

PROJECT KNOWLEDGE MANAGEMENT IN LOCAL GOVERNMENT ORGANISATIONS

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Purpose: The purpose of this paper is to identify the importance of project knowledge management in local government organisations in Poland.

Design/methodology/approach: The analysis carried out for this paper included a literature analysis, survey research and analysis of the research results. The hypotheses set for the research were verified using statistical methods on the basis of the collected data from a questionnaire survey addressed to randomly selected district offices and town halls in Poland.

Findings: Based on the literature review, the paper confirms the relevance of knowledge management and project knowledge management in the activities and development of organisations. Based on the results of the study, it can be concluded that local government organisations in Poland manage project knowledge because they are aware of its importance in effective project management.

Originality/value: Project knowledge management is not only important in companies, but also in local government organisations for effective project management. Collecting and documenting project knowledge and experiences from projects helps to reduce errors during subsequent projects.

Keywords: project knowledge management, project management, local government organisations.

Category of the paper: research paper.

1. Introduction

The rapid and effective use of knowledge is extremely important in the operations of today's organisations. Knowledge is not only one of the main resources of a company, but as Peter Drucker writes, it is the driving force behind the development of a company and a key factor of creativity in all areas of life (Grudzewski, Hajduk, 2005).

Knowledge is closely linked to the human factor, as people are the main carrier of the knowledge resource. The mere possession of knowledge by individual employees, does not condition the development of an organisation, proper knowledge management is necessary.

Knowledge management is equated with a certain process that contributes to the achievement of measurable results. From a process perspective, knowledge management is defined differently by many authors in the literature. W.R. Bukowitz and R.L. Williams indicate that "knowledge management is the process by which an organisation generates wealth from its intellectual or knowledge-based organisational assets (Bukowit, Williams, 1999). NASA, on the other hand, defines knowledge management as "providing the right knowledge, to the right people, at the right time, and helping to create, share and make decisions based on that knowledge in such a way as to achieve measurable impact". In a similar vein is K.M. Wiig, who defines knowledge management as "the systematic, explicit and deliberate creation, renewal and application of knowledge to maximise the effectiveness of the enterprise and achieve a return on its knowledge assets" (Wiig, 1993). J.P. Perez and P. Ordonez de Pablos define knowledge management as the process of producing or capturing knowledge, organising and delivering the value of accumulated knowledge, transferring knowledge, and establishing mechanisms for use, including reuse, by both individuals and groups of people in an organisation (Perez, Ordonez de Pablos, 2003).

Initial interest in knowledge management practices included knowledge creation, organisation, sharing and application (Jashapara, 2004). Later, research covered adjacent areas including, inter alia, project knowledge management (Wyrozębski, Pawlak, 2021). As A. Kozarkiewicz notes, knowledge management is an important element of project management, and the specificity of knowledge management in projects is shaped by their characteristics, primarily their temporality (Kozarkiewicz, 2012). Nowadays, organisations, including local government organisations, implement many projects. During the planning and implementation of projects, knowledge and experience should be accumulated and then used to avoid potential mistakes in subsequent projects.

The aim of this paper is to identify the importance of project knowledge management in local government organisations in Poland.

2. Project knowledge management

Knowledge is of key importance in the activities of organisations including the implementation of project projects. In the area of research, the understanding of the role of knowledge in project management has resulted in publications by many authors (Hanisch et al., 2009; Kasvi et al., 2003; Wyrozębski, 2014; Spalek, 2012). Each successive project implemented by an organisation contributes to the growth of knowledge and experience, which

should be collected and stored appropriately so that these knowledge resources do not dissipate with the end of the project and the dissolution of the project team.

The importance of knowledge and the need to use it effectively in organisations is therefore increasing (Grillitsch et al., 2007). Project team members learn from experience, especially if they repeat similar activities. Knowledge management enables them to reduce project planning and execution time, and the sharing of lessons learned leads to improvement in project management (Ireland, 2007).

Leading project management methodologies and standards (Project Management Institute (PMI), 2017; Office of Government Commerce (OGC), 2017; ISO 21502:2020; Sutherland, Schwaber, 2020) emphasise the importance of project knowledge management including gathering and documenting lessons learned, implementing process improvement. This applies to all organisations, including those whose business is not for profit.

Project management and the characteristics of projects place specific demands on project knowledge, i.e. knowledge related to the implementation of projects. In this context, it is important to acquire and store documents collected during project management, to share knowledge, experience and important information within the project team, to supplement project knowledge and to create conditions for knowledge transfer.

Knowledge management should therefore be seen as activities that strengthen the ability of local government organisations to achieve their objectives. In order for this to be possible, it must be remembered that knowledge management should not only be considered in terms of managing information as a basic component of knowledge, but also in terms of managing knowledge workers. The key to this kind of analysis seems to be the so-called process approach (Skica, 2011). According to this approach, knowledge management is the totality of processes that enable knowledge to be collected, disseminated and used to achieve organisational goals. In this context, three main stages of the knowledge management process can be distinguished:

- collection of knowledge,
- sharing knowledge,
- transforming knowledge into decisions.

The literature review carried out for this study shows that this topic is important and valid in today's world. Project knowledge management in companies has been the subject of research by many authors, whereas with regard to local government organisations, the topic has not yet been frequently addressed.

3. Test procedure

For the purpose of preparing the paper, a research mode was adopted in line with the methodological principles applicable in the management sciences. The research mode consists of the following stages: formulation of the research problem and research questions, formulation of research hypotheses, verification of hypotheses as a result of the research conducted, analysis of the collected empirical material and formulation of conclusions.

Efficient project knowledge management is related to the acquisition and storage of documents collected during project implementation. This provides a source of knowledge that can and should be used on subsequent projects to save time and avoid problems. Knowledge management is also, sharing knowledge, information and experience. When implementing multiple projects, local government organisations should manage project knowledge to improve future project planning and implementation. In this context, the question should be asked: do local government organisations in Poland manage project knowledge? i.e.:

- Do they collect and store project knowledge?
- Do they use the knowledge and experience from projects carried out in subsequent projects?
- Do project managers and project team members share knowledge and experience?
- Is the project experience documented during the project?
- Is there a correlation between the role of project management in a local government organisation and the project knowledge management process.

The research hypotheses in this study addressed issues related to project knowledge management in a local government organisation. The research hypotheses, to be verified by statistical tests, took the following form:

- H1. Local government organisations in Poland manage project knowledge to a considerable extent.
- H2. There is a statistically significant relationship between awareness of the importance and value of project management and the stages of the project knowledge management process.
- H3. There is a statistically significant relationship between the collection, documentation and use of project knowledge, with project managers' and project team members' attitudes to knowledge sharing.
- H4. There is a statistically significant relationship between awareness of the importance of knowledge in effective project management and project knowledge management.

In order to verify the above-mentioned research hypotheses, the following section of the paper analyses the data obtained from own studies conducted in local government organisations in Poland.

The studies yielded data from 200 local government organisations in Poland, i.e. 145 city councils and 55 poviats councils, which, with a significance level of $\alpha = 0.05$ and a permissible error of $e = 5\%$, constitutes a representative research sample.

The study was based on a survey questionnaire conducted in Poland at the local level in December 2019 and January 2020 among randomly selected Polish poviats and cities. In the study, data collection was based on the CAWI (Computer-Assisted Web Interview) method, which is a technique for collecting information in quantitative research by means of an electronic questionnaire to be filled in online. The survey questionnaire consisted of 8 statements rated on a 5-point Likert scale. The statements adapted from the questionnaire were based on the literature review and adapted to the specific activities of local government organisations. The study was conducted among local government officials.

4. Study results

4.1. Characteristics of the research sample

The statements in the questionnaire relate to the opinions and experiences of local government officials with regard to project knowledge management in these organisations.

The survey questionnaire was completed by representatives of such organisational units as: deputy mayors/deputy presidents (2.5% of respondents), head/deputy head (11.5% of respondents), director/department head/deputy director (17% of respondents), city/poviat secretaries (10% of respondents), specialist (30.5% of respondents), inspector (28.5% of respondents). Among the respondents, the largest number of people (29.5%) are office employees with seniority of more than 20 years. An equally large group of respondents are those with seniority of 16-20 years (26%), and with seniority of 11-15 years (25%). Respondents with seniority of 6-10 years accounted for 11%, with seniority of 4-5 years (3%), and with seniority of up to 3 years (5.5%). By far the largest group of people who completed the survey were those with a university degree (97%). Among them, it is possible to identify those with a bachelor's or engineering degree (6%), those with a second-degree university education (89%), and those with a third-degree education (2%). Respondents with secondary education accounted for 3%.

The questionnaire adopted a verbal description of the answers given: 1 – definitely no/never, 2 – rather no/rarely, 3 – neither yes nor no/sometimes, 4 – rather yes/frequently, 5 – definitely yes/always.

As there were no significant differences in the responses obtained from city and poviat offices, the analysis of the results obtained was carried out for both groups together.

4.2. Verification of research hypotheses

4.2.1. Hypothesis 1: Local government organisations in Poland manage project knowledge to a significant extent

According to the adopted process model, project knowledge management is the totality of processes that enable the collection, dissemination and use of knowledge for effective project management. In this context, three main stages of the project knowledge management process can be distinguished, i.e.: gathering project knowledge, sharing project knowledge, transforming knowledge into decisions.

With regard to the results obtained in terms of collecting and storing knowledge and experience from completed projects, the largest number (almost 42%) of local government organisations often collect project knowledge, while 37% of organisations always do so. 14.5% of local government organisations collect knowledge sometimes. 1.5% of local government organisations never collect project knowledge and rarely 5% of organisations do. The details are shown in Figure 1.

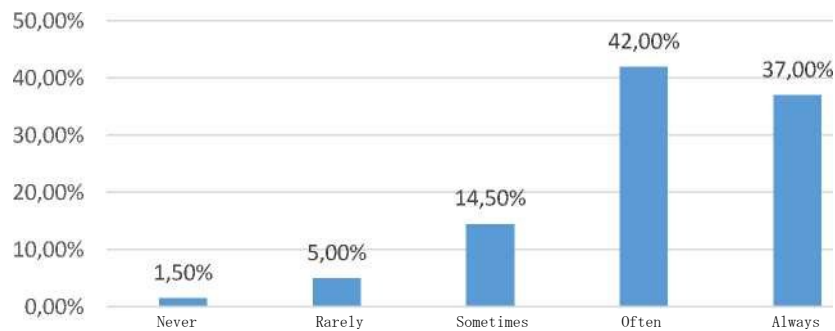


Figure 1. Frequency of knowledge gathering from ongoing projects in surveyed local government organisations.

Source: own work.

Project experience that is gained during project implementation is often documented; such a response was given by as many as 42% of the organisations and in 26% of the organisations this experience is always documented. Only in 3% of the organisations the project experience is never documented and in 10% it is rarely documented. The details are shown in Figure 2.

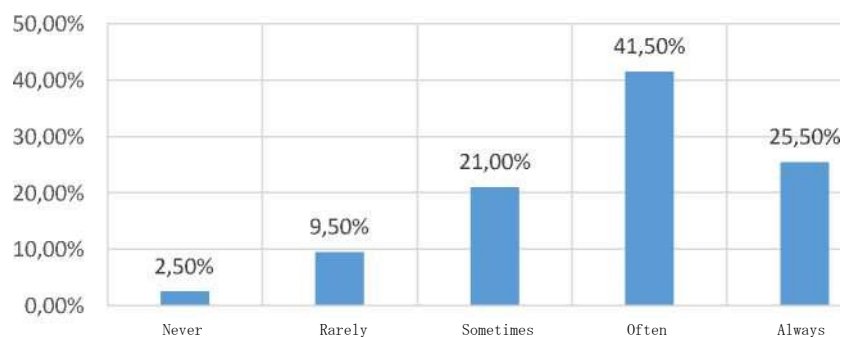


Figure 2. Frequency of documenting experience gained during project implementation in surveyed local government organisations.

Source: own work.

Sharing project knowledge, is about disseminating knowledge and making it accessible to those involved. In project management, it is important that the transfer of knowledge takes place between the participants in the process, so that the intellectual capital of each actor can be increased.

The research carried out on project knowledge sharing in local government organisations showed that both project managers and project team members in the vast majority of organisations are willing to share their knowledge and experience (Figure 3, Figure 4).

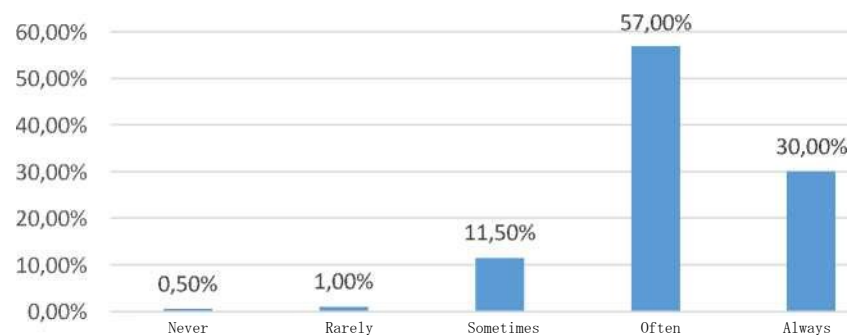


Figure 3. Frequency of sharing project knowledge and experience gained by project managers in surveyed local government organisations.

Source: own work.

It is worth noting that both project managers and project team members in most offices are willing to share knowledge and experience gained during project implementation. Such a practice is not found in about 2% of the surveyed offices, and in more than 10% of the offices sharing knowledge and experience is not a generally accepted practice and this is done selectively.

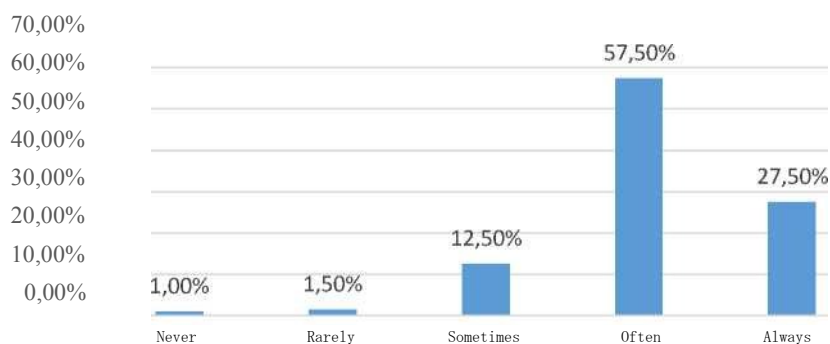


Figure 4. Frequency of sharing project knowledge and experience gained by project team members in surveyed local government organisations.

Source: own work.

The final stage of the process view of project knowledge management is knowledge utilisation. The success of this stage is highly dependent on the earlier stages of knowledge gathering, documentation and sharing.

In local government organisations, this stage of project knowledge management is also highly rated by respondents. The research carried out showed that in the vast majority of city and poviát offices (89%) the knowledge and experience gained from completed projects is used.

Only in two offices this practice is not applied, and in 19 offices (9.5%) project knowledge and experiences are sometimes used (Figure 5).

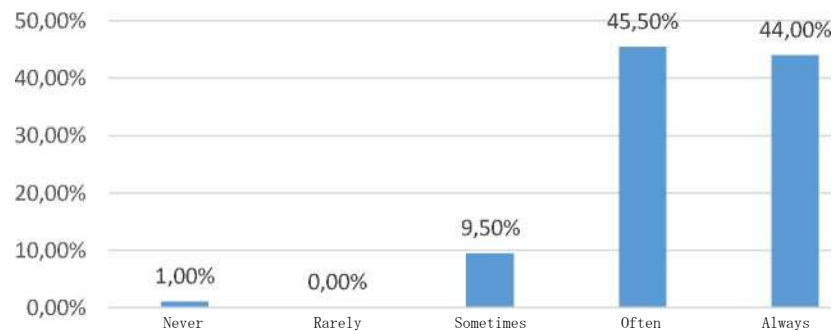


Figure 5. Frequency of use of knowledge and experience from follow-up projects in surveyed local government organisations.

Source: own work.

The results of the research carried out show that in local government organisations in Poland knowledge is accumulated and used in subsequent projects. There is also knowledge transfer especially between individual project team members.

Table 1.

Parameters of the distribution of local government officials' assessments of project knowledge management in these organisations

Process steps		Average	Standard deviation	Median
Gathering project knowledge	Knowledge and experience from completed projects is collected and stored	4.08	0.92	4
	During the project experience is documented	3.78	1.01	4
Sharing project knowledge	Project managers are keen to share their knowledge and experience	4.15	0.69	4
	Project team, members are keen to share knowledge and experience gained during projects	4.09	0.74	4
Use of project knowledge	Knowledge and experience from completed projects is used in subsequent projects	4.32	0.73	4
	The office has a system in place to support project knowledge management	2.73	1.23	3

Source: own work.

Based on the research results presented, it can be concluded that hypothesis one has been positively verified. The vast majority of surveyed local government organisations in Poland manage project knowledge (Figure 1-5). This is also confirmed by the parameters of the distribution of local government officials' assessments of project knowledge management in these organisations. The median for individual stages of the project knowledge management process is 4, with mean scores ranging from 3.78 to 4.32 and standard deviation from 0.73 to 1 (Table1).

However, many local government organisations lack a system to support project knowledge management (Table 1). For today, this form of collecting and distributing project knowledge seems sufficient, as evidenced by the completed projects in these local government

organisations. However, looking at the long term, from the perspective of the development of such an organisation, the formalisation of the project knowledge management process should be considered.

4.2.2. Hypothesis 2: There is a statistically significant relationship between awareness of the importance and value of project management and the stages of the project knowledge management process

Hypothesis two on the relationship between awareness of the importance and value of project management and the stages of the project knowledge management process was verified using the rho-Spearman correlation testing method (Table 2).

The rho-Spearman correlation coefficient can take values in the range $\{-1,1\}$. A positive sign at the value of the coefficient indicates that an increase in the value of one variable defines an increase in the value of the other variable, while a negative sign at the value of the correlation coefficient means that an increase in the value of one variable defines a decrease in the value of the other variable. The strength of the relationship between the variables is expressed by the absolute value of the correlation coefficient, with a value of 0 indicating no relationship and a value of 1 being a perfect correlation. In this study, a significance level of 0.05 was adopted. If the significance level p is less than 0.05, the relationship between the variables should be considered significant.

All stages of the project knowledge management process are related to awareness of the importance and value of project management in local government organisations. All relationships tested (moderate to strong) proved statistically significant, so the hypothesis was tested positively.

Table 2.

Results of the rho-Spearman correlation test for hypothesis 2

	There is a general awareness in the office of the importance and value of project management	
	R	p
There is an awareness in the office of the importance of knowledge in effective project management	0.70	4.10E-31
Knowledge and experience from completed projects is collected and stored.	0.59	3.06E-20
Knowledge and experience from completed projects is used in subsequent projects	0.52	2.35E-15
Project managers are keen to share their knowledge and experience	0.58	2.41E-19
Project team, members are keen to share knowledge and experience gained during projects	0.58	3.71E-19
During the project experience is documented	0.60	2.79E-21

R - correlation coefficient, p - significance level

Source: own work.

4.2.3. Hypothesis 3: There is a statistically significant relationship between the collection, documentation and use of project knowledge with project managers' and project team members' attitudes towards knowledge sharing

Hypothesis three on the relationship between the collection, documentation and use of project knowledge with project managers' and project team members' attitudes towards knowledge sharing was verified using the rho-Spearman correlation testing method (Table 3).

All examined relationships between the collection, documentation and use of project knowledge with project managers' and project team members' attitudes towards knowledge sharing proved statistically significant, so the hypothesis was tested positively.

Table 3.

Results of the rho-Spearman correlation test for hypothesis 3

	Project managers are keen to share their knowledge and experience		Project team members are keen to share knowledge and experience gained during projects	
	R	p	R	p
There is an awareness in the office of the importance of knowledge in effective project management	0.56	5.65E-18	0.58	2.92E-19
Knowledge and experience from completed projects is collected and stored.	0.62	1.34E-22	0.59	5.82E-20
Knowledge and experience from completed projects is used in subsequent projects	0.68	1.05E-28	0.65	1.27E-25
During the project experience is documented	0.61	5.42E-22	0.63	9.48E-24

R - correlation coefficient, p - significance level

Source: own work.

4.2.4. Hypothesis 4: There is a statistically significant relationship between awareness of the importance of knowledge in effective project management and project knowledge management

Hypothesis four on the relationship between awareness of the importance of knowledge in effective project management and project knowledge management was verified using the rho-Spearman correlation testing method (Table 4).

The tested relationship between awareness of the importance of knowledge in effective project management and project knowledge management proved statistically significant, so the hypothesis was tested positively.

Table 4.*Results of the rho-Spearman correlation test for hypothesis 4*

	There is an awareness in the office of the importance of knowledge in effective project management	
	R	p
Knowledge and experience from completed projects is collected and stored	0.66	2.94E-26
Knowledge and experience from completed projects is used in subsequent projects	0.56	7.09E-18
Project managers are keen to share knowledge and experience	0.56	5.65E-18
Project team members are keen to share knowledge and experience gained during projects	0.58	2.92E-19
During the project experience is documented	0.61	3.79E-22

R - correlation coefficient, p - significance level

Source: own work.

4.3. Discussion of results

The literature emphasises that knowledge is one of the most valuable resources that needs to be properly managed. Knowledge management, including project knowledge, is just as important in private organisations as in public organisations.

Surveys conducted in local government organisations showed that in terms of collecting and storing project knowledge and experience, almost 42% of local government organisations often collect project knowledge and 37% of organisations always do so. Similarly, the documentation of project experiences was rated similarly highly, with 26% of organisations always documenting and 42% of organisations documenting frequently.

Research conducted by Paweł Wyrozębski on project knowledge management practices in Polish organisations in 2011 on a group of 397 respondents from various industries (including 33 respondents from public administration) shows that in Polish organisations project experiences are documented. The use of this practice often, usually and always was indicated by 52.4% of respondents. This is slightly lower than the result obtained in the research conducted in local government organisations, but it should be noted that the research conducted by P. Wyrozębski was carried out much earlier, which undoubtedly influences the results obtained.

A similar difference between these studies concerns the sharing of project knowledge. Research conducted in local government organisations shows that both project managers and project team members are willing to share knowledge and experience gained during project implementation. This practice occurs frequently and always in more than 85% of the surveyed offices. On the other hand, in P. Wyrozębski's study, the practice of sharing knowledge applies to almost 74% of organisations.

The practice of using knowledge and experience from implemented projects in local government organisations was rated highly by the respondents (89% of city and county offices use the acquired knowledge and experience always or often). A significantly lower result was

obtained in P. Wyrozębski's study, where such practice is always, often or usually used by a total of 67% of the surveyed organisations. Such a difference in the results obtained in both studies is influenced not only by the periods in which these studies were conducted, but also by the specific nature of the organisation. Local government organisations implement projects co-financed by external funding to a large extent, and this makes the project documentation created on the basis of which funding was successfully obtained a good source of knowledge used to prepare subsequent project applications.

Project knowledge management can be improved by implementing a publicly accessible system for collecting, storing and sharing project knowledge. However, research has shown that only 26% of local government organisations have elements of such a system in place. Research conducted by S. Spałek in enterprises (Spałek, 2013a), shows that only 34% of the surveyed enterprises had a centralised, publicly available system for collecting, storing and sharing project knowledge. Although this is not an impressive result, it is higher than that obtained in local government organisations.

As B. Jałocha, the attempt to implement a uniform centralised system for collecting, storing and sharing project knowledge supported by an IT tool may result in negative reactions from employees of public institutions, who may be passive or even oppose the implementation of such an IT system, fearing greater control and more objective measurement of the effectiveness of their work (Jałocha, 2011). Furthermore, the author notes that as a result of the implementation of such a system, employees will be burdened with additional duties resulting from new processes related to the collection of project experience.

5. Conclusions

As a result of the research, it was possible to obtain a picture of the state of project knowledge management in local government organisations in Poland. The research conducted provided answers to the research questions posed and positively verified the research hypotheses.

1. In the surveyed city and poviát offices, project knowledge is collected and used in subsequent projects. According to the survey results, in 79% of the surveyed city and poviát offices in Poland, project knowledge from implemented projects is "often" and "always" collected, and in 67% of the surveyed city and district offices, the experience gained during project implementation is "often" and "always" documented.
2. Project managers and project team members ensure proper knowledge transfer by sharing their experience and knowledge gained during project planning and implementation. This practice is applied in more than 85% of the surveyed city and poviát offices in Poland. What is noteworthy is the frequency with which knowledge

and experience from projects implemented in subsequent projects is used in the surveyed local government organisations. In more than 89% such practice is 'often' and 'always' applied. This indicates that local government organisations recognise the need to manage project knowledge.

3. Admittedly, many local government organisations lack a system to support project knowledge management, which may indicate a lack of a formalised project knowledge management process. These considerations suggest future research into the benefits of project knowledge management and research to identify success factors for implementing a project knowledge management system in such organisations.
4. Statistical tests conducted for this research showed significant correlations between awareness of the importance and value of project management and project knowledge accumulation, project knowledge sharing and project knowledge use.

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