

Unlocking Potential: The Effects of Knowledge Databases on Work Performance and Job Satisfaction in SMES

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Abstract: This qualitative study investigates the impact of implementing a Wiki-based knowledge management system on job satisfaction and performance in a medium-sized enterprise (SME) operating in the pool construction industry in Western Europe. This study aims to address the conflicting findings in the literature regarding the relationship between knowledge management, job satisfaction, and employee performance as well as the lack of research in the context of Western European SMEs. Using a qualitative methodology, the study provides nuanced insights into the effects of specific knowledge management processes, such as knowledge acquisition, sharing, generation, codification, and preservation, at different organisational levels. The results showed that the implementation of the Wiki-based knowledge database led to significant improvements in job satisfaction, mainly because of the ease of finding information and streamlining work processes. However, the system's ability to fully meet employees' specific knowledge needs influences their satisfaction levels. This study also highlights the differential impact of knowledge management processes at different organisational levels, with middle management and professionals benefiting more than top management and administrative staff. The findings are consistent with previous research indicating a positive relationship between knowledge management practices and job satisfaction and support the notion that well-structured and accessible knowledge resources can lead to better job performance. This study contributes to the field by offering a rich, qualitative perspective on the implementation of Wiki-based knowledge systems in the specific context of the pool construction industry in Western Europe, providing valuable insights for both researchers and practitioners in the fields of knowledge management and organisational behaviour.

Keywords: Knowledge management, Wiki-based systems, Job satisfaction, Work performance, Case study, Pool construction industry

1. Introduction

In modern companies, regardless of the industry, value is increasingly determined by existing knowledge capital, which creates new opportunities for customers and businesses (Pawlowsky, 2019). Small- and medium-sized manufacturing enterprises (SMEs) face several challenges, including the reduction of total product costs and the recognition of knowledge as a critical success factor (Fuchs-Kittowski & Voigt, 2010). Increasing decentralisation and internationalisation, coupled with frequent changes in employers for employees, influences the exchange of knowledge and work processes (Voigt et al., 2016). While the importance of knowledge management in SMEs is widely recognised, its specific impact on job satisfaction and performance remains a subject of debate.

Studies show a positive correlation between knowledge management and job satisfaction and work performance (Almahamid, Mcadams & Mahmoud Al Kalaldehy, 2010; Singh & Sharma, 2011; Kianto, Vanhala & Heilmann, 2016; Kucharska & Erickson, 2019; Meher & Mishra, 2021; Ćurčić & Matejić, 2021). However, conflicting results have been reported (Köseoglu et al., 2008; Singgih et al., 2020). While some studies have found no direct influence of knowledge management on employee performance (Singgih et al., 2021), others have confirmed the role of job satisfaction (Alyoubi et al., 2018).

Given these conflicting findings, this study aims to investigate how the implementation of a Wiki-based knowledge management system affects job satisfaction and job performance in Western European SMEs, specifically in the pool construction industry. By investigating the effects of specific knowledge management processes at different organisational levels, this study employs a qualitative methodology to capture nuanced insights that may have been overlooked in previous quantitative studies. This approach allows for context-specific insights into the underexplored area of Western European SMEs, potentially explaining conflicting

findings in broader studies and shedding light on the differential impact of knowledge management at different organisational levels.

As studies on job satisfaction and work performance have not been conducted in Western Europe, with two exceptions, and there are possible cultural differences in corporate cultures, it is necessary to investigate this area of research more closely in the context of Western European SMEs. Furthermore, the limitations of Kianto, Vanhala and Heilmann's (2016) study highlight the need for a more in-depth investigation into the relationship between knowledge management processes, job satisfaction, and employee work performance.

By addressing these gaps and conflicts in the literature, this study aims to provide a comprehensive understanding of how knowledge management affects SMEs' job satisfaction and performance. This study provides valuable insights into both academic research and practical applications in the field of knowledge management by offering a nuanced perspective on the implementation and effects of Wiki-based knowledge systems in the specific context of Western European SMEs in the pool construction industry.

2. Theoretical Background

The implementation of Wiki-based knowledge databases in SMEs, especially in specialised industries such as pool construction, requires a thorough understanding of job satisfaction, job performance, and the unique characteristics of SMEs. This section explores these concepts and their interrelationships in the context of SME knowledge management.

Job satisfaction is defined in many ways in the academic literature. Locke (1976) described it as a pleasant or positive emotional state resulting from the evaluation of one's work or work experience. This definition emphasises the cognitive evaluation process and employees' affective feelings. Similarly, Spector (1997) described job satisfaction as the extent to which people like or dislike their jobs and the different aspects of these jobs. Robbins and Judge (2013) characterise job satisfaction as 'a positive feeling about a job that results from an evaluation of its characteristics' (p. 74), highlighting the subjective nature of the evaluation. This interplay between ability and motivation is particularly relevant in SMEs that implement knowledge databases, in which the effectiveness of the system depends on both the quality of the information it contains and the willingness of employees to use and contribute to it.

Drabe (2015) defined employee satisfaction as the employee's attitude towards their own work, with the employee as the evaluative actor at the centre. The terms employee satisfaction and job satisfaction are considered to be interchangeable (Drabe, 2015). This perspective is particularly relevant in SMEs, where employees often wear multiple hats, which has a more direct impact on business success. Job satisfaction is defined as an attitude towards various aspects of work such as work content, conditions, supervisors, colleagues, training opportunities, and compensation (Rosenstiel, 2015, p. 73). This satisfaction results from the comparison between a subjectively perceived actual state and an individual target state (Rosenstiel, 2015, p. 73). The intensity and type of job satisfaction depend on whether individual demands are maintained or reduced in the face of reality (Bruggemann, Groskurth & Ulich, 1975). Different forms of dissatisfaction lead to different behaviours and have different effects on employees' willingness to perform. Fixed job dissatisfaction can lead to resignation, whereas constructive dissatisfaction motivates improvement (Rosenstiel, 2015). In the pool construction industry, where project-based work and technical knowledge are crucial, job satisfaction may be closely linked to an employee's ability to access and use specialised knowledge efficiently. A well-implemented knowledge database can potentially address these needs and positively affect job satisfaction.

Work performance and job satisfaction were closely related. However, job satisfaction alone does not necessarily result in a high workplace performance. Schanz and Strack (2019) defined work performance as the product of performance and willingness to perform, whereby a lack of performance cannot be compensated by a high willingness to perform, and vice versa. This interplay between ability and motivation is particularly relevant in SMEs implementing knowledge databases, where the effectiveness of the system depends both on the quality of the information it contains and on the willingness of employees to use and contribute to it.

In addition to these main factors, work organisation and ergonomic conditions, as well as the incentive system in the company, also influence work performance. Work performance is also influenced by individual parameters such as excessive demands, insufficient demands, physical and psychological factors, current and potential performance, and individual learning and social/professional skills. Dessler (2020) defines performance in organisations as the process and work performance of individuals and groups over a period of time. Employee performance, also referred to as work performance, is assessed based on an employee's actual performance compared to expected performance. In the context of SMEs in the pool construction industry, this could

translate into metrics such as project completion times, customer satisfaction rates, and efficiency of resource utilisation, all of which could be influenced by the effective use of a knowledge database. Mlekus, Ötting and Maier (2020) showed a correlative relationship between conducive work design, support, learning opportunities, increased work performance, job satisfaction, commitment to the organisation, and increased work motivation. In this context, digital technologies can help enhance the potential to increase motivation.

The definition of SMEs varies depending on their source. The European Commission defines SMEs based on the number of employees (less than 250) or annual turnover (up to €50 million), whereas IfM Bonn sets an upper limit of 500 employees and a turnover of up to €50 million (Levering, May-Strobl & Norkina, 2016). The company in this study, which operates in the pool construction industry, falls within these definitions, allowing for the application of SME-specific theories and findings.

Small and medium-sized enterprises (SMEs) recognise the importance of knowledge management for business success, similar to large companies. However, the implementation of knowledge management as a process primarily occurs in large companies. SMEs identify knowledge barriers due to a lack of awareness of knowledge as a resource (Pfau & Mangliers, 2009). The key challenge for SMEs is to identify, structure, and communicate critical knowledge among key personnel (Schiedermaier et al., 2009). In the pool construction industry, where specialised technical knowledge is critical, these challenges can be particularly pronounced, making the implementation of an effective Wiki-based knowledge base even more critical. Small firms can benefit from more efficient knowledge dissemination through personalised and regular communication. To avoid competitive disadvantages for decentralised subsidiaries, care must be taken to ensure that they do not generate redundant knowledge if they are not integrated into the parent company (Döring, 2016).

Organisational structures in SMEs include both primary and secondary structures. The primary organisational structure refers to the hierarchical organisation of departments and positions, while the secondary structure provides complementary mechanisms, such as cross-functions and project teams, to enable more flexible collaboration (Jager, 2009). In the pool industry, where project-based work is common, a flexible structure that allows knowledge to be easily shared across projects and teams can be particularly beneficial. Hybrid organisational structures may emerge by combining the formal organisational structure and flexible structures, as described by Nonaka and Takeuchi (1995). This hypertext organisation allows a balance between stability and adaptability.

The importance of knowledge management processes for job satisfaction varies by occupational group. Middle managers showed a strong correlation between internal knowledge sharing and job satisfaction, whereas different knowledge management processes influenced the job satisfaction of experts and specialists. Knowledge retention plays a key role for managers, whereas other processes are less influential (Kianto, Vanhala & Heilmann, 2016). In the context of an SME in the pool construction industry, this could lead to different effects from the knowledge database on the job satisfaction of design teams, construction crews, and customer service representatives. By exploring these theoretical concepts in the specific context of knowledge database implementation in an SME in the pool construction industry, this study aims to bridge the gap between general theories of job satisfaction and job performance and their practical application in a specialised SME setting.

3. Literature Review

Kianto, Vanhala and Heilmann (2016) hypothesised that knowledge acquisition has a positive influence on job satisfaction. However, the study found that knowledge acquisition in an urban organisation in Finland had no significant link to job satisfaction. The authors speculate that the nature of the work may not require the acquisition or generation of knowledge, and that these activities are neither supported nor rewarded within the organisation. Consequently, they have no impact on job satisfaction. This was also true for employees in strictly controlled and routine tasks as well as for experts, middle management, and top management. While this study used a quantitative approach with a large sample size, which provides statistical reliability, it may have missed nuanced insights that a qualitative approach might have uncovered, particularly regarding the reasons for the lack of an impact on job satisfaction.

The importance of knowledge sharing for employee job satisfaction and performance has been analysed in several studies. In their study of manufacturing companies in Jordan, Almahamid, Mcadams and Mahmoud Al Kalaldehy (2010) showed that knowledge sharing is positively associated with job satisfaction and can therefore improve organisational performance. Kianto, Vanhala and Heilmann (2016) confirm a positive relationship between knowledge sharing and job satisfaction, particularly among experts, employees, and middle managers. In their study of the Indian IT industry, Meher and Mishra (2021) emphasised the importance of effective

knowledge sharing to increase job satisfaction. Ćurčić and Matejić (2021) found that knowledge sharing needs to be motivated by the organisation, especially for employees with critical knowledge. In a comprehensive analysis, Rafique and Mahmood (2018) found a clear positive correlation between knowledge sharing and job satisfaction. These studies have predominantly used quantitative methods that, while providing broad trends, may not capture the full complexity of how knowledge sharing affects job satisfaction in different organisational contexts. A qualitative approach, as used in this study, could provide deeper insights into the mechanisms through which knowledge sharing affects job satisfaction.

Meher and Mishra (2021) analysed the impact of knowledge management on job satisfaction in the Indian IT industry. The results showed that effective knowledge management was positively correlated with job satisfaction. By contrast, Kianto, Vanhala and Heilmann (2016) were unable to prove a corresponding correlation in the public sector. Knowledge generation was not encouraged in local government occupational groups, which could lead to a lack of impact on job satisfaction. The contrasting findings of these studies highlight the potential influence of industry-specific factors on the relationship between knowledge management and job satisfaction. The focus of this study on a specific industry (pool construction) and its qualitative approach may help to elucidate sector-specific nuances.

Kianto, Vanhala and Heilmann (2016) investigated the relationship between knowledge codification and job satisfaction. The questions on knowledge codification were related to the extent of knowledge storage and documentation, as well as the extent of knowledge repositories. The results showed a proven influence on job satisfaction among white-collar workers, but this relationship was not found among experts, middle management, and top management. According to the case study by Ćurčić and Matejić (2021), the codification of knowledge takes place through the introduction of rules, procedures and instructions that regulate business activities in detail. Written procedures facilitate access to necessary knowledge for new employees. This study found a demonstrable link between knowledge codification and job satisfaction. Although these studies provide valuable insights, their quantitative nature may not fully capture the complexity of how different groups of employees interact with codified knowledge. The qualitative approach used in this study allowed for a more in-depth exploration of these interactions.

Kianto, Vanhala and Heilmann (2016) analysed the relationship between knowledge retention and job satisfaction. Knowledge retention is defined as the continuity and preservation of knowledge within an organisation. The results show that knowledge retention is the most important factor in top management job satisfaction. Knowledge retention is an important determinant for experts and middle management. This seems plausible, as management needs a comprehensive understanding of the organisation in order to make strategic decisions. It is also important for professionals and middle managers to understand the external environment of the organisation in order to act effectively. Meher and Mishra (2021) confirmed in their study that knowledge retention has a positive impact on job satisfaction and ensures the security and future use of well-structured knowledge. The consistent findings across these studies suggest a robust relationship between knowledge retention and job satisfaction. However, the mechanisms through which this relationship operates may benefit from the deeper exploration that qualitative methods can provide.

Singgih et al. (2020) find that knowledge management does not have a significant impact on employee performance. Instead, this study shows that the work environment has a significant impact on employee performance, both directly and indirectly, through job satisfaction. Job satisfaction has a positive effect on employees' performance. However, job satisfaction did not mediate the relationship between transformational leadership and employee performance, or between knowledge management and employee performance. Instead, job satisfaction mediates the relationship between the work environment and employee performance. Therefore, management should promote employees' job satisfaction by creating a positive work environment that improves employee performance. Meher and Mishra (2021) confirm that knowledge management has a positive and significant impact on employee performance. The effective use of shared knowledge improves work performance, because job satisfaction depends on the successful completion of tasks. Zhang (2017) conducted a comprehensive study on the use of knowledge management systems (KMS) in the Chinese financial sector. The results show that the use of a deep structure, which is a specific feature of knowledge management systems, has a positive impact on employees' work performance. Various contingency factors moderated the relationship between the use of rich KMS and workplace performance, with employees likely to perform better when they used KMS functions for specific tasks. The conflicting results of these studies highlight the complexity of the relationship between knowledge management, job satisfaction, and job performance. Although the quantitative methods used in these studies provide valuable insights, they may not fully capture the contextual factors

influencing these relationships. A qualitative approach, as used in this study, can help unpack this complexity and provide a more nuanced understanding of how these factors interact in specific organizational contexts.

This literature review highlights gaps in our understanding of the impact of knowledge management on job satisfaction and performance in SMEs with conflicting findings in different contexts. This study addresses these gaps by investigating the implementation of a Wiki-based knowledge-management system in SME using a qualitative approach. This methodology allows for a deeper exploration of the contextual factors that may influence the relationships between knowledge management, job satisfaction, and job performance and may explain some of the conflicting results found in previous quantitative studies. By focusing on a specific industry (pool construction) and employing a qualitative approach, this study aims to uncover the unique challenges and opportunities in this under-researched setting and provide a more nuanced understanding of the impact of knowledge management systems on SMEs.

4. Current Study – Aim and Research Question

The central question of this study concerns the influence of knowledge management on job satisfaction, work performance, and organisational success in light of the changing environment and increasing importance of knowledge in SMEs. This question directly addresses the conflicting findings identified in the literature review regarding the impact of knowledge management on job satisfaction and performance in different organisational contexts. The main objective of this study is to investigate the extent to which the introduction of a knowledge management system based on Mediawiki in an SME can have an impact on subjective work performance and job satisfaction. The aim was to analyse the effects of specific knowledge management processes on job satisfaction.

A qualitative research methodology was selected to identify previously unknown opportunities and challenges in the implementation of knowledge management systems in SMEs. This approach allows for a more nuanced exploration of how knowledge management processes operate within the specific context of an SME, potentially filling gaps in the understanding left by previous quantitative studies. This study aimed to generate findings that are not only scientifically but also economically useful. The results should provide practical recommendations for the design of knowledge management processes in SMEs and contribute to further development of knowledge transfer programs. By focusing on SME in the pool construction industry, this study addresses a significant gap in the literature, as much of the existing research focuses on large organisations or other specific sectors. This study did not evaluate the knowledge management software and did not consider the detailed organisation of knowledge management.

5. Methodology

This case study examines the influence of knowledge databases on job satisfaction and work performance in international SME. This research approach was chosen to understand and describe the complex phenomena in its natural environment. For this purpose, individual cases were analysed intensively and in detail (cf. Yin, 2018). The decision to focus on a single company was taken to allow an in-depth exploration of the complex interplay between knowledge management, job satisfaction, and work performance within a specific organisational context. Although this approach limits the generalisability of the findings, it provides rich contextual insights that can inform future research and practice in similar settings.

This study focuses on a little-researched area of knowledge management and the knowledge base of a medium-sized company in the pool-construction industry. The company is active in four main business areas and operates in eleven countries. The implementation of a knowledge database was considered the top priority for a successful growth. A knowledge base is used to document products, standards, and guidelines for project implementation and execution. Knowledge-based statistics show a significant increase in content pages, resources, and page views since their launch in December 2021. The company in which the study takes place included 150 employees, of which 18.7% were female and 81.3% were male. Employee structures are widespread across several countries, with the majority employed in Austria. This international aspect of the company provides an opportunity to explore how knowledge management practices affect job satisfaction and performance in different cultural contexts within a single organisation.

5.1 Participants

The selection of interviewees for this study was carried out according to Yin's (2018) criteria to ensure that the research questions were relevant and answerable to guarantee the richness of information and cover a variety

of perspectives. The diversity of interviewees was ensured through targeted selection from different departments of the company, considering both international orientation and gender distribution (Table 1).

Table 1: Information on the participants

Person	Gender	Age	Company affiliation	Expert	Position
B1	female	20-35	1-5		Administrative / Worker
B2	male	36-50	1-5		Administrative / Worker
B3	male	20-35	1-5	Expert	Administrative / Worker
B4	male	36-50	<1		Administrative / Worker
B5	female	36-50	1-5		Middle management (team leader)
B6	male	36-50	1-5		Middle management (team leader)
B7	male	51-65	16-30	Expert	Administrative / Worker
B8	male	20-35	1-5		Administrative / Worker
B9	male	36-50	1-5		Top-Management
B10	male	20-35	1-5		Administrative / Worker
B11	male	36-50	1-5	Expert	Administrative / Worker
B12	male	51-65	16-30		Middle management (team leader)
B13	male	36-50	6-15	Expert	Administrative / Worker
B14	female	51-65	6-15		Top-Management
#14	11 male 3 female	Æ 42,43	Æ 8,02	4 Experts	2 Top-Management 3 Middle management (team leader) 9 Administrative / Worker

5.2 Instrument and Data Collection

An interview guide was developed to collect information on job satisfaction, work performance, and work experience, using a knowledge database. To develop the guide, both main and detailed questions were created to guide the interviewer during the interviews. Various aspects have been explored, including knowledge generation, codification, retention, and their influence on workplace performance. Finally, participants were asked about their experience with the knowledge base and open questions.

Semi-structured interviews were conducted using an interview guide consisting of a catalogue of open-ended questions to be answered by the interviewees in their own words (Döring, 2022). According to Misoch (2019), this structure is based on four phases. As part of the organisational preparation according to Döring (2022), the interview guide was checked for comprehensibility and practicability by means of a test interview with a colleague. This approach allowed for a balance between consistency across interviews and flexibility to explore each participant's unique insights, in line with the study's aim of uncovering nuanced experiences in the knowledge management system. During the development of the guide, both the main and detailed questions (Table 2) were created to guide the interviewer during the interviews (Döring 2022):

Table 2: Interview guide

1. Information phase
Welcome and thank you for your participation
Information on the research topic
Obtaining authorisation for the audio recording and use in the study
Information on the anonymous processing of the data material
2. Demographic data and warm-up
Demographic survey
Query of the position and work area in the company
Use of the knowledge database

3. Main part
Job Satisfaction
Are you satisfied with the work?
What makes you happy at work?
Would you say that Mediawiki and the measures behind it make you happier?
What makes you happy about it?
Knowledge acquisition - does the acquisition of knowledge make you satisfied or only dissatisfied if it is not available?
Knowledge exchange and transfer - Do you like to share your knowledge with colleagues? Does the Mediawiki support you in this?
Knowledge generation - Do you enjoy generating/creating new knowledge?
Knowledge codification - Do you like to write down new knowledge and do you like to prepare it?
Knowledge retention or knowledge storage - is it important to you that knowledge is retained in the company?
Work performance
Does the Mediawiki affect your work performance?
4. Closing
Final questions:
Question about experiences with the Mediawiki and the question about open topics.

The interviews for data collection were conducted in July 2023. The interviews were conducted in German and one case in English. The total amount of interview material was 11:56 hours, with interviews lasting an average 51.10 minutes. The interviews were digitally recorded using Microsoft Teams and then transcribed. Transcription was carried out using the Amberscript web platform, which uses artificial intelligence (AI) for support, according to the rules of Kuckartz and Rädiker (2022).

5.3 Data Analysis

Qualitative content analysis was used to analyse the transcripts. MAXQDA Standard 2022 software was used for content analysis, as recommended by Kuckartz and Rädiker (2022). The analysis process followed a systematic approach to ensure rigor and reliability of the findings.

- Initial coding: The material was analysed using predefined categories derived from the research questions and a literature review. These categories include job satisfaction, job performance, and various knowledge-management processes.
- Inductive subcategory development: Within these main categories, subcategories were inductively derived from the data. This allowed themes and patterns specific to the participants' experience of the knowledge management system to emerge.
- Second round of coding: The materials were coded according to these refined subcategories to ensure a comprehensive analysis of the data.

The content analysis of the interview transcripts combined quantitative and qualitative elements such as frequency counts and verbatim quotations. This mixed approach allowed for both a broad overview of the data trends and a deep dive into the nuanced experiences of individual participants. Coding was performed by only one person, which, while ensuring consistency, may introduce potential bias. Regular peer debriefing sessions were held to discuss and validate the emerging codes and themes. The categories and subcategories (Table 3) were derived directly from the research questions and refined based on interview data. They were designed to capture the multifaceted nature of job satisfaction and work performance in relation to the different aspects of the knowledge management system. This categorisation allows for a structured analysis of how different knowledge management processes contribute to job satisfaction and work performance, thus addressing the core objectives of the study.

Table 3: Categories and Subcategories

Main categories	Subcategories
Job satisfaction	General job satisfaction Influence of job satisfaction on employee satisfaction Satisfaction through knowledge acquisition Satisfaction through knowledge exchange Satisfaction through knowledge generation Satisfaction through knowledge codification Satisfaction through knowledge retention
Work performance	Time Quality Knowledge exchange Knowledge acquisition
Experience	No subcategories

Although the findings of this single case study may not be widely generalisable, they provide valuable insights into the complex dynamics of knowledge management in SMEs. These insights can inform hypothesis generation for future larger studies and offer practical considerations for similar organisations implementing knowledge management systems.

6. Results

To allow for comparison, the survey asked about general job satisfaction independent of the knowledge database. Five participants said that they were generally satisfied with their job. However, limitations were also mentioned, with six people citing lack of time as the main reason for not being fully satisfied. Other reasons included too many projects, which were also linked to a lack of time and problems with personal development and induction. In summary, three people expressed complete satisfaction, whereas nine expressed limited satisfaction, mainly because of time constraints and workload. The analysis at the organisational level showed that middle management and professionals felt that some aspects were imperfect, while administrators were satisfied, but only half of them were fully satisfied.

6.1 Job Satisfaction

A study on job satisfaction one and a half years after the introduction of the knowledge base showed that 11 of 14 participants reported a positive impact. They experienced increased satisfaction owing to the quick retrieval of information and the simplification of their work processes. However, some participants indicated that their specific knowledge needs had not yet been fully covered, which affected their satisfaction. Employees with complex tasks and mobile working conditions particularly appreciated the use of the knowledge base. The analysis at the organisational level shows that both middle management and experts benefit from the measure, while administrators show an improvement, and top management shows no change in job satisfaction. These results support the hypothesis that knowledge management promotes job satisfaction and shows differences depending on the organisational structure and employees' area of responsibility.

Although the knowledge base is the primary source of external knowledge, only about half of the respondents indicated that knowledge acquisition influences their job satisfaction. Reasons for satisfaction vary and include increased competence, personal relevance of knowledge content, improved understanding of interrelationships, and increased efficiency of knowledge acquisition. The results did not clearly confirm or disprove the contribution of knowledge acquisition on job satisfaction. The distribution of knowledge acquisition at the organisational level shows no significant differences between the hierarchical levels. Experts may show less interest in external knowledge acquisition, which could be due to their specialised roles and existing management knowledge.

This study showed that knowledge sharing has an important impact on job satisfaction for most respondents. Knowledge sharing helps clarify technical issues and creates a common knowledge base. In addition to exchanges with colleagues, dialogue with superiors is also seen as an important dimension of satisfaction with knowledge sharing. Only one person rated the influence as low, while for two people, the exchange had no

influence on satisfaction because the necessary content support was not yet available in the knowledge database. Overall, the theory that knowledge sharing has a positive impact on job satisfaction is confirmed. The analysis at the organisational level shows that top and middle management see the greatest impact of knowledge sharing on job satisfaction, followed by administrative staff. On the other hand, experts do not perceive knowledge sharing as a decisive factor.

Knowledge generation played an important role along with knowledge sharing as a factor influencing job satisfaction, as highlighted by 11 respondents. The enjoyment of knowledge generation can be attributed to curiosity and the ability to communicate with the older generations. Personal exchange during knowledge generation is considered important, as it provides additional information and enriches the process. Some participants also stressed the importance of contributing their results to the knowledge base to help others and share knowledge. A knowledge base is used to obtain inspiration and new information. However, not all participants experienced satisfaction when generating knowledge, mainly because of time pressure at work. Overall, knowledge generation was seen as a driving force for job satisfaction, with 12 people perceiving varying degrees of impact. The analysis at the organisational level showed a strong and even presence of knowledge generation at all hierarchical levels.

The respondents addressed the issue of knowledge codification less intensively. Eight participants expressed satisfaction, particularly those who were actively involved in content creation. One person said that he would like to be more involved but that he did not have enough time due to other responsibilities. Some respondents document their knowledge and pass it to the knowledge management unit, which processes and distributes information. One person found the codification of knowledge time-consuming and did not feel satisfied with the process. In summary, knowledge acquisition contributes to job satisfaction but not as much as knowledge generation or knowledge sharing. The distribution at the organisational level shows different assessments, with top management seeing only a small influence and one person among the clerk seeing no influence. Overall, there was an even distribution of agreement, with only one respondent at each hierarchical level, indicating that it had little impact.

Knowledge retention, also known as knowledge preservation, proved to be an important factor influencing job satisfaction, as emphasised by all participants. However, no specific questions were asked on this topic in the two interviews, so only 12 participants made statements on this topic. However, all participants were positive. The reasons for its outstanding importance are manifold. The ease of use, particularly quick and easy access, proved to be a crucial aspect. Four responses emphasised the importance of knowledge retention, particularly in the context of a centrally organised and curated unit that allows knowledge to be collected and made centrally available. Two participants also highlighted issues of demographic change and staff retirement in the coming years as important factors in relation to knowledge retention. One participant highlighted the importance of induction in the context of knowledge retention. In summary, knowledge retention was confirmed by almost all participants, with two exceptions, and therefore, had an impact on job satisfaction. The breakdown at the organisational level shows that knowledge retention is particularly important for top management and experts, while it seems less important for clerks and middle management.

6.2 Work Performance

Employees perceive the influence of knowledge management, in the form of a knowledge database, to be more intensive than their influence on job satisfaction. In principle, 11 of the 14 participants considered that their work performance would improve. The main reason for the increase in work performance is the time advantage of information procurement. The ease with which information can be obtained saves time and makes it possible to respond more quickly to customer enquiries or find the materials needed. The ease of acquiring knowledge through the use of a knowledge base is also highlighted. Some respondents also highlighted the ease of sharing knowledge with colleagues and the improvement in work through the availability of relevant information. Although the majority of respondents noticed an increase in their work performance, some noticed only a slight increase. This may be because the impact of the knowledge base is limited to their specific jobs or because their jobs require less knowledge.

The analysis at the organisational level shows that the proportion of those who perceive an increase in work performance is lower among the top management and administrative staff. This can be attributed to the limited number of contact points at the top and the less relevant knowledge base for routine activities. This discrepancy in perceived performance improvement across organisational levels raises important questions regarding the design and implementation of knowledge management systems. This suggests that a one-size-fits-all approach

may not be optimal, and that tailoring the system to different roles and levels within the organisation could potentially increase its effectiveness.

6.3 Experience

As with work performance and job satisfaction, employees particularly appreciate the ease of searching for and accessing information, which increases work performance and satisfaction and reduces error rates. According to some employees, the knowledge base also contributes to the improved retention and faster integration of new employees. In the long term, some expect that the centralisation of knowledge and data storage will make personal files obsolete. The attractiveness and user-friendliness of the system are emphasised, as is the importance of a structured and well-maintained database for employee acceptance and skills development. Overall, there is broad support for a knowledge database as a valuable tool to increase efficiency and knowledge networking within a company.

6.4 Summary of Results

These results suggest that knowledge-management processes contribute differently to job satisfaction and performance. Knowledge-sharing and generation emerged as the strongest contributors to job satisfaction, with most participants reporting positive effects. Knowledge retention is generally recognised as important, particularly by top management and experts. Knowledge codification and acquisition showed mixed results, with moderate positive impacts on job satisfaction. In terms of work performance, the implementation of a wiki-based knowledge base was perceived as having a more intense impact than job satisfaction. Most participants reported increased work performance, mainly because of time savings in information retrieval and improved knowledge-sharing. However, the impact varied across organizational levels, with top management and administrative staff reporting less pronounced effects. These findings suggest that while all knowledge management processes contribute to job satisfaction and work performance to some extent, their impact varies depending on the specific process and employee's position within the organisation.

7. Discussion

Looking at the underlying theoretical findings and the empirically analysed and discussed results of the study, some conclusions can be drawn regarding the effects of implementing a knowledge database on job satisfaction and work performance. This study identified knowledge generation as a positive aspect of job satisfaction. While knowledge acquisition is seen as an influencing factor for job satisfaction by half of the respondents, the study by Kianto, Vanhala and Heilmann (2016) shows that this factor, like knowledge generation, is not significant across all organisational levels. However, this study shows that the number of mentions of knowledge generation has the second-highest impact on job satisfaction.

The findings are consistent with and diverge from previous research in interesting ways. For example, while Kianto, Vanhala and Heilmann (2016) found that knowledge sharing was the most important process, followed by knowledge retention, our study found an inverse relationship. Knowledge retention was mentioned most often, followed by knowledge sharing and knowledge generation, with equal importance. This can also be seen in studies by Kucharska and Erickson (2019) and Ćurčić and Matejić (2021). This discrepancy may be due to the specific context of the pool construction industry, where the retention of specialised technical knowledge is critical to project success.

The differential impact across organisational levels in our study also provides new insights. Unlike Kianto, Vanhala and Heilmann (2016), who found that knowledge processes have a limited impact on top management satisfaction, our study found that top management highly valued knowledge retention, generation, and sharing. This may be due to the more hands-on nature of top management roles in SMEs compared to larger organisations studied in previous research.

In general, knowledge management processes have a strong effect on job satisfaction, which could indicate increased efforts to improve knowledge in the organisation.

In comparison with the studies cited in this paper, the knowledge processes that have an impact show the following responses according to Table 4.

Table 4: Comparison of the studies in this paper on the influence of knowledge processes on job satisfaction

	Case study	Kianto, Vanhala and Heilmann (2016)	Kucharska und Erickson (2019)	Ćurčić und Matejić (2021)
	KMU	Municipal	IT & Construction	Military
Knowledge acquisition	partly supported	no	-	-
Knowledge exchange	supported	yes	yes	yes
Knowledge generation	supported	no	-	-
Knowledge codification	supported	yes	-	yes
Knowledge preservation	supported	yes	-	-

The contrasting findings between our study and previous research, particularly regarding the impact on different organisational levels, highlight the importance of context in the effectiveness of knowledge management. For example, the finding that middle managers benefit significantly from the knowledge base contrasts with previous studies (e.g. Singgih et al., 2020) that found a limited impact of knowledge management on middle management performance. This discrepancy highlights the need for tailored knowledge management approaches that take into account the specific roles and responsibilities within an organisation.

In the context of middle management, which in this research case represents the team leaders of specialist departments, the following overall picture emerges: the knowledge base contributed to job satisfaction for all team leaders surveyed, whereas knowledge generation emerged as the dominant factor in the knowledge processes. Knowledge acquisition comes second, on par with knowledge sharing, knowledge codification, and knowledge retention. Compared to the study by Kianto, Vanhala and Heilmann (2016), in which middle managers consider knowledge sharing to be the most important factor influencing job satisfaction, a different dynamic is evident.

The experts in this study generally attributed a high level of influence to the knowledge database. Regarding knowledge processes, knowledge retention had the greatest influence on job satisfaction, followed by knowledge acquisition. This observation is in line with the findings of Kianto, Vanhala and Heilmann (2016), in which experts attributed the greatest influence to knowledge sharing and knowledge retention. Kianto, Vanhala and Heilmann (2016) speculate that experts may derive satisfaction from the fact that the solutions they develop are shared, thus adding value to the organisation. Although problem-solving is central to experts, knowledge generation does not seem to increase job satisfaction to the same extent as the two preferred factors of knowledge retention and knowledge sharing.

Although the findings regarding experts are consistent with those of previous research, the reasons for this inconsistency may differ. In this study, the high value placed on knowledge retention by experts is likely due to the project-based nature of the pool construction industry, in which lessons learned from past projects are critical to future success. This suggests that the nature of the industry plays an important role in determining which knowledge-management processes are the most valued.

The knowledge base also has a clear impact on clerks' job satisfaction, although not to the same extent as for middle managers and experts. The interviews show that this is due to the lack of specific knowledge and the highly routinised way of working. Knowledge exchange and generation were considered to have the greatest influence on this group, followed by knowledge acquisition. This observation correlates with the findings of Kianto, Vanhala and Heilmann (2016), who saw knowledge exchange as the most important influencing factor, followed by knowledge codification. In this case study, the survey responses suggest that because of the project-based nature of administrative and workers business, there is an increased need to develop solutions to contribute to the success of the business, which may result in less focus on documentation.

This research finding is consistent with studies that found a positive impact of knowledge management on work performance, such as that of Meher and Mishra (2021) and Zhang (2017). However, this contradicts studies, such as those by Singgih et al. (2020), which found no significant impact of knowledge management on work performance. This study fills the knowledge gap identified by Kianto, Vanhala and Heilmann (2016) regarding the relationship between knowledge management, job satisfaction, and workplace performance.

The implications of these findings extend beyond the pool-construction industry. For SMEs in other sectors, these results suggest the following.

- The effectiveness of knowledge management systems can vary significantly across organisational levels. SMEs should consider tailoring their knowledge-management approaches to the specific needs of different employee groups.
- The nature of the industry and type of work (e.g. project-based vs. routine) can significantly influence which knowledge management processes are most valued. SMEs should assess their specific industry context when designing knowledge management strategies.
- The implementation of a Wiki-based knowledge database can have considerable positive effects on both job satisfaction and work performance, even in industries not traditionally associated with intensive knowledge work.
- The strong emphasis on knowledge retention found in this study may be particularly relevant for SMEs in industries with high employee turnover or those facing demographic challenges (e.g. an aging workforce).
- The different impacts of knowledge codification on different employee groups suggest that SMEs should carefully consider how they structure and present information in their knowledge-management systems to ensure the relevance and usability of all employees.

These implications provide valuable insights for SMEs in different industries for implementing or improving their knowledge management systems. However, further research is needed to validate these findings in different industry contexts and to explore how the unique characteristics of different SMEs may influence the effectiveness of knowledge management practices.

8. Conclusion

This study showed that the introduction of a wiki-based knowledge base improved job satisfaction. In particular, in industries with complex products and extensive standards, wiki enables quick access to relevant information, increasing satisfaction. All respondents who noted a positive impact emphasised their ability to find information quickly. This is a crucial factor, as many employees cited lack of time as a barrier to satisfaction. Thus, this study confirms the positive impact of knowledge management on job satisfaction even in manufacturing companies. It also encourages the introduction of simple knowledge management using Wiki in small and medium-sized companies.

This study identifies knowledge generation as a positive aspect of job satisfaction. While knowledge acquisition is seen as an influencing factor for job satisfaction by half of the respondents, the study by Kianto, Vanhala and Heilmann (2016) shows that this factor, like knowledge generation, is not recognised across all organisational levels. However, this study shows that the number of mentions of knowledge generation has the second highest impact on job satisfaction. It is worth noting that in the study by Kianto, Vanhala and Heilmann (2016), knowledge sharing was seen as the most important process, followed by knowledge retention. In contrast, the current study shows an inverse picture based on the mentions: Knowledge retention was mentioned most often, followed by knowledge sharing and knowledge generation with equal importance. In general, knowledge management processes have a strong effect on job satisfaction, which could indicate increased efforts to improve knowledge in the organisation.

The impact on work performance was very positive. Of the 14 respondents, 11 noted an improvement in work performance and three noted a minor impact on work performance. The time saved by being able to easily finding curated information is a key factor. Ease of acquiring and sharing knowledge has also been cited as an important factor. However, it can be deduced from the statements that, on the one hand, there was a considerable need for knowledge in the work processes and, on the other hand, existing knowledge was not effectively curated and documented.

This study shows that the introduction of a knowledge database has a positive effect on job satisfaction and work performance in SME after one and a half years of operation. However, it remains unclear whether the positive results are due to the wiki database itself or to the careful curation of the data by employees. However, this can have a significantly positive effect on companies. This underlines the importance of targeted knowledge management for business success, especially during times of increasing knowledge intensity and global competitive pressure. Therefore, this study provides valuable insights into the potential for knowledge management in SMEs and the strategic orientation of such companies.

9. Recommendations for practice

The following practical recommendations for the implementation of knowledge bases are based on the results of this study and employees' experiences:

- Introduction of a knowledge management system: Based on the positive effects of the knowledge management system in the present study, a wiki-based system should be implemented to improve knowledge management and sharing, as it is well-suited for knowledge management and can lead to higher job satisfaction and improved work performance. In addition, this can lead to an increase in employees' personal skills.
- Pre-implementation survey: A pre-implementation survey of employees' needs will help address these needs and better document changes in job satisfaction.
- Communicating the benefits: To promote the acceptance and use of a knowledge management system, it is advisable to communicate the benefits, such as time savings and improved information retrievability transparently, and to provide regular training.
- Employee education and training: Based on the findings of the positive effects of knowledge acquisition and sharing, employees can be trained to use a knowledge management system to increase its effectiveness and acceptance.
- Encouraging knowledge creation: As knowledge creation has a positive influence on job satisfaction, an incentive system can be created to motivate employees to actively participate in knowledge creation.
- Regular updating and maintenance of the knowledge base: Regular updates and maintenance of the knowledge database should be implemented to ensure the long-term effectiveness of the knowledge management system.
- Embedding knowledge management in corporate culture: Knowledge management can be embedded as an integral part of corporate culture to establish a sustainable knowledge culture in the long term.
- Feedback and evaluation: An ongoing process of evaluation and feedback from employees helps continually improve the knowledge management system and adapt it to changing needs.
- Consider the organisational context: When implementing these recommendations, organisations should consider their specific context, including industry, size, and existing organisational culture. The effectiveness of these practices varies among SME.

10. Limitations and Future Directions

Respondents were limited to employees who used a knowledge base. This provided a detailed insight into the experiences of this group but may lead to bias in the results. As not all employees regularly access the knowledge base, the overall picture of the organisation may be incomplete, leading to some ambiguity in the results.

The interviews were conducted with the company's knowledge manager, which may have influenced the objective view. Although the researcher tried to maintain a neutral position, internal actors may have consciously or unconsciously influenced the interviewees' responses. This could have led to potentially biased results, as highlighted by Misoeh (2019).

This case study illustrates only one perspective of a specific international manufacturing company in the pool-construction industry. The generalisability of these findings to other industries or even to other SMEs within the same industry may be limited. In particular, SMEs are often characterised by complex organisational structures that are influenced by many variables. These variables include access to the knowledge base, timeliness of the data provided, and the way in which the organisation is shaped by its culture. Studies such as Lund's (2003) on organisational culture or Singh and Sharma's (2011) on an organisation's learning culture have shown that these factors can have a significant impact on the success of knowledge management. Studies such as that by Kucharska and Erickson (2019) on the role of IT infrastructure and IT skills as factors influencing knowledge sharing and job satisfaction also show that the influence of infrastructure is overestimated, whereas that of IT skills is underestimated. Particularly in small- and medium-sized enterprises, these factors can diverge significantly, thus influencing the perception of knowledge management.

The limitations of the present study provide grounds for further research to deepen and extend the findings, and the impact of knowledge management on job satisfaction and work performance may be influenced by various factors such as access to the knowledge base, timeliness of data, organisational culture, or learning

culture of an organisation. Future studies should explore these parameters in greater detail to obtain a more complete picture.

A comparative analysis of similar SMEs with different approaches to knowledge management could provide valuable insights into best practices. Such benchmarking can help to identify successful strategies and derive recommendations for action. This study represents a snapshot that does not consider the long-term effects of an implemented knowledge management system. Future research could focus on how the implementation and use of the system affects job satisfaction and work performance over time.

In conclusion, while this study provides valuable insights into the implementation of a Wiki-based knowledge management system for SME in the pool construction industry, it also highlights avenues for future research. A comparative analysis of similar SMEs using different knowledge management approaches could provide best practices and actionable recommendations. Furthermore, as this study provides a snapshot of the system's impact, longitudinal research is needed to understand the long-term effects on job satisfaction and work performance. By addressing these areas, future studies can build on the current findings to develop a more comprehensive understanding of the role of knowledge management in different SME contexts. This expanded research agenda will not only contribute to the theoretical advancement of the field, but also provide practical guidelines for SMEs seeking to implement effective knowledge management systems, ultimately enhancing their competitive edge in an increasingly knowledge-driven business landscape.

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Ethics statement: The study was conducted in full compliance with all applicable laws and institutional regulations. Informed consent was obtained from all participants prior to their involvement. The privacy rights of all individuals were diligently respected and safeguarded. The research adhered to the ethical principles set out in the World Medical Association's Code of Ethics (Declaration of Helsinki) concerning research involving human subjects. Ethical committee review and approval were not required, as the data collection was solely based on non-invasive methods and addressed everyday topics without particular ethical sensitivity. No sensitive personal data, as defined by the European General Data Protection Regulation (GDPR), was collected. Special care was taken to protect the participants. Participation was entirely voluntary, and informed consent was secured in advance. Participants were free to withdraw from the survey at any time without providing reasons. It is also noteworthy that no dependency relationship existed between the researchers and the participants. All necessary data protection measures were meticulously implemented. All data were collected and processed exclusively in an anonymised form, making it impossible to trace the information back to individual persons. Data storage was carried out in accordance with current data protection standards. Methodologically, only standardised and well-established research techniques were applied, fully complying with recognised scientific standards. Experimental or innovative methods were entirely avoided.

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