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Enablers of knowledge management: practical research-based in the construction industry

Enablers of knowledge management

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Abstract

Purpose – To effectively implement knowledge management, one prerequisite is to understand and implement the knowledge management enablers in the sense of optimal institutional efficiency. This paper aims to analyze and measure the significant enablers in overseeing knowledge management in the construction sector.

Design/methodology/approach – The mixed-method technique was used to achieve the objective of this study and involved the application of detailed questions to project engineers and project managers within leading construction engineering companies, provided by the Institution of Engineering and Technology Ghana. In total, 150 questionnaires were collected and analyzed using the Statistical Package for Social Sciences v. 26.

Findings – The study confirms that the knowledge management enablers such as employees knowledge, motivations, effective decisions and strategic planning are some of the important ways in which construction professionals can achieve different strategic goals in many processes and concluded that the progress of the next generation knowledge management strategy will be based on content sharing, decision-making and by promoting the free flow of ideas.

Originality/value – The study offers perspectives into knowledge management enablers and recommends key performance factors, championed by Ghanaian construction contractors for institutional knowledge capture.

Keywords Knowledge management, Tacit knowledge, Knowledge sharing, Construction knowledge

Paper type Research paper

1. Introduction

Knowledge is used as a critical benefit for industries and (Park *et al.*, 2013) described this as a mechanism for converting data into usable knowledge. This requires the development discovery, organization, implementation, exchange and extraction of knowledge (Yi and Yang, 2014). Researchers have often emphasized the importance of organizations developing the necessary competencies to deliver innovative products. Farooq (2018a) also reported that organizations were unable to develop enhanced methods given the lack of agreement about how to measure knowledge management.



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While the construction industry is a strong knowledge-based industry, it is highly dependent on the knowledge of the numerous practitioners in a project team, making knowledge management important. Companies, especially construction firms, concentrate on other initiatives to stay competitive such as improving the prospects of current projects and promoting progressive innovation (Lin, 2014), with a focus on project-cycle management and technical strategies. It is critical to handle all of this knowledge, from both organized and semi-structured records, to discover new ideas, be more efficient and avoid repeating mistakes from the past. As a result, knowledge management can be viewed as a major concern for improving construction project efficiency and it is also of critical importance to the construction sector due to the commitment to the use and integration of knowledge through individual, institutional, process and industry constraints. Information Management enablers may also produce results such as improved operating efficiency and quality enhancement, however, Ren *et al.* (2013) found that most contractors suffer from inconsistencies, the occurrence of defects and the neglect of knowledge acquired.

Construction Knowledge is a combination of relevant data, developed skills, professional knowledge and value that leads to creativity and virtuosity, making construction one of the primary drivers of economic growth in many parts of the world. According to (Kim, 2014), knowledge management is critical for increasing contractor productivity. The importance of Knowledge Management is being increasingly recognized and several research achievements have been made in the field (Gressgård and Hansen, 2014; Grubbauer, 2015; Farooq, 2018b).

Boamah (2019) and Engwall (2003), discovered that cultural and corporate contexts influence construction projects, necessitating different approaches for diverse and highly dependent activities in the various fields of the industry. The Ghanaian engineering industry is currently faced with uncertainties that threaten its future survival and the country's overall economy. The preceding study's dynamic and changing structure allows us to accumulate, establish the foundation for research and forecast trends of empirical and feasible change over the long term. Although knowledge management strategies are important for a company's efficiency and productivity, research into construction knowledge management applications has been conducted primarily in prominent countries such as the UK, USA and China. Given the value of Ghana's construction economy, research in the sector is a worthy pursuit.

Construction errors are common, resulting in consumer dissatisfaction decreased productivity and a general loss of trust in the industry, necessitating the development of strategies for reducing project errors. Even though project errors are a problem in management, (Lin *et al.*, 2011) proposed frameworks such as knowledge management enablers and full performance assessment to help handle them. According to Supapawawisit *et al.* (2018), instant knowledge is best obtained by creating an environment that handles knowledge effectively, rendering knowledge management enablers an important source of sustainable competitive advantage and outstanding performance in the international economy.

The focus of this study is to identify and measure the essential enablers of knowledge management in Ghana's construction industry. The following formulated aim was used to accomplish the goal: to determine how professionals in the construction industry perceive knowledge management enablers and to assess the effects of knowledge management enabling activities in Ghanaian construction firms.

Identifying the enablers of persuasive knowledge management necessitates an awareness of the key movers, which can be found through examining the requirements, methods and issues of successful knowledge management frameworks. The study's results

will be used by businesses to improve their knowledge management systems and to develop recommendations for knowledge management promotion.

Enablers of
knowledge
management

2. Literature review

2.1 Knowledge management

[Albers and Brewer \(2003\)](#) define knowledge management as the process of generating, processing, extracting, converting and modifying information, which has become a significant strategy for improving organizations' competitive advantage; however, [Choe and Choi \(2015\)](#) state that knowledge management theories differ and may vary depending on the area in which the subject is discussed.

The most significant phenomenon arising in modern management literature is the concept of knowledge management. Knowledge is one of the most significant vital assets in this diverse environment and its management is becoming increasingly important. According to [Zhao et al., \(2018\)](#), knowledge management creates, distributes and effectively and efficiently uses the information to provide competitive value to industries. As applied, the above definitions will be the primary organizational strategy.

AQ: 3 According to [Bashir and Farooq \(2018a\)](#), knowledge management is a series of activities developed to strengthen and enhance preparation, sharing and decision-making within organizations to manage effective growth. Knowledge management activities are an essential objective in implementing complex knowledge creation and sharing in organizations ([Weinreich and Groher, 2016](#)). These activities would significantly improve the organization's overall capacity by recognizing and integrating employees' expertise and knowledge within the organizational framework. Knowledge management activities, in contrast to existing management strategies, regard importance in the development as the driving force behind ideas at the heart of competition in the knowledge environment ([Wu, 2016](#)).

Apart from the dimensions suggested by [Gold et al. \(2001\)](#), [Farooq \(2018b\)](#) went on to suggest and expand knowledge management to other dimensions, namely, knowledge transfer and knowledge reuse. [Wang \(2018\)](#), also insisted that knowledge-based growth is highly dependent on knowledge sharing within and across institutions. [Rundquist \(2014\)](#), confirms that, when policies and procedures are communicated, the possibility for a collision between various knowledge sources is generated. This can be used to lay the groundwork for the generation of new knowledge.

To ensure the survival of project engineers and project managers in this area, frameworks comprised primarily of knowledge management enablers must be critically examined. Knowledge management enablers have a goal to enable firms to increase the efficiency of their operations by providing the necessary services, while knowledge processes represent simpler knowledge activities. This research, on the other hand, focuses primarily on knowledge management enablers in the construction field.

2.2 Knowledge management enablers

According to [Denford \(2013\)](#), this is widely accepted as the key to long-term organizational survival, competitiveness and competitive advantage, but it can also be said that organizations can create complex strategies by efficiently managing their knowledge through the implementation of relevant knowledge management enablers. Several important contributors to implementation have been identified by various researchers and academicians, including ([Shokri-Ghasabeh and Nicholas, 2014](#); [Nakano et al., 2013](#)).

Knowledge management enablers such as motivation, which ([Yang, 2010](#)) concluded from his study that if employees are sufficiently motivated, they tend to improve

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productivity and provide a competitive advantage to the organization. While [Ofori-Kuragu et al. \(2016\)](#) agreed with motivation as an enabler, they argued about the differences between implementation and maintenance of the enabler, citing financial resources and management's inability to comply with them.

Organizational cultural behavior, education and training, team building, knowledge integration, problem-solving habits and resources are some enablers identified by ([Huang and Mas-Tur, 2016](#); [Little and Deokar, 2016](#); [Smolka et al., 2016](#)) and explained that, when applied, these will; have a positive effect on all organizations. According to [Wray \(2017\)](#), emerging fields such as intellectual capacity building and growth should be built by construction managers. He also concluded that if leaders set the necessary criteria for knowledge management enablers and see them as a major component in the creation and implementation stages, construction workers would achieve high performance across a wide range of project sites.

Enablers, according to [Hojabri et al. \(2014\)](#), are organizational cultural behavior, infrastructure, knowledge sharing, training and education and system and operation evaluation. [Farooq \(2018b\)](#) highlighted in his research that one of the most challenging problems facing many knowledge management organizations is knowledge sharing, as most people prefer to gather knowledge from the rest of their organization. Knowledge-sharing activities such as corporate processes are also facilitated by knowledge-centered structures, according to [Pudjuarti and Priagung \(2020\)](#). [Pudjuarti and Priagung \(2020\)](#), went ahead to state that, organizational culture and incentives are key success enablers that encourage and motivate workers to share ideas.

The presentation in this paper supports the suggestion of ([Sorensen and Stanton, 2016](#); [Wray, 2017](#); [Tseng and Lee, 2014](#)) that knowledge management enablers be improved to include global companies. Despite the economic complexities of the construction process and the numerous obstacles it presents, knowledge management enablers are more appropriate analytically and accurately. It is also possible to conclude that knowledge management enablers assist businesses in raising awareness and encouraging the creation and sharing of new information.

According to [Farooq and Vij \(2018\)](#), the primary aim of incorporating knowledge management as a technique is to enhance knowledge creation and distribution in an organization and it begins with identifying a company's knowledge assets that are needed to achieve organizational goals. However, [Zhu et al. \(2014\)](#) argue that effectively managing knowledge is a challenge, not just because of the complexity of any organization's knowledge system requiring several fields but also because knowledge is distributed across the company. Furthermore, [Pee and Kankanhalli \(2016\)](#) found that when resources, leadership, compensation, motivational theories and brainstorming are introduced as key enablers for knowledge management, they increased company productivity.

These findings demonstrate that knowledge management structures can be supported by a variety of enablers, which can lead to improvements in performance, literature, program scheduling, project execution and social impacts.

2.3 Knowledge management in construction

Research studies, especially in, developing countries have explored and implemented knowledge management expectations in the construction industry. While the construction industry is recognized as a knowledge center, there have been issues with the comprehensive capture and management of project knowledge for growth and competitiveness and Ghana is no exception. [Tengan et al. \(2014\)](#) concluded that to effectively

incorporate knowledge management, the organizational framework of construction policies must be considered.

By comprehensively identifying and integrating the resources and expertise of project team members, knowledge management will greatly improve the institution's overall resolution capacity. Geisler and Wickramasinghe (2015) share their dissatisfaction with the industry's challenges, which include a lack of knowledge management systems, a lack of managerial guidance and a misperception of knowledge management practices. According to Frank *et al.* (2017), the lack of expertise and managerial assistance is a major impediment to the introduction of knowledge management as part of construction engineering practice in Ghana.

As a result, it is critical to incorporate professional experience and lessons learned from previous projects to eliminate poor approaches that contribute to project failure. Knowledge management enablers and knowledge storage can, thus, promote knowledge management implementation in the construction industry. As a result, it is recommended that, per management strategies, knowledge management that seeks to create value through increasing competition be promoted.

3. Methodology

3.1 Research design

The qualitative and quantitative concepts are considered to be fundamental theories and were used to accomplishing the purpose of this study. These methods included the use of literature reviews, as well as close-ended questions for construction engineering companies, provided by the Institution of Engineering and Technology Ghana. The motivation for using this is to validate the conclusions of the literature review and to enhance the scope of the results. This was achieved by analyzing the familiarity of the professionals with the phenomenon being studied.

This led to the achievement of 17 enabling variables, some of which were not associated with established literature. This shows, in particular, that those enablers which do not align with the established literature may be specific to the standards of construction in Ghana. The second phase identified quantitative technology involving the acquisition of primary data (questionnaire) based on the perspectives of construction engineering companies in Ghana to improve their projects. These entities represent the community of Ghanaian construction engineering firms engaged in construction projects within the past five years. To analyze knowledge management enablers, close-ended questions were used in the questionnaire to assess the perspectives of respondents on the degree of intensity using the Likert scale ranging from: I – not significant, II – less significant, III – significant, IV – very significant, V – most significant.

3.2 Sampling and procedure

The approach for this study was compiled from the database of the Institution of Engineering and Technology Ghana (IET-GH). Their databases contain information on 125 engineering firms, with 80 of them involved in active projects in the past five years. In total, 50 companies were chosen at random and contacted to participate in the study. The companies chosen at random fulfilled the preceding criteria. According to Kim (2014), companies need to have between five and 250 employees.

This research involved the application of detailed questions to project engineers and project managers within the said construction companies. A total of 200 questionnaires were sent to 50 companies, registered with the IET-GH. Confirmation calls were made to

organizations to ensure that the right person within the companies will complete the questionnaire by checking the e-mail address.

Purposive sampling was primarily used in locating the project engineers and project managers. This method of sampling for purposive continued until 150 questionnaires were collected and analyzed using the Statistical Package for Social Sciences (SPSS) v. 26.

3.3 Measures

The questionnaire was developed using items identified to be knowledge management enablers and respondents were asked to rate on a five-point Likert scale (1 – not significant to 5 – most significant). The instruments used included a total of 17 knowledge management enablers and a pre-survey was performed to ensure that there were no misperceptions about the questionnaire.

Respondents were asked to illustrate their rate of understanding in each of the 17 items that measure different aspects of knowledge management such as knowledge integration, brainstorming, infrastructure, problem-solving habit, team building, effective decision, motivation. The other items were developed after empirical contributions and extensive interviews with construction professionals during the post-questionnaire development stage.

3.3 Data analysis

The data collected for this study were analyzed using statistical tools and SPSS version 26 to provide empirical support for research concepts and inquiries. Basic data input and processing methods were also used.

The response analysis included an examination of the response rate and data attributes such as respondents' perceptions. Cronbach-alpha statistics were used to assess the measurement of knowledge management enablers' accuracy, reliability and validity. Descriptive analysis such as mean, standard deviation and ranks was also used to identify and rank respondent's perception of knowledge management enablers. To determine whether knowledge management enablers have a positive impact on the construction industry, the regression analysis technique was used.

4. Results and discussion

Cronbach-alpha statistics have been used to evaluate the measurement of knowledge management enablers' accuracy and validity. The reliability of the research elements is central to the assessment of the effectiveness and compatibility of the instrument. As a result, reliability is given considerable consideration during the evaluation cycle in well-organized and careful studies (Creswell and Creswell, 2017).

As shown in Table 1, each measurement was comfortably within the recommended 0.8 and 0.5 thresholds considered to be sufficient to validate an acceptable level of research reliability (Churchill, 1991). In the current situation, Table 1 also shows the degree of consensus between the respondents and each knowledge management enabler. This demonstrates that the data gathered is accurate. Furthermore, as shown in Table 1, all 17 knowledge management enablers are recognized as essential items, implying that all data collected is accurate and capable of being analyzed.

Pallant and Manual (2007) indicated that the alpha significant at least 0.7 is a strong internal accuracy and no items are declined under the above criteria. The findings showed that organizational culture behavior with a mean of 4.15 was the key knowledge management enabler considered by the respondents. The table above also shows that all the variables in the analysis were highly satisfied concerning the level of internal coherence,

T1

Variables	Mean	S.D	Cronbach-alpha	Enablers of knowledge management
Employees knowledge	4.02	0.858	0.776	
Effective decision	4.03	0.915	0.781	
Motivation	3.96	0.810	0.779	
Organizational culture behavior	4.15	2.547	0.841	
Knowledge integration	3.84	1.028	0.770	
Infrastructure	3.94	0.861	0.776	
Information sharing	3.91	0.861	0.776	
Brain storming	3.86	1.085	0.777	
Strategic planning	3.66	1.015	0.772	
Resources	3.68	0.992	0.776	
Human resource management	3.58	1.082	0.792	
Problem-solving habit	3.56	1.083	0.792	
New techniques	3.51	0.849	0.792	
Compensation	3.33	1.027	0.784	
Education and training	1.00	3.3667	0.781	
Team building	3.53	1.027	0.790	
Business target	3.30	0.994	0.776	

Source: Data analysis

Table 1.
Reliability test result

which means that the necessary criteria for the reliability of the social science measurement instrument have been met.

T2

Table 2 describes the distribution of data points, with a focus on mean and standard deviations for each variable being developed. The questionnaires were practically accepted by the majority of respondents for knowledge management enablers and with a Likert scale of 1–5, with a mean of 3–4. To classify knowledge management enablers, respondents were asked to rate 17 knowledge management enablers.

Table 2 shows that managers are firmly in favor of knowledge management enablers and that employees have a deep mutual interest in managerial decisions. The findings are a good indication and are consistent with (Twum-Darko and Harker, 2015) research. When developing integrated project services, this study shows that knowledge management

Enablers of K.M	Mean	S.D	Rank	Table 2. Respondents' perceptions of knowledge management enablers
Employees knowledge	4.10	0.86	1st	
Effective decision	4.02	0.94	2nd	
Motivation	4.00	0.84	3rd	
Organizational culture behavior	4.00	3.01	4th	
Knowledge integration	3.98	0.96	5th	
Infrastructure	3.98	0.87	6th	
Information sharing	3.97	0.88	7th	
Brainstorming	3.73	1.09	8th	
Strategic planning	3.69	0.99	9th	
Human resource management	3.66	1.06	10th	
Problem-solving habit	3.65	1.06	11th	
New techniques	3.42	0.91	12th	
Compensation	3.42	1.02	13th	
Education and training	3.35	0.99	14th	
Team building	3.33	1.03	15th	
Business target	3.23	0.33	16th	

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enablers will help increase productivity and competitive advantage. Employees play a vital role in every organization and are stakeholders, therefore their expertise should be carefully considered to ensure that the company performs at its best (Wang, 201). The study's findings, especially employees' knowledge, which had a mean of 4.10 and a standard deviation of 0.86, can be correlated to (Kianto *et al.*, 2016), who found that employees' expertise or knowledge is crucial not only to individual performance but also to the efficiency of the organization.

With a mean of 4.00 and a standard deviation of 3.01, organizational culture activity was ranked 4th, followed by knowledge integration, infrastructure and information sharing, which had mean values of 3.98, 3.98, 3.97 and standard deviations of 0.96, 0.87 and 0.88, respectively. Trivella and Dimitrios (2015) support our findings by noting that culture influences people's perceptions and reactions to various situations and also a positive and effective organizational culture can encourage and facilitate knowledge management in every organization. Trust, emotional stability and beliefs, according to (Zander *et al.*, 2016), must promote mutual knowledge and interaction between employees in any organization. Our results also reveal that the achievement of developing and promoting such knowledge management systems is the creation of an enabling culture. As a result, organizational culture is an essential component in a company's ability to create value through the use of data. Table 2 shows respondent perceptions for brainstorming, strategic planning, human resources management, problem-solving habit, new technique, compensation, education and training, team building and business targets.

The regression analysis technique was implemented in analyzing whether knowledge management enablers have a beneficial effect on the construction industry. The adjusted R^2 for the model (Table 3) achieved 0.933 and this can be interpreted as 93% of knowledge management enablers have a significant influence in the construction industry. Also, Table 4 showed an important role with, $F(99.967), p < 0.000$.

However, a comprehensive analysis showed that the cumulative influence of knowledge management enablers is positive in the construction industry.

The regression analysis was used to analyze the main components of knowledge management supported by knowledge management enablers in the construction sector.

Almost all models were statistically valid and had positive t -values, as shown in Table 5, except for organizational cultural behavior, knowledge integration, infrastructure and problem-solving habit, which had negative t -values of -0.427 , -1.915 , -0.082 and -0.884 , respectively. The results of the regression model revealed that the model was significant as a dependent variable, with an F-ratio of 99.96 in the case of management support.

Employees Knowledge, with a t -values of 1.778, confirms that employee knowledge has a significant advantage in the construction sector, especially in developing countries where resources are limited. Boamah (2019) agrees with these findings by establishing in his research that the development of professional network facilities adds to employee learning processes and, as a result, in employee performance. These results matched those of

R	R^2	Adjusted R^2	Std. error of the estimate
0.971 ^a	0.943	0.933	0.214

Notes: ^aPredictors: (constant), strategic planning, new techniques, team building, organizational culture behavior, motivation, sharing of knowledge, education_and_training, human resource management, employees knowledge, compensation, effective decision, brainstorming, knowledge resources, information sharing, resources, knowledge integration, business target, infrastructure, problem-solving habit

Table 3.
Summary

Enablers of knowledge management

(Tangaraja *et al.*, 2015), who discovered that the value of employees' expertise in each sector is extremely significant. Organizations according to Farooq (2018a), must be cautious to set up knowledge-based growth and development systems. Boamah (2019) also confirms the importance of decision-making in the construction industry, emphasizing how it affects people's attitudes and productivity. This viewpoint incorporates our findings and we conclude that decision-making is an enabler, with a *t*-values of 0.796, making it one of the most important factors in the advancement of knowledge management policies.

Furthermore, effective staffing (human factor), innovation and organizational design often result in better situational decision-making. The effectiveness with which all of these factors are implemented determines the effectiveness of the decisions made (Farooq, 2017). The relationship between management practices and organizational advancement, according to (Walker *et al.*, 2017), is that management support or perspective has a significant influence on institutional development. Strategic planning, according to (Nakano *et al.*, 2013), makes extensive use of organizational expertise and aids in the identification of operating frameworks according to job scope. They went on to say that successful strategic planning results in high-quality goods and services with fewer limitations or defects.

Although organizational culture, knowledge integration and infrastructure have an influence on every dimension of a company, according to Robbins (2001), its positive impact

Model	Sum of squares	Df	Mean square	F	Sig.
Regression	95.987	21	4.571	99.967	0.000 ^p
Residual	5.853	128	0.046		
Total	101.840	149			

Notes: ^aDependent variable: management support. ^bPredictors: (constant), strategic planning, new techniques, team building, organizational culture behavior, motivation, sharing of knowledge, education_and_training, human resource management, employees knowledge, compensation, effective decision, brainstorming, knowledge resources, information sharing, resources, knowledge integration, business target, infrastructure, problem-solving habit

Table 4. ANOVA

Model	Unstandardized coefficients		Standardized coefficients		Sig
	B	Std. error	Beta	<i>t</i>	
Employees knowledge	0.153	0.086	0.159	1.778	0.078
Effective decision	0.028	0.035	0.031	0.796	0.428
Motivation	0.808	0.035	0.792	22.793	0.000
Organizational culture behavior	-0.003	0.007	-0.009	-0.427	0.670
Knowledge integration	-0.106	0.055	-0.132	-1.915	0.058
Infrastructure	-0.006	0.078	-0.007	-0.082	0.935
Information sharing	0.165	0.053	0.172	3.136	0.002
Brain storming	0.040	0.034	0.052	1.181	0.240
Strategic planning	0.157	0.064	0.193	2.447	0.016
Human resource management	0.122	0.081	0.160	1.510	0.134
Problem-solving habit	-0.076	0.086	-0.100	-0.884	0.379
New techniques	0.184	0.038	0.189	4.786	0.000
Compensation	0.073	0.031	0.091	2.348	0.020
Education and training	0.039	0.026	0.047	1.466	0.145
Team building	0.015	0.024	0.019	0.632	0.528
Business target	0.035	0.059	0.042	0.586	0.559

Table 5. Hypothesis results

can be seen in individual behavior, organization, motivation, work satisfaction, innovation and growth, but if the above factors are ignored, any organization will suffer a negative impact. Organizational culture behavior, knowledge generation and infrastructure were also key determinants for the failure of knowledge management enablers by (McDermott and O'Dell, 2001), which corresponds to the t -values of -0.427 , -1.915 and -0.082 in Table 5. Organizations need a formal knowledge management program to achieve profitability, according to (Boateng and Agyemang, 2015). This study demonstrates that coordinating these programs with organizational culture is critical and that culture affects people's perceptions and reactions in various situations. According to these findings, a productive and effective organizational culture will encourage and foster knowledge management. Credibility, emotional stability and values, according to Lin (2014), should promote mutual knowledge and interaction among employees in any organization. They also noted that the achievement of its success is the creation of an enabling culture in the design of such knowledge management systems.

According to Dessler (2015), a shared culture allows for successful knowledge management strategies, as well as people freely sharing their skills and assisting in knowledge integration. The framework for knowledge management, according to (Brix, 2017), is the basis for knowledge management activities and effective management of information requirements, which is sufficient for organizational infrastructure. According to (Walker *et al.*, 2017), the structuring of knowledge is important due to its complexity, which makes it difficult for the company to manage.

The findings also indicate, good human resource management in terms of delivering the right benefits, opportunities or incentives for people to develop, distribute and apply knowledge is one of the main facilities and when applied, efficiency would be effective and productive. The findings of (Kao and Wu, 2016), confirm that sharing of information is one of the key ways in which scholars can achieve different strategic goals in many processes and that the next generation's success will be focused on content sharing and decision-making with the aid of knowledge management strategy. Knowledge management strengthens organizational transitions by fostering collaboration allowing a company to maintain a diverse knowledge base (Vij and Farooq, 2014). Knowledge management enablers, according to (Huarng and Mas-Tur, 2016), may help different disciplinary team members identify members with special expertise to help analyze complex problems and find appropriate solutions. We can conclude from the analysis and research that team building, which leads to innovative strategies, is an essential factor in achieving strategic leadership over the organization's competitors.

The hypothesis' findings also point to the relevance of training and educating employees about new technologies and techniques, as this is critical for any organization's success, particularly when employee compensation policies are taken into account. The results are also supported by a study by (Nawaz *et al.*, 2014), which found that a compensation scheme would enable more workers to engage in the implementation of knowledge management initiatives and suggested that organizations set up compensation schemes to increase production, distribution and reactivity.

Furthermore, Tengan *et al.* (2014) agree with these findings that employees in the construction industry must understand and apply Knowledge Management enablers, as complete cooperation among members in managing knowledge will have a significant impact on policy development, innovative ideas and the implementation of emerging technology. Finally, this study concludes that construction firms foster creativity and innovation by allowing their employees to freely exchange ideas.

5. Discussions and conclusion

Every organization must be able to create an effective knowledge management mechanism. Subjective interpretation of knowledge from a conceptual perspective provides a more objective framework for individual and collective experiences in terms of performance outcomes. Properly coping with these enablers will help to ensure the effectiveness of knowledge management and the realization of its benefits. Knowledge management enablers are an emerging concept especially in developing countries such as Ghana and are vital to an organization's survival in an international dynamic environment. This research aims to analyze and assess potential enablers of knowledge management implementation in the construction industry. Proper management and execution of these enablers will contribute to the expected benefits of being productive and practical.

Based on the findings, construction knowledge is described as a combination of actual information, structural abilities, skills and efficiency, which leads to innovation and technological mastery, transforming construction into a key driver of economic growth in many parts of the world.

Following extensive research and a review of site questionnaires, the study proposed 17 enablers that would serve as an enabling framework for effective knowledge management in construction, especially in Ghana. As a result, this paper addresses and establishes empirical knowledge management enablers in connection to current empirical studies. Also, this study contributes to identifying the understanding and importance of knowledge management enablers among the various professionals involved in the construction industry. The findings have theoretical and practical consequences.

Although the research field is primarily the Ghanaian construction sector, (Farooq, 2018a) establishes knowledge management context as a mechanism of knowledge sharing and organizational culture, which is consistent with this study and can benefit the sector. The learning culture of an organization fosters an atmosphere in which skills and abilities are created not only by individual employees but also by the commitment and motivation of organizational employees, as shown by the results. Bashir and Farooq (2019) established a framework for knowledge management that also serves as the basis for knowledge management activities and the effective management of information that are sufficient for organizational infrastructure, which is consistent with the findings of this study.

Implementing successful brainstorming and strategic planning is another important element, as demonstrated by respondents, as a knowledge management enabler in the construction industry and requires the creation of new roles and teams to carry out tasks related to expertise. According to the findings of (Uzelac *et al.*, 2016), the effective execution of our interpretations requires a participatory willingness among employees to tap into intellectual capital. According to the results, no funding, technology or technological innovation would be efficient if employees are not empowered to share knowledge; this is also consistent with the findings of a study conducted by (Soilen and Tontini, 2013).

In their research, Rusly *et al.* (2014) discovered that strategic orientation formulations, layout and techniques between companies are a critical component in knowledge management in institutions and this is supported by our findings that when new techniques and other elements are formulated, the construction sector, especially in Ghana, will see a massive shift. Farooq (2018b) also believes that new organizational techniques help in understanding the critical concerns of knowledge management that support and sustain a competitive position.

Many organizations operating in Ghana have been discovered to focus more on the assets or skills needed, rather than on quality and knowledge management; therefore, this

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study will serve as a benchmark and a valuable document to the Ghanaian construction sector.

5.1 Theoretical contribution

This research adds to the body of knowledge by discussing and improving scientific knowledge management capabilities using established construction evidential studies, especially in Ghana. This relationship is seen as predicated on the industry's unique expertise and the organizational capacity needed to achieve its success targets in the construction industry's innovation context, where a firm's assets and income are primarily derived from its knowledge and skills. The researchers in this study summarized the existing state of knowledge management enablers in the construction industry and added to it the current results.

This study contributes to the literature by defining the beneficial effects of knowledge management enablers on organization effectiveness, as well as providing an evidence-based view of knowledge management enablers and a situation perspective of knowledge by using respondents' perspectives on knowledge management enablers. This will also act as a model for future studies on scientific knowledge management.

As a result, this study provides evidence for the applicability of knowledge management enablers in the Ghanaian construction industry, with a focus on practicality.

5.2 Practical implication

The findings of this study have serious implications for construction managers and practitioners. The research findings give a unique insight to Ghanaian construction managers, demonstrating that knowledge management enablers increase effectiveness and performance, which is one of the most important growth factors.

This study's results not only confirm hypotheses and models in reality but also serve as a reference for academics and business professionals. To begin, supervisors should be aware of the various experts, including knowledge facilitator opinions and activities and their understanding of these perspectives would benefit the construction industry's efficiency. Second, organizations must adapt their approach over time to meet the needs of specialized domain experts, using modern methods. Finally, organizations must pay special attention to the enablers when forming strategies to improve and implement knowledge-based practices.

These findings are also significant for Ghanaian policymakers, given the construction industry's commitment to the country's economy. Among the most basic construction requirements, the government must demonstrate its willingness to develop new services that satisfy user expectations and needs. As a result, the analytical approach presented in this study offers policymakers a basic framework.

5.3 Managerial implication

The findings of this study have important implications for construction managers and practitioners. The findings provide a unique perspective to Ghanaian construction managers, showing that knowledge management enablers increase effectiveness and performance, which is one of the most important growth factors. To maximize profit, most construction companies, particularly in Ghana, disregard basic codes, making project engineers and project managers execute each project differently. This study examines information management enablers as the main source of improving and enhancing standards in Ghana's construction industry.

This study's findings not only validate theories and concepts in practice but also effectively contribute to researchers and industry practitioners. Managers must be aware of

the various sources, including knowledge facilitator views and activities and their awareness of these insights will help the construction industry operate more efficiently. Second, managers and engineers must transform their strategy over time to meet the needs of specialized field professionals while adopting innovative tactics. Finally, managers must prioritize enablers when designing strategies to refine and implement knowledge-based practices.

It is possible to conclude that a lack of effective knowledge management enablers will lead to project failure, but, concentrating solely on knowledge management enablers, according to the results, is insufficient; rather, critical implementation of these enablers will result in sector high-quality work standards. Given the importance of the construction industry to the Ghanaian economy, these findings are also important for Ghanaian policymakers. One of the most basic construction criteria is for the government to demonstrate its commitment to introducing new services that meet user expectations and needs. As a result, the theoretical context presented in this study serves as a starting point for policymakers.

Employees in companies that operate under strict knowledge management enablers can perform their jobs and achieve success.

5.4 Limitations and future research

Despite the enormous impact of this study, it has some limitations that can encourage future studies. As data was gathered from construction companies in Ghana, the findings of this study cannot be extended authoritatively to other industry sectors or countries. As a result, this can take a national and international perspective while taking into consideration the wide range of factors influencing buildings all over the world, allowing for broad samples from diverse industries and countries to be examined. Amidst several other limitations, the paper implies that the study's outcomes contribute to a better understanding of knowledge management enabler implementation in Ghana and have realistic managerial implications for professionals by combining concept and application.

Future research should include direct access to the impact of framework efficiency and open innovation on organizational success. Future research could look at other yet-to-be-discovered enablers and create new construction industry classifications. More research is needed to establish best practices for each knowledge management enabler.

It will be interesting to recognize how knowledge management enablers develop in other specialized industry sectors in the future. Finally, future research should use a secondary approach to data analysis to reduce personality responsiveness.

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Further reading

Pudjiarti, E.S. and Priagung Hutomo, P.T. (2020), "The critical role of effective organizational learning to improve firm's innovation and performance in a market turbulence condition", *International Journal of Innovation Science*, Vol. 12 No. 3, pp. 237-254, available at: <https://doi.org/10.1108/IJIS-08-2019-0079>

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