554.

MWILA N. 2013. Focus on organisational memory as an enabler and constrainer of knowledge management. *Journal of Knowledge Management Practice* 14(1). [Internet: http://www.tlainc.com/articl331; downloaded on 2017-03-18.]

NONAKA I, KONNO N & TOYAMA R. 2000. SECI, BA and leadership: a unified model of dynamic knowledge creation. *Long Range Planning* 33:29.

NYBERG A, MOLITERNO T, HALE D & LEPAK D. 2014. Resource-based perspectives on unit-level human capital: a review and integration. *Journal of Management* 40(1):316-346

SCHOENHERR T, GRIFFITH D & CHANDRA A. 2014. Knowledge management in supply chains: the role of explicit and tacit knowledge. *Journal of Business Logistic:* 2-35.

STEVENS R. 2010. Knowledge management in a multigenerational workforce: challenges and opportunities presented by older workers. *Indian Journal of Economics and Business* 9(1) [Internet: http://www.freepatentsonline.com/article/Indian-journal-economics-business/225073261; downloaded on 2017-02-10.]

SVEIBY K. 2001. A knowledge based theory of the firm to guide in strategy formulation. *Journal of Intellectual Capital* 2(4):344-350.

TOBIN P & MAGENUKA T. 2006. Knowledge management and JSE-listed construction sector companies. *South African Journal of Information Management* 8(4):99-114 [Internet: http://www.sajim.co.za/index.php/SAJIM/article/viewFile/236/230; downloaded on 2017-04-09.]

TOBIN P & VOLAVSEK P. 2006. Knowledge management measurement in South African organisations. *Mousaion* 24(1):96-118.

WAAL A. 2006. The characteristics of high performance organizations. In Neely A, Kennerley N & Walters A (eds.) Performance measurement and management: public and private. Cranfield, UK: Cranfield School of Management. pp. 203-210

WANG S, NOE R & WANG Z. 2014. Motivating knowledge sharing in knowledge management systems: a quasi-field experiment. *Journal of Management* 40(4):978-1009.

WONG K & ASPINWALL E. 2005. An empirical study of the important factors for knowledge management adoption in the SME sector. *Journal of Knowledge Management* 9(3):64-82.

YANG J. 2007. The impact of knowledge sharing on organisational learning and effectiveness. *Journal of Knowledge Management* 11(2):83-90.

ZHAO Y, LU Y & WANG X. 2013. Organizational unlearning and organizational relearning: a dynamic process of knowledge management. *Journal of Knowledge Management* 17(6):902-912. [Internet: https://doi.org/10.1108/JKM-06-2013-0242; downloaded on 2016-11-12.]