International Journal of Knowledge Management
Volume 21 • Issue 1 • January-December 2025

Enhancing Knowledge Transfer:
Exploring Intergenerational Dynamics at an Engineering Company in Cape Town

Bingwen Yan
https://orcid.org/0000-0002-2630-5238
Cape Peninsula University of Technology, South Africa

Rendani Wilson Maladzhi
Durban University of Technology, South Africa
Received: February 23rd, 2024 | **Accepted:** October 15th, 2025

ABSTRACT

Construction companies face challenges in knowledge sharing and transfer within their collaboration networks, hindering innovation. Young artisans encounter barriers that impede their skill development, while ageing artisans struggle to mentor them effectively. This study, conducted in Cape Town, explores internal and external processes of knowledge exchange between young and old artisans in a construction company. A survey (n=120) using SPSS Version 25 reveals insights into the dynamics of knowledge transfer. The findings emphasize the importance of structured interventions to bridge generational gaps and advocate for knowledge sharing as vital for organizational development in the construction industry.

KEYWORDS

Knowledge Transfer, Knowledge Sharing, Industry Networks, Personality Traits, Employees

INTRODUCTION

Organizational knowledge is widely recognized as a crucial foundation for industry competitiveness, business strategy, and innovation. However, the aging workforce and the lack of young people entering the industry with necessary skills and knowledge pose challenges for knowledge transfer (Fasbender & Gerpott, 2022). It has become increasingly important to study and unlock current knowledge management (KM) practices within companies and the industry as a whole in order to accelerate the process of knowledge transfer among employees and company networks. The transfer of knowledge is considered a catalyst for new business activity development and technological innovation (Williams et al., 2018). Therefore, engineering companies should identify key factors that affect knowledge transfer within their organizations, particularly between young and old employees. Existing literature emphasizes three levels of knowledge creation: individual, group, and organizational knowledge (Saini et al., 2018). In the context of this study, tacit knowledge is seen as a relevant concept for effective knowledge transfer between generations in the engineering environment. This study aims to explore the factors influencing knowledge transfer, including tacit knowledge and the Big Five personality traits of individuals within the company. Some researchers identified that while enterprise social network use does not moderate the relationship between employees' well-being and knowledge sharing, it

DOI: 10.4018/IJKM.392304

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

has a positive and significant effect on knowledge sharing (Berraies et al., 2020). Exploration of an engineering company's skills development and knowledge transfer practices, particularly between young and old employees, is necessary. Due to the aging workforce, there is a lack of clear framework and strategy for knowledge sharing and transfer among employees, highlighting the need for further investigation to ensure the retention of skills and knowledge within engineering firms.

The research problem statement stems from the lack of standardization (Saini et al., 2018), trust, commitment, and efficient processes (Huie et al., 2020) in knowledge sharing and transfer among employees within organizations; it makes it difficult for knowledge sharing and transfer between young and old employees within organizxations. This leads to the potential loss of knowledge and skills, negatively impacting organizational growth and sustainability. Furthermore, there is a gap in previous research that engineering companies have recognized. With experienced workers about to retire, there is an urgent need for industry players to collaborate with companies, learning institutions, nonprofit organizations, government departments, and community organizations to find effective ways to transfer knowledge. The gap between knowledge of what works and the adoption of widespread practices presents a major challenge for engineering organizations, as does the willingness of employees to transfer knowledge. Some employees may hesitate to share knowledge due to concerns about power dynamics, value, organizational culture, or leadership abilities. Therefore, this study aims to provide insights into the behavior of individual employees within organizations, assisting in the development of theories, practices, policies, and personal learning for organizational and industry growth. Existing literature in KM has focused on various aspects, but there has been limited attention given to knowledge transfer intention between young and old employees in engineering companies. This study intends to contribute to the KM framework by contextualizing the framework of knowledge transfer intention and exploring employees' behavior in the process. The findings may provide valuable insights for organizations in the engineering sector, as well as other industries, non-profit organizations, individuals, learning institutions, and researchers.

OBJECTIVES

This study aims to investigate the various influential factors that affect knowledge transfer between young and old employees in an engineering company, with the ultimate goal of offering insights and actionable recommendations to improve knowledge sharing and collaboration within the organization. To achieve this, this study focuses on individual personality traits linked to critical success factors (CSFs) and tacit knowledge within an engineering firm. The following research objectives were formulated:

- determine firms' commitment to organizational behavior, organizational culture, and organizational performance management;
- ensure effective knowledge transfer from older to younger employees and between different units within the organization;
- emphasize the importance of tacit knowledge, its recognition, and capitalization within the organization; and
- focus on psychological aspects embedded in knowledge transfer among employees and within the organization's management.

LITERATURE REVIEW

The knowledge framework aimed at understanding the production of knowledge on a complex system as a complex system itself, namely as a perspective with coevolving components within

interdependent knowledge domains (Raimbault, 2017). Knowledge is a source of a competitive economy and very significant to companies and their clients. Companies develop a knowledge transfer culture that is embedded in knowledge transfer and business strategy. This includes understanding of knowledge transfer and knowledge sharing, KM and team communication, the impact of sharing intention on knowledge transfer, organizational understanding of tacit knowledge, collaboration and social networks, organizational culture practice, and the management and influence of personality on employees' psychological level.

Understanding of Knowledge Transfer and Knowledge Sharing

Szulanski (1996) defined knowledge transfer as a binary knowledge exchange between information sources and receivers. Knowledge transfer is a two-way relationship between the source (old employees) and the receiver (young employees) in construction bounds (Williams et al., 2018). The theory of knowledge transfer consists of factors affecting knowledge transfer in an engineering company (Wang et al., 2014). Knowledge transfer is based upon an employee's willingness to share knowledge, so leaders should consider who is selected as a trainer to enhance the flow of knowledge (Cox & Overbey, 2022). Moreover, "knowledge transfer in organizations is the process through which one unit (e.g., individual, group, department, division) is affected by the experience of another" (Argote & Ingram, 2000). Therefore, for it to be successful, it requires all its elements that assist and hinder the flow of knowledge transfer. This study explores the concept understanding of knowledge framework, knowledge sharing and transfer, and KM and tackles the tacit knowledge concept in relation to the individual personality traits of employees' knowledge transfer intentions to discover the factors affecting young and old employees in the engineering and construction industry.

As knowledge has been widely recognized and accepted by the business world, organizational resource have become valuable (Arif et al., 2012). It is highly important to acknowledge and express the importance of tacit knowledge and explicit knowledge. Furthermore, Raimbault (2017) inductively built a framework that considered knowledge enterprises as perspectives, with co-evolving components within complementary knowledge domains. Knowledge sharing among individuals produces new experiences (Ahmad, 2017), as one may lose a competitive advantage over another by divulging valuable knowledge. Both knowledge recipients and knowledge providers face the same risks in terms of competition and information quality, which may be communicated within an organization with potentially bad intentions.

Older workers must be conscientious at all times about their influence on their younger counterparts. Senior workers must set an example for younger workers by approaching knowledge transfer networks with positive attitudes and perspectives. Knowledge transfer and the sharing of information between co-workers are both of high importance for the industry. When an organization supports open sharing between co-workers, a successful exchange of relevant knowledge lowers costs and sparks ideas. There has been a shortage of skills observed in the South African business skills sector and in state-owned organizations and departments (Mbande, 2010). Although it has been suggested that the industry put more emphasis on further education and training programs to increase skills knowledge within the industry, the current system is not enough to support the needs of the industry. It is therefore imperative for government, industry experts, education centers, and other stakeholders to find other solutions to the problem regarding the lack of skills and development.

KM and Team Communication

The definition of KM could change from company to company, even from initiative to initiative. Researchers now consider knowledge as a management asset within the construction industry that can be used to improve the competitive edge of organizations (Kant & Singh, 2011; Kasimu et al., 2012). KM is recommended to be used consistently, focusing on acquiring, storing, diffusing, and implementing knowledge that organizations can exploit to achieve their business objectives both inside and outside organizational boundaries (Alghail et al., 2017). Knowledge is acquired through

experience, reasoning, intuition, and learning, and consequently, a knowledge-rich organization is one that optimizes the process of sharing and applying knowledge to achieve its operational and strategic goals. A knowledge organization is one in which KM has been embedded in the organizational strategy to create a sustainable competitive advantage to encourage innovation (Saini et al., 2018). Thus, the integration of KM into company strategies becomes an important power for the success of the organization in order to respond to environmental changes (Giampaoli et al., 2017). The five stages of the model of knowledge transfer and innovation decision concept by Williams et al. (2018) consist of knowledge, persuasion, decision, implementation, and confirmation. Sun and Ren (2014) observed that when construction companies mostly worked on temporary projects that were unique in nature to other projects, a gap in knowledge occurred. There was no information gained or lessons learned/lost at the end of a project. In the case of individual knowledge transfer, some researchers reported it as an exchange that can be focused or unfocused (Paulin & Suneson, 2011). An organization's successful implementation of KM aspects can deeply improve the knowledge transfer framework (Saini, 2015). Web-based and intranet technologies have already been efficiently and systematically collecting and sharing experiences within the knowledge processes that already set up an organization for KM (Chen & Zhang, 2014). What all organizations want is to learn and create a learning environment through the KM discipline that continuously fosters the creation of useful knowledge for both organizational and personal knowledge to activate and achieve innovation, smart business value, and enhanced performance and development effectively (Alghail et al., 2017).

KM has been regarded as a key factor in enhancing organizational performance in organizations across the globe. Its pivotal role is more pronounced in knowledge-intensive organizations such as those involved in research and development. A more vital strategic role played by the clarity and a distinct classification where organizations embark on KM initiatives involving leveraging, knowledge transformation and resource allocations (Abbas, 2016). In general, KM processes ensure that firm proceeds with KM that is business-critical and more visible through its activities efficiently Ejerulo Eresia-Eke and Stanford (2014).

Team communication is enhanced through KM within engineering projects in addressing specific designs and simulation tools, while engineers align with South Africa's National Development Plan process approach through the effective use of these tools and provide a multi-employee workflow within an organization (Marion & Fixson, 2021). The process of creating knowledge originates from socialization, facilitation, and interaction between employees, which initiates the creation and transferring of tacit knowledge in organizational workflows in the context of the impact of knowledge transfer between younger and older employees (Ganguly et al., 2019).

Many factors may come into play when different generations find themselves working together and interacting. Effective KM seeks to transform tacit knowledge into explicit knowledge for storage and dissemination across an organization. As defined by Saini (2015), KM is the process of identifying, transferring, and sharing knowledge effectively to support other processes within organizations to all places required anytime. This is seen by the researcher to be the driving factor for perception of exchange, since authors argue about tacit knowledge that is perceived as difficult to codify and personalize, as it is embedded within ideas, values, and emotions that can speed up the process of knowledge transfer (Ganguly et al., 2019).

Knowledge Sharing Intention and Knowledge Transfer

As argued by many researchers, the high levels of selfish behavior of employees towards knowledge-sharing engagements or knowledge keepers may drive other employees to practice kindness and willingness to share and transfer knowledge without expecting the same treatment (Koay et al., 2020). Through daily interactions in the workplace, one individual may develop strong emotional bonds and be comfortable with fellow employees, and on the other hand, trust among one another develops while others do not pose any information about one other it is unclear what is meant (Koay et al.,

2020). These researchers have acknowledged that knowledge-sharing behavior and tacit knowledge behavior are significantly influenced by affective-based trust.

Knowledge sharing between co-workers is essential for organizations. Open sharing of relevant knowledge has the potential to lower costs and optimize processes, whereas a lack of sharing may harm organizations and even render their processes ineffective. Thus, it comes as no surprise that knowledge sharing is studied extensively in the literature.

Accessing the knowledge between co-workers is only possible through the active participation of the people carrying this knowledge. Wah et al. (2018) found that in order for others to benefit, individual access to knowledge and its use to stimulate innovation should be based on mutual understanding. Motivational factors are important for sharing knowledge.

Organizational Understanding of Tacit Knowledge

Tacit knowledge is internal to an individual in the form of know-how, experience, or expertise (Hau et al., 2016). The challenge inherent in tacit knowledge is figuring out how to recognize, generate, share, and manage knowledge that resides in people's heads.

Implicit and inherent tacit knowledge have been referred to as the interactional perspective and the practice perspective (Hadjimichael & Tsoukas, 2019). Implicit tacit knowledge is the part of tacit knowing how to do things that you can describe to others (Mitchell et al., 2022). Effective transfer of tacit knowledge generally requires extensive personal contact and trust. It is transferred through demonstration and on-the-job training. Tacit knowledge involves knowing how and is by nature difficult to describe. It can be demonstrated, but is rarely codified and resides with its holder. A motivated holder of this knowledge is most eager to coach or mentor younger employees willingly because of his expertise and knowledge of the company. A distinct and on point explanation by one researcher explains it as a series of experiences, learning, sensing, analyzing, witnessing, and observing timeously through thoughts and views of an individual's mind exploring tacit knowledge (Saini, 2015). Arif et al. (2012) confirmed that tacit knowledge, in relation to the learning process, has shown tremendous relevance in the process model of knowledge sharing and transfer within organizations. The researcher continued to prove the relation of tacit knowledge through the table of CSFs (Table 1; Saini et al., 2018) and the flexibility of individual traits within systems and strategies of the organization. Based on their recent research, organization within the critical factors has been matched with organizational systems and personal traits. The personality traits include openness, conscientiousness, extraversion, agreeableness, and neuroticism. Han (2018) further showed relations to knowledge transfer intentions of employees on the five personality traits, which were assumed to be better suited to the tacit knowledge concept framework, which opens up a new study on the matter.

Table 1 shows the research study through CSFs, organizational processes, and personality traits. It was assumed that personality traits were some of the factors affecting knowledge transfer. This study utilized the 10 CSFs to measure knowledge transfer between young and old employees.

Table 1. CSFs, Personality Traits and Organizational Environment

CSFs	Personality Traits	Organizational Environment
Trust between organizations	Openness	Honest communication
Motivation to share tacit knowledge	Extraversion and agreeableness	Culture trust
Leadership capabilities	Conscientiousness	Leadership capabilities
Business strategies	Conscientiousness	Culture trust
Organizational capabilities	Openness	Honest communication
Employee involvement	Openness and agreeableness	Culture trust

continued on following page

Table 1. Continued

CSFs	Personality Traits	Organizational Environment
Process improvement	Conscientiousness	Leadership capabilities
Type of knowledge	Openness	Leadership capabilities
Source of knowledge	Conscientiousness	Honest communication
Recipient of knowledge	Extraversion and openness	Leadership capabilities

Note. CSFs = critical success factors. Source: Saini et al., 2018.

This study focused on young and old employees through a platform created based on organizational objectives, CSFs, and individual positive personality traits to ascertain positive knowledge transfer intentions among artisans within a company. Williams et al. (2018) acknowledged and confirmed that the field of innovation has opened the concept of knowledge transfer. Knowledge lost from previous skilled employees can be shared with current young employees (Saini, 2015).

Five main challenges have been highlighted by Ekambaram et al. (2014), namely, a lack of incentives for knowledge sharing, negative attitudes, low stability or continuity in collaborating knowledge within organizations, time pressure, and inadequate information systems. Timely knowledge transfer is necessary (Sun & Ren, 2014). Therefore, the responsibility lies with the knowledge sharing process within organizations in the construction industry. In this case, the investigation was between young and old employees, where the source was the old employees as information holders, and the young employees represented recipients who were the final destination of knowledge. In a social setting, critical knowledge should be identified to them to make use of knowledge transfer systems to acquire that knowledge needed (Williams et al., 2018). Ganguly et al. (2019) argued that tacit knowledge sharing at the organizational level plays a huge role, that social capital plays a role within, and that structural and cognitive social capital have a significant impact in making tacit knowledge sharing a success.

Malamed (2020) provided an in-depth understanding of tacit knowledge transfer to drive skills needed to create quick innovative designs for successful organizational development and competitiveness. As noted by many researchers across the world, tacit knowledge has aspects of skills that are highly difficult to articulate or transfer to other people with spoken language. This knowledge, as previously explained, is referred to as implicit or tacit knowledge.

This knowledge gap can be costly and time-consuming or impossible to bridge (Mbuyisa & Leonard, 2017). It is important to collect and disseminate expert tacit knowledge for each organization's own protection. Thirdly, an organization's processes and procedures should ensure that tacit knowledge is embedded to encourage continuous improvement. Without realizing it, tacit knowledge can be overwritten and lost. This can be avoided by identifying and raising awareness of an organization's tacit knowledge stock and making it explicit through KM strategies.

Collaboration and Social Networks

Collaborative communities should be enhanced in order to provide learning opportunities and exposure to new ideas. Three essential factors of effective collaborative communities include leadership, trust, and collaboration, as these are the most influential problem-seeking and solving characteristics among employees within organizations (Saini et al., 2018). Hinojo-Lucena et al. (2020) stated that using virtual networks improves learning processes better than social networks that favor collaboration. This is a strategy to make an individual's work visible for others to see. With this in mind, the intention of transferring tacit knowledge is embedded in work done. This strategy provides a superficial procedure into the deeper aspects of a person's expertise.

Personal narrative is one of the most powerful forms of communication that exists in narrating a good story (Suzuki et al., 2018). Not surprisingly, organizing stories is considered an effective way to acquire and disseminate tacit knowledge. These stories turn information into organizational knowledge. They also provide context that gives meaning to the fact. Through structured interviews, stories can be captured from employees preparing to retire and from subject matter experts. Most organizations officially engage processes for recording lessons learned so that others who did not participate can benefit from these experiences. Lessons learned become realistic and relevant case studies and are more efficient than storytelling. This is another effective way to spread knowledge gained from experience. Leonard et al. (2013) identified a deep mentoring approach based on observation, practice, partnering, joint problem solving, and taking responsibility. This strategy is useful in acquiring tacit knowledge through guided experience.

Organizational Culture Practice and Management

Capelo (2013) defined this as a role in organizations that concerns internal interaction, the feeling of belonging (or not), and commitment regarding the creation of a competitive environment. He referred to it as the development of the social glue that binds the organization together. Knowledge culture contributes to the organizational knowledge base by considering support, facilitating learning, and fostering innovation by encouraging employees to enhance customer value (Intezari et al., 2017). In addition, Intezari et al. (2017) emphasized that culture has been defined as a lasting set of assumptions, beliefs, and values that describe organizations and their members. At the deepest level, culture consists of values that are tacit preferences of what the organization should strive towards and how it should do so. For example, an organization can promote openness and trust as core values to stimulate innovation. Values are often difficult to articulate and even more difficult to change (Tounkara, 2019). Their impact on knowledge creation, transfer, and application is manifested in behaviors.

While norms are generally derived from values, they are more observable and easier for employees to identify. Thus, they are more susceptible to change. An example is in an organization, the social norms governing the way individuals should interact to share knowledge (Tounkara, 2019). Tounkara (2019) further studied the impact of organizational culture in the context of social interaction, which can be observed with the existing norms and practices associated with important core values. Examples of these values include interactivity, collaboration, orientation of collective knowledge (vs. individual knowledge), orientation towards existing knowledge, and expertise. Organizational behavior is influenced by organizational culture, patterns of common assumptions, values, beliefs, and attitudes (Intezari et al., 2017). Additionally, it has been found that requirements established by governmental agencies for information management, such as copyright and freedom of speech, play a key role in information culture.

Wright (2013) investigated information culture in government organizations and concluded that a culture of collaboration and openness resulting in information sharing ensures more informed decision-making. Svärd (2014) also found that information culture influences core management practices. Most countries generate wealth and improve the quality of life through the critical role played by the construction industry. South Africa is not different when looking at the government's socio-economic policies on social and economic infrastructure development. Organizational culture is one of the main determinants of the many aspects of an organization's life, such as organizational success, attractiveness, innovation, safety, leadership, productivity, performance, and effectiveness. Employees' attitudes and behaviors in the workplace impact organizational culture and play a critical role in how culture affects the success or failure of KM and knowledge transfer initiatives (Intezari et al., 2017).

Influence of Personality on Employees' Psychological Level

Bakker et al. (2019) found that in order for individuals to better deal with challenging environments, there were certain strengths of character they should have to facilitate social networks and performance,

such as creativity, social intelligence, and bravery. Personality is defined as "the scientific study of psychological individuality" (McAdams & Olson, 2010, p. 518). Individual personalities may refer to relatively enduring personal characteristics in the sense of generalized and basic conduct tendencies within work engagements. Some people show signs of work engagement, but others exhibit little or no signs of work engagement while working under similar conditions. However, personality plays a role in the engagement process because individuals enter the workplace with their own set of personality characteristics. Previous studies have failed to notice a possibility that strength may not be equally used by all individuals effectively, based solely on character strength and its use. Informed decisions by human resources management should make sure which personalities are associated with profit and innovation from individual strength use (Bakker et al., 2019).

The five-factor model of personality, often termed the "big five" personality framework by previous researchers, provides one of the most prominent models in contemporary psychology to describe the most salient of personality features. This title "big five" is selected not to reflect their intrinsic greatness but to emphasize that each of the factors is extremely broad (Zaidi et al., 2012). These big five personality dimensions are categorized as extraversion, agreeableness, conscientiousness, openness, and neuroticism (Zaidi et al., 2012).

Extraversion as an individual's personality trait is defined as being talkative in nature with high energy levels. This indicates an individual who engages experiences with enthusiasm and other positive emotions with the external world (Ali, 2019). This refers to outgoing tendencies of an individual who possesses assertiveness, is pro-active, and has a highly engaging personality in both large and small groups and gatherings. Additionally, this personality trait is where one finds individuals with high levels of energy, who are very upbeat and exhibit a high level of optimism (Agbaria & Mokh, 2022).

Agreeable individuals are better at balancing opposites and place a high emphasis on social harmony, honesty, collaboration, and trustworthiness. Some researchers have studied the relationship between the agreeable trait and organizational performance, interpersonal facilitation, and discretionary behavior (Patnaik, 2020; Van Scotter & Van Scotter, 2021). Furthermore, these are individuals with an optimistic view of life, generally. However, other researchers have found agreeableness to influence job performance when collaboration and cooperation among workers are essential (Teh, 2011). Conscientious individuals are regarded as highly purposeful, determined, and strong-willed and are associated with occupational achievements, as they work very hard (Agbaria & Mokh, 2022). These individuals possess the ability to plan the quality of persistence and are achievement-oriented, as defined by Ali (2019). This applies to an individual who shows willingness and opens themselves up to new experiences of learning, is creative yet vulnerable, and shows an ability to try new things (Prakash Pillai, 2020). Individuals who score high on being open to experience tend to be creative, imaginative, cultured, curious, intelligent, and artistically sensitive (Schwaba et al., 2018; Xu et al., 2021). Some scholars concluded that neuroticism's positiveness is correlated with perceived stress. Therefore, these individuals are generally more prone to experiencing psychological distress as their subversive emotions interfere with their adaptation process (Agbaria & Mokh, 2022). Further, the inclination to experience negative emotions is often associated with anxiety, hostility, poor social skills, and depression (Yahaya et al., 2012).

The literature review has revealed essential aspects that hinder knowledge transfer, in general, as researchers have alluded to. It has been highlighted that key factors that point to engineering problems in terms of transferring knowledge among workers are mainly regarding transfer between younger and older workers within an organization. Even though there is progress in improving organizational culture to transfer knowledge within an organization, it is evident that it is a huge step back for the industry, and its development remains a concern. It is noteworthy that the primary purpose of knowledge transfer is to circulate the flow of KM efficiently within the organization while increasing a competitive skills advantage and members' abilities to respond quickly.

METHODS

This study employed a quantitative approach, specifically utilizing a positivist research approach. Quantitative methodology focuses on quantifying social situations to collect and analyze numerical data and establish relationships between variables (Antwi & Kasim, 2015). Simple random sampling was used to select the participants from the engineering company in the Western Cape, South Africa. This sampling method ensured each unit in the population had an equal chance of inclusion, providing an unbiased representation of the population if it is homogeneous. Participants were selected from all sections of an engineering firm, including managers and shopfloor employees. The total population of the company consisted of 120 members. A target population of managers and shop floor employees was selected for the study. A sample of 100 employees was chosen from the target population, but due to time constraints, 71 out of 100 employees participated in the study. The selected departments included operators, managers, clerks, artisans, and other employees. A semi-structured questionnaire was distributed to the participants through the general manager of the organization.

To ensure the study's reliability, a reliability test using Cronbach's alpha was conducted. Cronbach's alpha is a widely used measure of reliability, quantifying the degree of correlation between items on an instrument. Acceptable values of alpha range from 0.70 to 0.95, with a lower value indicating a low number of questions, poor inter-relatedness between items, or heterogeneous constructs (Tavakol & Dennick, 2011). Therefore, a reliability test was conducted on all statements included in the measuring instrument to ensure the reliability of the study.

Ethical considerations were taken into account throughout the research process. Research ethics codes were followed, which prohibit deceptive practices, coercion, plagiarism, falsification of data and results, and the concealment of findings. The protection of participants was prioritized, and necessary standards were implemented to ensure their well-being. Participants were fully informed in writing about the study details and had the right to choose whether to participate, decline participation, or withdraw from the study at any time.

DATA COLLECTION

This research was conducted in a medium-sized manufacturing company in South Africa, focusing on the production unit and encompassing various roles such as managers, supervisors, operators, clerks, maintenance, and other personnel. A total of 71 respondents from the company provided truthful and comprehensive responses to a survey questionnaire. The questionnaire aimed to gather information about the environment, individual personality factors, employee knowledge transfer intentions, and organizational KM in the engineering business. Paper surveys were used; however, response rates in paper-based cross-sectional studies have declined in recent years, increasing the risk of selection bias (Ebert et al., 2018). The questionnaires were categorized into key issues, including psychological aspects, tacit knowledge, and CSFs. Data organization involved the use of frequency distributions and graphs to identify patterns. Likert scales were used to rate the responses, allowing for statistical analysis and comparisons to understand the study objectives.

The data organization involved using frequency distributions and graphs to present the collected data and identify patterns. Frequency distribution was used to establish associations between variable values based on their frequencies. Twenty-eight (28) statements (Q1-Q28) were prepared for the study. Likert scales were used, and the ratings provided, as indicated in Table 2, were applied. This measuring tool contained a list of research statements comprising the scale to express a belief, preference, perception, judgment, or opinion. This type of scale contains a series of statements that explains and determines the content and meaning of the construct to be measured. The ratings were based on the level of agreement, from strongly disagreed (1) to strongly agreed (5).

Table 2. Categorical Items Coded

No.	Statements	Coded
1	I am encouraged by our management to share knowledge with other employees.	Q1
2	I am willing to share knowledge with other employees.	Q2
3	Our management considers and prioritizes knowledge transfer as part of our organizational culture.	Q3
4	I trust my co-workers, and it makes me willing to transfer my knowledge effectively.	Q4
5	I have time for sharing and transferring my knowledge to other employees.	Q5
6	Our organization has information systems to enable me to transfer knowledge to other employees.	Q6
7	I am always open to new ideas and suggestions from other employees.	Q7
8	I am mindful of details, quick on making decisions, and plan ahead.	Q8
9	I work well with other employees and tend to be enthusiastic in social situations.	Q9
10	I tend to be more co-operative and agree with other employees at all times.	Q10
11	I always show my emotions and anxiety during stressful times.	Q11
12	Employees show support of each other during work projects.	Q12
13	Employees transfer knowledge willingly during projects to others.	Q13
14	Employees are more prepared to work with each other to finish tasks.	Q14
15	Employees show willingness to multi-skill across jobs/departments.	Q15
16	Employees respect and trust each other to complete projects.	Q16
17	Management provides a positive social organizational culture.	Q17
18	Our organization encourages internal social platforms to improve communication among employees.	Q18
19	Management employs experienced and knowledgeable leaders with compatible skills.	Q19
20	Our organization treats all employees as equals.	Q20
21	There is management understanding of self-directed teams.	Q21
22	Management solves conflict effectively and efficiently within the organization.	Q22
23	Our organization promotes collaboration and lessons learned.	Q23
24	I develop personal knowledge easily when I am familiar with other employees.	Q24
25	I share personal knowledge that leads to the development of work procedures.	Q25
26	Tasks and activities related on-job training are observed, cleared, and communicated to employees.	Q26
27	I am allowed to voice my opinions on issues concerning my work.	Q27
28	I always follow instructions and directions without question.	Q28

Data analysis was conducted to evaluate the influence of psychological characteristics and tacit knowledge on the readiness of older workers to transfer their expertise. The data collected from questionnaires was analyzed, coded, and entered into a database using Statistical Package for the Social Sciences software. Descriptive statistics and inferential statistics were performed to determine central and dispersion values, evaluate significant changes between groups, and identify factors affecting knowledge transfer. Demographic characteristics were categorized, analyzed, and interpreted on a nominal scale, and visual representations in pie and bar charts were created (Leedy & Ormrod, 2015).

RESULTS AND DISCUSSION

Numerical Results

The research results showed that male participants (n1 = 55) accounted for 77% of the sample, while female participants (n2 = 16) accounted for 23%. This reflects the dominance of men in the engineering field in South Africa, although these statistics are specific to the organization studied.

Regarding age groups, participants were distributed as follows: 32.4% were between 25 and 35 years old, 29.6% between 36 and 45 years old, 28.2% between 46 and 55 years old, and 9.9% were above 55 years old. The educational level of participants was relatively high, with 45.1% holding college certificates and 9.9% being university graduates. Approximately 41% completed high school, while 1.4% had completed primary education or less, and 2.8% fell into other categories. In terms of field experience, 78.9% had more than five years of experience, while 21.1% had up to four years of experience. The participants were primarily operators (52.1%), followed by supervisors (20%), clerks (17%), interns/practitioners (4%), and others (7%). The age range of participants was from 25–55 years, with a focus on the 46–55 age group that is close to retirement. Strategies should be implemented to facilitate knowledge transfer and mentorship from this group to younger employees. The participants' educational levels indicated a potential for competitiveness and innovation in the industry. Most respondents (78.9%) had been in their current positions for more than five years. The majority (72%) were identified as operators and supervisors.

The reliability of the questionnaire was confirmed by a Cronbach's alpha coefficient of 0.904 for all 28 items. This indicates high internal consistency. Table 3 presents the results of scale mean if item deleted, scale variance if item deleted, corrected item-total correlation, squared multiple correlation, Cronbach's alpha value, and standard deviation (σ). The values of Cronbach's alpha ranged from 0.895–0.912, indicating excellent internal consistency. The mean results per variable are shown in Table 3, with a standard deviation (σ) ranging from 0.599–1.341.

To promote growth and development, it is important for organizations to incorporate business strategies, practices, and procedures that facilitate knowledge transfer. Factors influencing knowledge transfer between young and old employees, particularly related to tacit knowledge and individual psychological factors, need further exploration. Managing, organizing, and sharing information effectively is crucial for successful knowledge transfer in an organization (Farabough, 2021). Organizational culture, as identified by Tounkara (2019), involves observation of social interaction with existing norms and practices. The values of organizational culture are interactivity, collaboration, orientation of collective knowledge, and expertise (Tounkara, 2019).

Table 3. Item Total Statistics

No.	Scale mean if item deleted	Scale variance if item deleted	Corrected item- total correlation	Squared multiple correlation	Cronbach's alpha if item deleted	σ
Q1	100.65	201.289	0.580	0.835	0.899	1.011
Q2	100.10	214.804	0.194	0.712	0.905	0.651
Q3	100.97	198.571	0.642	0.776	0.897	1.063
Q4	100.70	203.497	0.512	0.801	0.900	0.990
Q5	100.44	211.935	0.293	0.636	0.904	0.755
Q6	101.21	194.340	0.687	0.756	0.896	1.208
Q7	100.10	212.833	0.269	0.537	0.904	0.714
Q8	100.15	214.990	0.204	0.542	0.904	0.599
Q9	100.25	214.335	0.221	0.627	0.904	0.646

continued on following page

Table 3. Continued

No.	Scale mean if item deleted	Scale variance if item deleted	Corrected item- total correlation	Squared multiple correlation	Cronbach's alpha if item deleted	σ
Q10	100.96	209.184	0.242	0.663	0.906	1.189
Q11	101.87	220.255	-0.078	0.585	0.912	1.090
Q12	100.77	205.206	0.486	0.703	0.901	0.925
Q13	100.80	203.361	0.574	0.827	0.899	0.902
Q14	100.63	201.950	0.588	0.784	0.899	0.961
Q15	100.75	201.335	0.582	0.742	0.899	1.004
Q16	100.83	201.400	0.602	0.822	0.898	0.970
Q17	101.25	191.878	0.729	0.825	0.895	1.260
Q18	101.20	195.961	0.608	0.740	0.898	1.256
Q19	101.31	193.617	0.737	0.791	0.895	1.168
Q20	101.69	190.074	0.732	0.849	0.895	1.341
Q21	101.13	200.569	0.684	0.745	0.897	0.906
Q22	101.11	196.673	0.630	0.765	0.897	1.181
Q23	101.20	200.989	0.615	0.760	0.898	0.975
Q24	100.39	211.357	0.339	0.672	0.903	0.717
Q25	100.41	213.845	0.213	0.472	0.905	0.730
Q26	100.68	203.651	0.504	0.591	0.900	0.994
Q27	100.69	206.960	0.358	0.637	0.903	1.055
Q28	100.96	205.555	0.347	0.631	0.904	1.201

Table 4 presents the correlation matrix, indicating the significance levels of the correlations. One star ("*") denotes a significant correlation at the 0.05 level (2-tailed), while two stars ("**") indicate significance at the 0.01 level (2-tailed). Significant correlations were observed between individual management encouragement to share knowledge (Q1) and several items, including Q2, Q5, Q8, Q15, Q22 (at the 0.05 level), and Q13, Q14, Q16-Q21, and Q23-Q25 (at the 0.01 level). However, Q11 showed a significant negative correlation with Q1 (at the 0.05 level). Q2 exhibited significant correlations only with Q5, Q14, Q25, and Q28. No significant correlations were found between Q3 (management considering and prioritizing knowledge transfer as part of organizational culture) and items Q5, Q7-Q11, Q24, Q25, and Q28.

Similarly, Q4 did not show significant correlations with items Q5, Q9-Q12, and Q25-Q28. Q5 did not have significant correlations with Q6, Q11, Q13, and Q16-Q28. Q6 showed no significant correlations with Q7-Q11, Q24, Q25, and Q28. Q7 had no significant correlations with Q8-Q15, Q18-Q23, and Q25-Q28. Q8 exhibited significant correlations with Q9, Q16, and Q24, while other items did not show significant correlations. Q9 showed significant correlations with Q10 and Q24, but not with other items. Q10 had significant correlations with Q24 and Q28, while other items did not show significant correlations. Q11 had negative significant correlations with Q14 and Q18 but no significant correlations with other items. Q12 showed significant correlations with Q13-Q18, Q20-Q23, and Q26, while not exhibiting significant correlations with other items.

Table 4a. Inter-Item Correlation Matrix

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Q2	0.278*												
Q3	0.592**	0.216											
Q4	0.631**	0.059	0.406**										
Q5	0.277*	0.256*	0.226	0.158									
Q6	0.469**	0.080	0.581**	0.388**	0.217								
Q7	0.313**	0.113	0.197	0.377**	0.340**	0.205							
Q8	0.270*	0.129	0.153	0.411**	0.263*	0.114	0.084						
Q9	0.106	-0.042	0.021	0.136	0.270*	0.206	0.179	0.296*					
Q10	0.079	0.185	0.176	0.037	0.311**	0.048	0.202	0.209	0.329**				
Q11	-0.296*	-0.217	-0.148	-0.187	0.014	-0.046	-0.143	-0.044	0.017	0.125			
Q12	0.210	-0.048	0.303*	0.170	0.285*	0.451**	0.129	-0.048	-0.008	0.105	0.076		
Q13	0.385**	0.168	0.314**	0.458**	0.150	0.485**	0.087	0.183	0.105	-0.156	-0.018	0.572**	
Q14	0.509**	0.236*	0.531**	0.380**	0.406**	0.280*	0.173	0.125	0.128	0.200	-0.280*	0.449**	0.541**
Q15	0.294*	0.110	0.370**	0.390**	0.238*	0.289*	0.200	0.150	0.067	0.178	0.000	0.435**	0.613**
Q16	0.545**	-0.140	0.543**	0.525**	0.203	0.581**	0.285*	0.240*	0.043	0.105	0.056	0.525**	0.464**
Q17	0.346**	0.135	0.533**	0.345**	0.123	0.622**	0.251*	-0.019	0.144	0.111	-0.168	0.364**	0.393**
Q18	0.317**	0.208	0.424**	0.283*	0.191	0.497**	0.062	0.064	0.069	0.155	-0.271*	0.326**	0.318**
Q19	0.503**	0.125	0.568**	0.414**	0.190	0.574**	0.199	0.074	0.216	0.135	-0.11	0.209	0.357**
Q20	0.414**	0.167	0.654**	0.460**	0.016	0.619**	0.122	0.065	0.046	0.183	0.002	0.324**	0.329**
Q21	0.462**	0.111	0.544**	0.308**	-0.019	0.471**	0.146	-0.017	-0.015	0.215	-0.092	0.350**	0.427**
Q22	0.296*	0.021	0.319**	0.336**	0.015	0.588**	0.172	-0.001	0.114	-0.055	0.032	0.285*	0.465**
Q23	0.380**	-0.182	0.408**	0.321**	0.130	0.556**	0.019	0.058	0.090	-0.071	0.081	0.388**	0.361**
Q24	0.355**	-0.018	0.148	0.296*	0.224	0.112	0.291*	0.302*	0.564**	0.297*	0.05	0.141	0.174

continued on following page

Table 4a. Continued

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Q25	0.308**	0.297*	0.064	0.090	0.197	0.067	0.079	0.049	0.018	-0.011	-0.047	0.113	0.187
Q26	0.147	0.215	0.348**	0.172	-0.019	0.426**	-0.046	0.078	-0.056	0.143	0.086	0.238*	0.352**
Q27	0.137	0.108	0.246*	-0.141	-0.069	0.249*	-0.034	0.015	0.142	0.096	0.226	0.192	0.223
Q28	0.043	0.238*	-0.005	0.121	-0.007	0.136	0.017	0.029	0.178	0.410**	0.113	0.143	0.136

Table 4b. Inter-Item Correlation Matrix

	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27
Q2														
Q3														
Q4														
Q5														
Q6														
Q7														
Q8														
Q9														
Q10														
Q11														
Q12														
Q13														
Q14														
Q15	0.682**													
Q16	0.347**	0.271*												
Q17	0.384**	0.407**	0.513**											
Q18	0.495**	0.450**	0.210	0.640**										
Q19	0.487**	0.430**	0.515**	0.693**	0.520**									
Q20	0.348**	0.311**	0.468**	0.624**	0.494**	0.678**								
Q21	0.495**	0.466**	0.379**	0.530**	0.560**	0.610**	0.634**							
Q22	0.217	0.384**	0.431**	0.692**	0.407**	0.641**	0.641**	0.508**						
Q23	0.272*	0.274*	0.558**	0.651**	0.414**	0.595**	0.561**	0.447**	0.662**					
Q24	0.204	0.182	0.169	0.194	0.168	0.221	0.201	0.105	0.078	0.115				
Q25	0.199	0.156	0.059	0.149	0.062	0.071	0.050	0.199	0.084	0.240*	0.058			
Q26	0.186	0.308**	0.368**	0.530**	0.377**	0.481**	0.547**	0.357**	0.482**	0.427**	0.047	0.103		

continued on following page

Table 4b. Continued

	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27
Q27	0.188	0.207	0.050	0.213	0.273*	0.316**	0.352**	0.462**	0.276*	0.254*	0.142	0.267*	0.163	
Q28	0.149	0.259*	-0.043	0.299*	0.457**	0.164	0.341**	0.344**	0.238*	0.113	0.261*	0.136	0.178	0.343**

All variances were used to calculate the mean in Table 5. Among general organizational factors, the mean score ranges from the lowest (3.25) to the highest (3.59), which indicates that organizational culture maturity is perceived as high. This conclusion can be drawn based on respondents' feedback. Knowledge transfer is seen as a high priority by individuals, with a response of 3.59 on the categorical questions. For example, the company's worst result of 3.25 is that it hires the least experienced and knowledgeable leaders with compatible skills. The lesson to learn from this is that management must demonstrate capable leadership by prioritizing the recruitment of knowledgeable leaders with an entrepreneurial mindset and an open-minded personality.

Table 5. Organizational Practices and Management Statements (n = 71)

No.	Items	Mean
Q19	Management employs experienced and knowledgeable leaders with compatible skills.	3.25
Q6	Our organization has information systems to enable me to transfer knowledge to other employees.	3.35
Q18	Our organization encourages internal social platforms to improve communication among employees.	3.37
Q22	Management solves conflict effectively and efficiently within the organization.	3.45
Q3	Our management considers and prioritizes knowledge transfer as part of our organizational culture.	3.59

Focusing more specifically on the perceived use of knowledge transfer practices, Table 6 indicates that best practices, documented processes, and on-the-job training are mostly used for knowledge transfer within the organization. This indicates a positive willingness to participate in the process of transferring knowledge. As Table 6 shows, mean results for knowledge transfer range from 2.87–3.92 for the 71 respondents for the category on knowledge transfer questions. Knowledge transfer participation willingness has a fairly positive mean but a disappointing influential component with the low result of 2.87. A positive component embedded in organizational culture, and KM has a high score of 3.92.

Table 6. Knowledge Transfer Practices With the Organization Statements (n = 71)

No.	Items	Mean
Q20	Our organization treats all employees as equals.	2.87
Q17	Management provides a positive social organizational culture.	3.31
Q23	Our organization promotes collaboration and lessons learned.	3.37
Q21	Management understands self-directed teams.	3.44
Q1	I am encouraged by our management to share knowledge with other employees.	3.92

The tacit knowledge focus score (4.46 shown in Table 7) shows that employees are willing to share their knowledge with others. Consequently, it is important to include tacit knowledge in the list of factors that positively influence learning and knowledge transfer in order to improve employees' skills and knowledge. Table 7 shows that employees had a positive on-the-job learning (tacit knowledge) value perception of 3.89 and a high sharing experience that led to an innovative procedures score of 4.15. There is also a high willingness (4.46) to share knowledge. Another set of items was based on each respondent's psychology and focused on their personality traits, which indicated the quality of the organization's individual characteristics, attitudes, or behaviors.

Individuals' abilities to make decisions against each other is revealed, as well as the relationship between younger and older employees within an organization, for the purposes of this study.

Table 7. Tacit Knowledge Transfer Statements (n = 71)

No.	Items	Mean
Q16	Employees respect and trust each other to complete projects.	3.73
Q13	Employees transfer knowledge willingly to others during projects.	3.76
Q12	Employees show support of each other during work projects.	3.79
Q15	Employees show willingness to multi-skill across jobs/departments.	3.82
Q4	I trust my co-workers, and it makes me willing to transfer my knowledge effectively.	3.86
Q27	I am allowed to voice my opinions on issues concerning my work.	3.87
Q26	Tasks and activities related to on-the-job training are observed and communicated to employees.	3.89
Q14	Employees are more prepared to work with each other to finish tasks.	3.93
Q5	I have time for sharing and transferring my knowledge to other employees.	4.13
Q25	I share personal knowledge that leads to the development of workplace procedures.	4.15
Q2	I am willing to share knowledge with other employees.	4.46

Employee Psychological Level of Decision-Making

Table 8 shows the employees' psychological level of decision-making statements from the 71 respondents. These are explained as follows:

- The lowest result of 2.69 is for neuroticism personalities.
- Agreeableness is represented by Q10 (3.61) and Q28 (3.61), respectively. Q8 with a rating of 4.41, shows the second-highest group of respondents, exhibiting a positive view of the organizational individual perception.
- Q24 at 4.17 represents the benefits of long-term associations that seek conscientious individuals.

Extraversion. Individuals are represented in Q9 with a rating of 4.31, which encourages social collaborations. Lastly, the openness rate of 4.46 is the highest and shows a positive outlook of the caliber of individual respondents that create a pleasant review for human resources practitioners, although it is not a selection tool for new employees to be a part and parcel of the recruitment process.

Table 8. Employee Psychological Level of Decision-Making Statements (n = 71)

No.	Items	Mean
Q11	I always show my emotions and anxiety during stressful times.	2.69
Q10	I tend to be more co-operative and agree with other employees at all times.	3.61
Q28	I always follow instructions and directions without question.	3.61
Q24	I develop personal knowledge easily when I am familiar with other employees.	4.17
Q9	I work well with other employees and tend to be enthusiastic in social situations.	4.31
Q8	I am mindful of details, quick to make decisions and plan ahead.	4.41
Q7	I am always open to new ideas and suggestions from other employees.	4.46

Interventions, Improvements, and Understanding. Management can choose to focus on specific concepts from this study's suggested framework as a starting point from after the responses were categorized. There is no doubt that managers need to drive tacit knowledge and organizational management interventions to affect the achievement and success of knowledge transfer. They should also exhaust their resources on mentoring groups, social group meetings, and interviews with experts, as well as on guided training to drive innovation, entrepreneurialism, and employee collaborations. Personnel managers must also pay attention to the kind of people they are bringing into the organization.

Proposed Improvements

To improve knowledge transfer intention and personal traits knowledge transfer between young and old employees in an engineering company, consider the following suggestions:

- Establish a formal mentoring program. Pair experienced older employees with younger ones to facilitate regular communication, knowledge sharing, and guidance. Develop personal traits necessary for effective knowledge transfer through this program.
- Create knowledge sharing platforms. Set up digital platforms or internal communication channels for easy knowledge and experience sharing. Encourage active participation from both young and old employees to foster a culture of continuous learning and knowledge exchange.
- Foster a learning culture. Promote a culture of learning and knowledge sharing within the organization. Recognize and reward employees who engage in knowledge transfer activities and encourage them to seek out learning opportunities.
- Conduct training on effective knowledge transfer. Provide training sessions focused on communication, mentoring, storytelling, and documentation to equip employees with the skills needed for successful knowledge transfer.
- Encourage intergenerational collaboration. Create opportunities for young and old employees to collaborate on projects or teams, fostering open dialogue and knowledge exchange.
- Develop personal traits through leadership programs. Offer leadership development programs that address traits like adaptability, active listening, and empathy to enhance employees' effectiveness in knowledge transfer.
- Evaluate and monitor knowledge transfer initiatives. Regularly assess the effectiveness of knowledge transfer efforts, collect feedback, and make necessary improvements based on the insights gained.

  Implementing these improvements will enhance knowledge transfer intention and promote the effective transfer of personal traits, leading to a collaborative and productive work environment.

CONCLUSION

In conclusion, this study showed the following.

Organizational Practices and Management

- A positive correlation was found between tacit knowledge and a willingness to collaborate and transfer knowledge among older workers.
- Effective organizational psychological management is crucial for employee-management relationships.

- Employees are eager to share knowledge, and the organization encourages knowledge transfer among its employees.

Knowledge Transfer Practices

- KM is emphasized as a key business strategy for organizational performance.
- The importance of managers sharing knowledge with employees is recognized.
- Governance mechanisms are developed to overcome obstacles to knowledge sharing.

Tacit Knowledge Transfer Development

- Tacit knowledge must be established as a driving force for knowledge transfer when training new workers.
- Organizational management should recognize employees with tacit knowledge and implement interventions for preserving knowledge and skills.

Employees' Psychological Level of Decision Making

- Psychological motivation among employees fosters a culture of collaboration and skill development.
- Challenges arise during recruitment to ensure that individuals with the right psychological mindset are hired.
- This study revealed employees' enthusiasm for collaboration and knowledge sharing.

Impact of Management on Knowledge Transfer and Tacit Knowledge

- On-the-job training is seen as an effective method for transferring tacit knowledge and skills.
- Employee-friendly organizations foster collaboration and healthy competition for skill development and innovation.
- Management should encourage tacit knowledge, provide interventions, and measure outcomes regularly.

Further research is needed on factors affecting the transfer of tacit knowledge between young and old employees, as is a comprehensive evaluation of influences on tacit knowledge transfer.

FUNDING STATEMENT

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. Funding for this research was covered by the author of this article.

COMPETING INTERESTS STATEMENT

The author of this publication declares there are no competing interests.

CORRESPONDING AUTHOR

Correspondence should be addressed to Bingwen Yan; yanb@cput.ac.za

ACKNOWLEDGMENT

The author acknowledges the late Mr. Vuyani Mtshikana, whose research formed the foundation of this paper and whose contribution is gratefully recognized.

REFERENCES

Agbaria, Q., & Mokh, A. A. (2022). Coping with stress during the Coronavirus outbreak: The contribution of big five personality traits and social support. *International Journal of Mental Health and Addiction*, *20*(3), 1854–1872. DOI: 10.1007/s11469-021-00486-2 PMID: 33500687

Ahmad, F. (2017). Knowledge sharing in a non-native language context: Challenges and strategies. *Journal of Information Science*, *44*(2), 248–264. DOI: 10.1177/0165551516683607

Alghail, A. A., Yao, L., & Kie, C. J. (2017). Importance of project-oriented organizational culture in knowledge management processes. *Global Journal for Research Analysis*, *6*(6), 400–403. https://umpir.ump.edu.my/id/eprint/21809/1/Importance%20of%20Project-oriented%20Organizational%20Culture.pdf

Ali, I. (2019). Personality traits, individual innovativeness and satisfaction with life. *Journal of Innovation & Knowledge*, *4*(1), 38–46. DOI: 10.1016/j.jik.2017.11.002

Antwi, S. K., & Kasim, H. (2015). Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European Journal of Business and Management*, *7*(3), 217–225. https://www.researchgate.net/publication/295087782_Qualitative_and_Quantitative_Research_Paradigms_in_Business_Research_A_Philosophical_Reflection

Argote, L., & Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behavior and Human Decision Processes*, *82*(1), 150–169. DOI: 10.1006/obhd.2000.2893

Arif, M., Khalfan, M. M. A., Barnard, J. H., & Heller, N. A. (2012). Assessing knowledge retention in construction organisations: Cases from the UAE. *Construction Economics and Building*, *12*(2), 55–71. DOI: 10.5130/AJCEB.v12i2.2461

Bakker, A. B., Hetland, J., Olsen, O. K., & Espevik, R. (2019). Daily strengths use and employee well-being: The moderating role of personality. *Journal of Occupational and Organizational Psychology*, *92*(1), 144–168. DOI: 10.1111/joop.12243

Berraies, S., Lajili, R., & Chtioui, R. (2020). Social capital, employees' well-being and knowledge sharing: Does enterprise social networks use matter? Case of Tunisian knowledge-intensive firms. *Journal of Intellectual Capital*, *21*(6), 1153–1183. DOI: 10.1108/JIC-01-2020-0012

Capelo, R. A. G. O. (2013). Organizational culture influence on information quality - use of business intelligence systems relationship: portuguese context [Dissertation]. http://hdl.handle.net/10362/9175

Chen, N., & Zhang, X. (2014). A dynamic observation capability index for quantitatively pre-evaluating diverse optical imaging satellite sensors. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, *7*(2), 515–530. DOI: 10.1109/JSTARS.2013.2293174

Cox, V., & Overbey, J. A. (2022). Generational knowledge transfer and retention strategies. *Development and Learning in Organizations*, *37*(4), 10–13. DOI: 10.1108/DLO-03-2022-0055

Ebert, J. F., Huibers, L., Christensen, B., & Christensen, M. B. (2018). Paper- or web-based questionnaire invitations as a method for data collection: Cross-Sectional comparative study of differences in response rate, completeness of data, and financial cost. *Journal of Medical Internet Research*, *20*(1), e24. DOI: 10.2196/jmir.8353 PMID: 29362206

Ejerulo Eresia-Eke, C., & Stanford, M. (2014). The role of knowledge management in organisational performance. *Conference: 15th European Conference on Knowledge Management*, 1240–1248. https://www.researchgate.net/publication/345676259_The_role_of_knowledge_management_in_organisational_performance

Ekambaram, A., Johansen, A., Langlo, J., & Rondon, P. (2014). Knowledge transfer – A means to manage the interplay between changes and time-usage in construction projects - SINTEF. *Proceedings of the 15th European Conference on Knowledge Management, Academic Conferences Publishing*, 288–296. https://www.sintef.no/en/publications/publication/1166994/

Farabough, M. C. (2021, April 5). *Implementation of national and statewide transportation knowledge management initiatives*. YouTube; Oklahoma Transportation Library. https://www.youtube.com/watch?v=CVfSTPDgmu8

Fasbender, U., & Gerpott, F. H. (2022). OUP accepted manuscript. *Work, Aging and Retirement*, *8*(2), 146–162. DOI: 10.1093/workar/waab017

Ganguly, A., Talukdar, A., & Chatterjee, D. (2019). Evaluating the role of social capital, tacit knowledge sharing, knowledge quality and reciprocity in determining innovation capability of an organization. *Journal of Knowledge Management*, *23*(6), 1105–1135. DOI: 10.1108/JKM-03-2018-0190

Giampaoli, D., Ciambotti, M., & Bontis, N. (2017). Knowledge management, problem solving and performance in top Italian firms. *Journal of Knowledge Management, 21*(2), 355–375. DOI: 10.1108/JKM-03-2016-0113

Hadjimichael, D., & Tsoukas, H. (2019). Toward a better understanding of tacit knowledge in organizations: Taking stock and moving forward. *The Academy of Management Annals*, *13*(2), 672–703. DOI: 10.5465/annals.2017.0084

Hau, Y. S., Kim, B., & Lee, H. (2016). What drives employees to share their tacit knowledge in practice? *Knowledge Management Research and Practice*, *14*(3), 295–308. DOI: 10.1057/kmrp.2014.32

Hinojo-Lucena, F.-J., Aznar-Díaz, I., Cáceres-Reche, M.-P., & Romero-Rodríguez, J.-M. (2020). Use of social networks for international collaboration among medical students. *Educación Médica*, *21*(2), 137–141. DOI: 10.1016/j.edumed.2018.08.009

Huie, C., Cassaberry, T., & Rivera, A. (2020). The impact of tacit knowledge sharing on job performance. *International Journal on Social and Education Sciences*, *2*(1), 2688–7061. https://files.eric.ed.gov/fulltext/EJ1264026.pdf

Intezari, A., Taskin, N., & Pauleen, D. J. (2017). Looking beyond knowledge sharing: An integrative approach to knowledge management culture. *Journal of Knowledge Management*, *21*(2), 492–515. DOI: 10.1108/JKM-06-2016-0216

Kant, R., & Singh, M. D. (2011). Knowledge management adoption in supply chain: Sectorial evidence from Indian manufacturing organisations. *Journal of Information & Knowledge Management*, *10*(01), 59–69. DOI: 10.1142/S0219649211002833

Kasimu, M. A., Amirudin, R., & Fadhlin, A. (2012). Knowledge management models in civil engineering construction firms in Nigeria. *Interdisciplinary Journal of Contemporary Research in Business*, *4*(6), 936–950. https://api.semanticscholar.org/CorpusID:107656890

Koay, K. Y., Sandhu, M. S., Tjiptono, F., & Watabe, M. (2020). Understanding employees' knowledge hiding behaviour: The moderating role of market culture. *Behaviour & Information Technology*, *41*(4), 1–18. DOI: 10.1080/0144929X.2020.1831073

Leedy, P. D., & Ormrod, J. E. (2015). *Practical research. planning and design*. Pearson.

Leonard, D., Barton, D., & Barton, M. (2013, April). Make yourself an expert. *Harvard Business Review*. https://hbr.org/2013/04/make-yourself-an-expert

Malamed, C. (2022, March 10). *Strategies for tacit knowledge transfer*. The ELearning Coach. https://theelearningcoach.com/learning/tacit-knowledge-transfer

Marion, T. J., & Fixson, S. K. (2021). The transformation of the innovation process: How digital tools are changing work, collaboration, and organizations in new product development*. *Journal of Product Innovation Management*, *38*(1), 192–215. DOI: 10.1111/jpim.12547

Mbande, C. (2010). Overcoming construction constraints through infrastructure delivery. *Proceedings 5th Built Environment Conference*. https://www.irbnet.de/daten/iconda/CIB_DC22752.pdf

Mbuyisa, B., & Leonard, A. (2017). The role of ICT use in SMEs towards poverty reduction: A systematic literature review. *Journal of International Development*, *29*(2), 159–197. DOI: 10.1002/jid.3258

McAdams, D. P., & Olson, B. D. (2010). Personality development: Continuity and change over the life course. *Annual Review of Psychology*, *61*(1), 517–542. DOI: 10.1146/annurev.psych.093008.100507 PMID: 19534589

Mitchell, V.-W., Harvey, W. S., & Wood, G. (2022). Where does all the "know how" go? The role of tacit knowledge in research impact. *Higher Education Research & Development*, *41*(5), 1664–1678. DOI: 10.1080/07294360.2021.1937066

Patnaik, S. (2020). Operationalizing employee performance: A literature review. *Training and Development Journal*, *11*(2), 45–56. DOI: 10.5958/2231-069X.2020.00006.2

Paulin, D. T., & Suneson, K. (2011). *Knowledge transfer, knowledge sharing and knowledge barriers-Three blurry terms in KM*. ResearchGate; unknown. https://www.researchgate.net/publication/286105137_Knowledge_transfer_knowledge_sharing_and_knowledge_barriers-Three_blurry_terms_in_KM

Prakash Pillai, R. (2020). *Happiness and personality traits of care professionals: A comparative analysis of nurses in Kerala*. Loyola Journal of Social Sciences.

Raimbault, J. (2017). *An applied knowledge framework to study complex systems*. ArXiv.org. https://arxiv.org/abs/1706.09244

Saini, M. (2015). *A framework for transferring and sharing tacit knowledge in construction supply chains within lean and agile processes* [Thesis]. DOI: 10.13140/RG.2.2.18911.53927

Saini, M., Arif, M., & Kulonda, D. J. (2018). Critical factors for transferring and sharing tacit knowledge within lean and agile construction processes. *Construction Innovation*, *18*(1), 64–89. DOI: 10.1108/CI-06-2016-0036

Schwaba, T., Luhmann, M., Denissen, J. J. A., Chung, J. M., & Bleidorn, W. (2018). Openness to experience and culture-openness transactions across the lifespan. *Journal of Personality and Social Psychology*, *115*(1), 118–136. DOI: 10.1037/pspp0000150 PMID: 28557472

Sun, J., & Ren, X. (2014). Research on the knowledge transfer of a construction project network. *ICCREM 2014: Smart Construction and Management in the Context of New Technolo*, 897–903. DOI: 10.1061/9780784413777.105

Suzuki, W. A., Feliú-Mójer, M. I., Hasson, U., Yehuda, R., & Zarate, J. M. (2018). Dialogues: The science and power of storytelling. *The Journal of Neuroscience : The Official Journal of the Society for Neuroscience*, *38*(44), 9468–9470. DOI: 10.1523/JNEUROSCI.1942-18.2018 PMID: 30381438

Svärd, P. (2014). The impact of information culture on information/records management. *Records Management Journal*, *24*(1), 5–21. DOI: 10.1108/RMJ-04-2013-0007

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*(2), 53–55. DOI: 10.5116/ijme.4dfb.8dfd PMID: 28029643

Teh, P. L., Yong, C.-C., Chong, C., & Yew, S. (2011). Do the big five personality factors affect knowledge sharing behaviour? A study of Malaysian universities. *Malaysian Journal of Library & Information Science, 16*(1), 47–62. https://www.researchgate.net/publication/266072066_Do_the_Big_Five_Personality_Factors_affect_knowledge_sharing_behaviour_A_study_of_Malaysian_universities

Tounkara, T. (2019). A framework to analyze knowledge management system adoption through the lens of organizational culture. *Artificial Intelligence for Engineering Design, Analysis and Manufacturing*, *33*(2), 1–12. DOI: 10.1017/S089006041900009X

Van Scotter, J. R.II, & Van Scotter, J. R. (2021). Does autonomy moderate the relationships of task performance and interpersonal facilitation, with overall effectiveness? *International Journal of Human Resource Management*, *32*(8), 1685–1706. DOI: 10.1080/09585192.2018.1542607

Wah, N. C., Zawawi, D., Nerina, R., & Sambasivan, M. (2018). The mediating effect of tacit knowledge sharing in predicting innovative behaviour from trust. *International Journal of Business and Society*, *19*(3), 937–954. https://www.researchgate.net/publication/329944132_The_mediating_effect_of_tacit_knowledge_sharing_in_predicting_innovative_behaviour_from_trust

Wang, Z., Wang, N., & Liang, H. (2014). Knowledge sharing, intellectual capital and firm performance. *Management Decision*, *52*(2), 230–258. DOI: 10.1108/MD-02-2013-0064

Williams, J. Frank, & Adinyira, E. (2018). A conceptual framework of knowledge transfer from the construction company to the host community. *10th CIDB Postgraduate Conference. Towards a Better Route to Enhanced Productivity, Performance, and Transformation of Construction*, 25–27. https://www.researchgate.net/publication/338685757_A_CONCEPTUAL_FRAMEWORK_OF_KNOWLEDGE_TRANSFER_FROM_THE_CONSTRUCTION_COMPANY_TO_THE_HOST_COMMUNITY

Wright, T. (2013). Information culture in a government organization. *Records Management Journal*, *23*(1), 14–36. DOI: 10.1108/09565691311325004

Xu, X., Soto, C. J., & Plaks, J. E. (2021). Beyond openness to experience and conscientiousness: Testing links between lower-level personality traits and american political orientation. *Journal of Personality*, *89*(4), 754–773. DOI: 10.1111/jopy.12613 PMID: 33346911

Yahaya, A., Yahaya, N., Bon, A. T., Ismail, S., & Noor, N. M. (2012). The relationship between big five personality with work motivation, competitiveness and job satisfaction. *Elixir Psychology, 44*, 7454–7461. http://eprints.utm.my/33609/

Bingwen Yan holds a Doctoral degree in Engineering and has accumulated over 15 years of academic experience in engineering and management sciences. Currently, he serves as the Head of Department of Industrial and Systems Engineering in the Faculty of Engineering and Built Environment at the Cape Peninsula University of Technology. Prof Yan is recognised for his extensive research contributions, with published books, journal articles, and conference papers in areas such as industrial engineering, engineering management, and operations management.

RW Maladzhi holds a Doctoral Degree in Mechanical Engineering at Cape Peninsula University of Technology. He is the associate Professor and chair of the department in the Mechanical Engineering in the school of Engineering College of Science Engineering and Technology, University of South Africa. He is the co-leader of the Smart Manufacturing research group along with Dr Kanakana-Katumba focussing on the following research areas: Adoption of 4IR technologies, Process Optimization, Lean manufacturing, Lean Six Sigma, Maintenance practices, System dynamics, Sustainable development, green entrepreneurship, innovation leadership, innovation culture and engineering education. He teaches Mechanical Engineering research project for Bachelor of Engineering Technology and has published more than 42 journals and conference papers. Additionally, he is a registered engineering technologist with the engineering council of South Africa (ECSA). He has supervised two PhD students and one Masters to completion.