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Digitalised human needs to support intra-organisational knowledge sharing among knowledge workers

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Abstract: An organisation's success relies more on dynamic knowledge management (KM). A successful knowledge management system is inextricably linked to employee behaviour, namely intra-organisational knowledge sharing. Individual needs significantly influence human behaviour, such as innovation. Most need-based motivation theories make similar assumptions regarding basic needs such as achievement, affiliation, and power. Using the Rasch Model and structural equation modelling (SEM) methodologies, this research transforms human needs into digital form to enhance intra-organisational knowledge sharing among knowledge workers. The study hypothesis employs SEM. It indicates that the need for achievement, affiliation, and power influence knowledge sharing significantly, with the strongest significant influence being the need for power. Various information and communication technology (ICT) tools have recently been developed based on web, mobile, and desktop applications. The study mapped the three categories of motivators based on the appropriate ICT tools for intra-organisational knowledge sharing.

Keywords: knowledge worker; need of achievement; need of affiliation; need of power; information communications technology; motivation; David C. McClelland needs theory; Rasch model; person map.

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1 Introduction

Knowledge is a critical component of strategic organisational design and crucial to organisational success for corporations and governments (Zenk et al., 2021). Now, knowledge, like land, labour, and capital, is seen as an organisation's fundamental issue of production (Personal and Archive, 2017).

Companies must be able to acquire, integrate, communicate, and retain knowledge and enable the continuous generation of new knowledge to be competitive. New knowledge is essential for innovation; it helps organisations endure a changing environment and boosts their competitiveness (Grimsdottir et al., 2019).

In today's knowledge-based economy, how business is developed has changed drastically. Due to the growing importance of knowledge in the modern economy, economic growth is closely tied to finding new ways to solve problems, create new products and processes, start new businesses, and expand into new areas that create economic value (Ndou and Schiuma, 2020).

Knowledge management's primary goal is to transform individual knowledge into organisational knowledge. A company may be considered a social group that creates, shares, and transfers explicit and tacit knowledge (Shaqrah et al., 2013). Furthermore, good knowledge management is closely tied to employee behaviour, particularly knowledge sharing among employees or intra-organisational knowledge sharing (Jha et al., 2019; Zenk et al., 2021).

Intra-organisational knowledge sharing refers to sharing knowledge within an organisation between or among persons and organisational units. It entails coordination methods, motivation, knowledge exchange, accessible possibilities, and work environment culture (Zenk et al., 2021). Understanding the dynamics of intra-organisational knowledge sharing is critical for companies to support successful knowledge transfer and collaboration (Al Bastaki et al., 2021; McCullough et al., 2020; Zenk et al., 2021).

Previous research has demonstrated that knowledge sharing occurs at the organisational, team, and individual levels (Hussein et al., 2019; Mohajan, 2019; Si Xue, 2017). Consequently, knowledge sharing is fundamentally a human activity requiring dynamic participation and healthy employee relationship (Gerpott et al., 2017, 2019; Lim, 2015)

The knowledge-based view of competitive advantage acknowledges the importance of knowledge and human resource (HR) competencies as valuable assets for an organisation's long-term competitive advantage, defined by knowledge resources, also known as knowledge workers (Wang and Wang, 2012).

Knowledge workers are more receptive to performance feedback. It is a motivating reference for self-evaluation and self-improvement. They rely on greater creativity and innovativeness to offer good work outputs (Tsai, 2018). Knowledge workers are also aware of what they and others know or need to know and what information must be communicated within their organisation (Edghiem et al., 2021).

Organisational knowledge management frequently fails, particularly in digital transformation (Fischer, 2022). However, one of the most important knowledge management criteria is individuals' willingness to share their knowledge and experience. A high degree of knowledge-sharing motivation should ideally lead to knowledge-sharing behaviour. Shared knowledge may thus be kept, distributed, and used (Fischer, 2022).

According to studies, individual objectives and needs greatly impact human behaviour, such as creativity and innovativeness. Most need-based motivation theories make similar assumptions about fundamental desires. Self-determination explains three basic psychological demands. These are competence, relatedness, and autonomy (Devloo et al., 2015; Fan et al., 2021; Fischer et al., 2019; Melhem, 2018; Schüler et al., 2010). First, the gratification of proficiency and a feeling of efficacy in one's profession is vital to the quest for competence. Second, McClelland refers to the need for achievement (Fischer et al., 2019). While relatedness promotes a sense of belonging, strengthened through cooperation and teamwork, McClelland refers to the need for affiliation (Fischer et al., 2019). This research is based on McClelland's need theory. The need theory holds

that workers are motivated when their needs for achievement, affiliation, and power are met (Rybnicek et al., 2019).

Many studies have focused on intra-organisational knowledge sharing among employees in the private and public sectors (Edghiem et al., 2021). Previous studies on knowledge sharing are about organisational culture and knowledge sharing (Zenk et al., 2021); collaborative learning (Liu et al., 2021); organisational innovativeness (Kucharska, 2021; Kucharska and Bedford, 2019); coworking (Ivaldi et al., 2021); knowledge sharing practices (Edghiem et al., 2021). However, based on McClelland's Needs Theory, very little research has been done on intra-organisational knowledge sharing.

In addition, numerous previous studies have focused on McClelland's need theory in the Entrepreneurial Field (Barba-Sánchez and Atienza-Sahuquillo, 2012; Caliendo et al., 2020; Kusumawijaya, 2019; Lauto et al., 2020; Locatelli et al., 2021). There is also little research on McClelland's Needs Theory in intra-organisational knowledge sharing. Therefore, this study has significant implications for developing a stable and productive work team by paying attention to the needs of each member. It assumes that the team's dynamics and productivity can be accommodated by information and communication technology (ICT) depending on the needs of its members.

Social media, Web 2.0, online, and virtual environments enable people to create novel content, gain knowledge, and employ data and information by boosting communication capacity to develop technology-driven communities that become smart. Technology assists both commercial and public societies in moving toward smartness through collaboration and using data and information to produce and share new knowledge. People, private and public organisations tend to profit from technology-enabled information sharing and embrace technology as a means of knowledge sharing to produce, consolidate, and retain social and public value. Technology enables people to communicate in online environments, leading to the formation of intelligent and knowledge-oriented communities that profit from knowledge sharing, acquisition, and innovation (Afiyah, 2021; Christina et al., 2021; Khalik et al., 2021; Leon and Romanelli, 2020; Oktavia and Sujarwo, 2020).

This research aims to make three contributions to current research on McClelland's Theory of Needs in knowledge management, specifically intra-organisational knowledge sharing. First, the researchers identify the enablers of intra-organisational knowledge sharing based on McClelland's Need Theory. It serves as the foundation for the regeneration of a strong innovative team. Second, this research examines the effect of the need for achievement, need for affiliation, and need for power on intra-organisational knowledge sharing. Finally, this study explores McClelland's Need Theory in intra-organisational knowledge sharing in a service-oriented organisation using Rasch Model and structural equation modelling (SEM) techniques.

2 Literature review

2.1 McClelland's needs theory

Work motivation is the variable that excites, guides, and sustains employee behaviour throughout time (Rybnicek et al., 2019). Motivation theory is divided into three categories: First, content theories look for features positively associated with motivation.

The key content theories include Maslow's hierarchy of needs theory, Herzberg's motivator-hygiene theory, and McClelland's need theory (Fischer et al., 2019; Rybnicek et al., 2019). Second, process theories examine motivation dynamically by focusing on the processes underpinning work motivation. Goal-setting theory by Locke and Latham, social-cognition theory by Bandura, and expectancy by Vroom are the most notable process theories (Rybnicek et al., 2019). Third, justice theories give a social perspective on job motivation based on the idea that fair processes in an organisational context increase motivation (Rybnicek et al., 2019). In this study, the researchers focus on McClelland's needs theory.

Needs are an internal conflict that impacts the cognitive processes that underlie behaviour (Rybnicek et al., 2019). Three needs are fundamental in the organisational setting (Fischer, 2022; Fischer et al., 2019; Rybnicek et al., 2019; Schüler et al., 2010):

1 the need for achievement

2 the need for affiliation

3 the need for power.

According to McClelland, regardless of gender, culture, or age, everyone has three motivational variables, one of which will be the primary motivator (Fischer, 2022; Fischer et al., 2019; Royle and Hall, 2012).

A strong desire to establish and achieve challenging goals is a powerful motivator for the need for achievement. They take calculated risks to achieve their objectives. They are more driven than their counterparts to succeed at a greater level. Likes to receive regular feedback on their development and accomplishments. They frequently prefer to work alone since the goal for success is defined as a desire to achieve excellence in one's achievements via one's own efforts (Fischer, 2022; Fischer et al., 2019; Pichler et al., 2012; Rybnicek et al., 2019; Schüler et al., 2010). Individuals with a strong need for achievement desire to assume personal responsibility for devising innovative solutions to problems. Furthermore, persons with a strong desire for success are perceived as more effective leaders and are happier in jobs that need a high level of expertise (Fan et al., 2021; Fischer, 2022; Fischer et al., 2019; Pichler et al., 2012; Royle and Hall, 2012; Rybnicek et al., 2019; Schüler et al., 2010).

A person with a strong need for affiliation wishes to be a part of a group. Because they want to be liked, they will typically do what the rest of the group does. They prefer collaboration to competition. They loathe being subjected to a high level of danger or uncertainty. Additionally, people with high affiliation needs like to participate in team activities that promote interdependence and cooperation with others (Fan et al., 2021; Fischer, 2022; Fischer et al., 2019; Pichler et al., 2012; Royle and Hall, 2012; Rybnicek et al., 2019; Schüler et al., 2010). Individuals with a strong sense of belonging are more sensitive and tolerant of others. Affiliation has been demonstrated to influence leadership in previous studies (Fan et al., 2021; Fischer, 2022; Fischer et al., 2019; Royle and Hall, 2012).

The need for affiliation is the foundation of social capital, defined as the capacity to develop qualified connections among colleagues (Di Fabio and Saklofske, 2019; Ngoc-Tan and Gregar, 2018; Nguyen et al., 2019). It indicates that employees may obtain social assistance, such as informational, instrumental, and emotional support. It helps workers receive the information and tools they need to do their responsibilities more effectively (Ahn and Kim, 2017; Di Fabio and Saklofske, 2019). Employees with a high

need for affiliation will regularly engage with colleagues, voice their concerns, give support, and exchange knowledge. It refers to the desire to develop and maintain close personal relationships with others (e.g., supervisors, colleagues). It is also shown by a desire to participate in cooperative and engaging activities (Fan et al., 2021; Fischer, 2022; Fischer et al., 2019; Pichler et al., 2012; Royle and Hall, 2012; Rybnicek et al., 2019; Schüler et al., 2010).

The last one is a person who needs power. They desire to exert control and influence over others. They like competing and winning and have high prestige and recognition (Fischer, 2022; Fischer et al., 2019; Royle and Hall, 2012; Rybnicek et al., 2019; Schüler et al., 2010).

Controlling people is crucial to one's need for power. Individuals in positions of power may exploit their informal duty to others to get additional resources that will assist them in succeeding in their professions (Fischer, 2022; Fischer et al., 2019; Royle and Hall, 2012). The previous study, however, has indicated that expressing power needs has a mixed effect, particularly on direct subordinates, who react poorly to leaders with high power needs (Fischer et al., 2019; Royle and Hall, 2012).

Finally, the need for power is linked to the need for effect and status associated with formal social authority and risk-taking. Individuals with great power require competitive, status-driven environments. They are aggressively seeking status symbols. As a result, individuals are more likely to experience job anxiety and to be entrusted with critical resources. (Fischer, 2022; Fischer et al., 2019; Royle and Hall, 2012; Rybnicek et al., 2019; Schüler et al., 2010).

2.2 Intra-organisational knowledge sharing

Knowledge workers are a crucial resource for knowledge-based firms in the knowledge era. Knowledge workers are employees always seeking new ways to solve problems (Jia and Fan, 2014). They also have valuable organisational assets such as abilities, expertise, talents, ideas, and commitments. As a result, organisational approaches, tactics, formal knowledge, human talents, and experiences have all grown in value (Hussein et al., 2019; Mohajan, 2019; Si Xue, 2017).

Knowledge exchange among individuals, groups, units, or organisations is known as intra-organisational knowledge sharing. In this context, knowledge is commonly defined as information that has been selected and interpreted (Fischer, 2022; Hussein et al., 2019; Mohajan, 2019; Si Xue, 2017). The term "knowledge sharing" often refers to one-way information exchange. When one individual communicates a work skill to another or writes process knowledge in a manual. As in team meetings or consultative procedures, knowledge sharing can be bi- or even multidirectional. However, knowledge sharing is defined in this study as the transmission of information on an individual level or in groups (Ahn and Kim, 2017; Castaneda and Cuellar, 2020; Castaneda and Toulson, 2021; Fischer, 2022; Si Xue, 2017).

Several factors impact knowledge sharing. These determinants might be either internal or external. The organisational backdrop of in-group collectivism, uncertainty avoidance, performance focus, and power distance are all external variables that impact knowledge sharing (Fischer, 2022). Excellent mood, age, and drive are internal predictors of knowledge sharing (Fischer, 2022).

Human capital is the most precious asset. Consequently, company performance is defined as overall staff performance and task achievement. It results from the volume and

quality of work that workers can do concerning their obligations (Hermawati et al., 2020; Sutia et al., 2020). Human capital components are viewed as knowledge resources in a knowledge-based enterprise. It is critical for long-term innovative success (Ahn and Kim, 2017; Razzaq et al., 2019). As a result, knowledge sharing is a crucial component of knowledge management. Individual and organisational learning, performance, job satisfaction, and innovative capabilities are all predicted by knowledge sharing (Ahn and Kim, 2017; Fischer, 2022; Razzaq et al., 2019).

2.3 The relationship between needs theory and intra-organisational knowledge sharing

The need for achievement, affiliation, and power has been proven to impact knowledge-sharing behaviours. According to research, the need for affiliation promotes knowledge-sharing behaviours favourably (Lee and Kim, 2017). Furthermore, the need for achievement and power has also been found to influence the intention to share knowledge (Wulandari et al., 2017). In addition, the need for power is related to extrinsic incentives such as influence and power. In contrast, the need for affiliation is associated with social attachments and interpersonal interactions (Kahil, 2021). These findings imply that individuals' intentions and requirements substantially affect their willingness to share knowledge.

2.4 The ICT influence on needs theory

The advancement of ICT has had a tremendous impact on the need of achievement, affiliation, and power. Individuals' goals have been made simpler by offering access to information, resources, and opportunities (Rasmitadila et al., 2020). It has also changed how people learn (Woreta et al., 2013). Regarding affiliation, ICT has enabled people to interact and communicate with others, establishing social bonds and a sense of belonging. Furthermore, ICT has empowered individuals by giving them access to information and platforms for political engagement, which can potentially impact power relations (Zhong et al., 2022). Overall, ICT has become a formidable instrument that has transformed the way people pursue achievement, affiliation, and power in numerous sectors of life (Ferrari et al., 2021; Korie et al., 2022; Tyarakanita et al., 2021; Watson et al., 2020; Yuan et al., 2017).

2.5 The ICT influence on knowledge sharing

The impact of ICT on knowledge sharing is enormous. It performs various functions in knowledge management, including acquiring information, storing and categorising digital goods, searching related content, and conveying content based on various use backgrounds (Yeh et al., 2006). ICT also removes barriers to knowledge exchange, provides routes for information acquisition, corrects flow processes, and locates knowledge carriers and seekers (Yeh et al., 2006). Advanced ICT enables data sharing and transfer across multiple platforms (Yeh et al., 2006). Furthermore, ICT tools facilitate knowledge sharing in communities of practice (Boh, 2014). Furthermore, a prior study showed that ICT moderates the relationship between knowledge generation and sharing and the quality of healthcare services (Colnar et al., 2022). Overall, ICT is critical in facilitating knowledge sharing and boosting organisational performance. The role of ICT

in successfully implementing knowledge sharing by knowledge workers in organisations cannot be overstated (Agrifoglio et al., 2021; Castaneda and Cuellar, 2020; Castaneda and Toulson, 2021).

Nowadays, various ICT tools have been developed for knowledge sharing. Different dominant motivators will necessitate the use of different ICT tools. Naturally, someone with a high dominance in need of Achievement, Need of Affiliation, and Need of Power will require different ICT tools. It must be tweaked in order to achieve optimal intra-organisational knowledge sharing (Agrifoglio et al., 2021; Castaneda and Cuellar, 2020; Castaneda and Toulson, 2021).

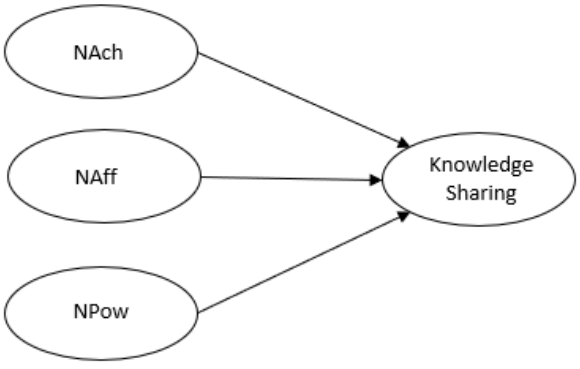
After conducting a thorough literature review, the researchers arrive at the following hypotheses and research framework (Figure 1):

H1: Needs for achievement have a significant influence on intra-organisational knowledge sharing.

H2: Needs for affiliation have a significant influence on intra-organisational knowledge sharing.

H3: Needs of power have a significant influence on intra-organisational knowledge sharing.

Figure 1 Research framework



3 Methodology

3.1 Research design and approaches

The study aims to examine various ICT tools that have been developed for the purpose of knowledge sharing in the human needs context. Different dominant motivators will necessitate the use of different ICT tools. The study was conducted to provide explanations or explanatory studies. It has been carried out once. The study used a cross-sectional sample survey and a field study to gather data for a specific time. It is advantageous to gather a lot of data from the population and maximise the representative sampling to increase the generalisability of the findings. The theoretical framework of the research was followed by hypothesis generation. The collection of sample data, and the confirmation of the analytical results utilising the Rasch Model approach and SEM analysis.

3.2 Data collection

The study employed judgemental non-probability sampling because it selects the most conveniently placed or in the best position to give the required information. It is applied when there is no reliable population size and location data. Furthermore, purposive sampling comprises the researcher selecting sampling units based on experience and judgement (Hope et al., 1977; Kraska-Miller, 2013). The data were gathered using a Google Forms survey questionnaire. The respondents were knowledge workers in Greater Jakarta, Indonesia.

Zikmund et al. (2010) state that the Bernoulli formula was utilised as the sampling approach because the number of participants in this study cannot be determined with certainty.

$$n \geq \frac{\frac{(Z\alpha)^2}{2} \cdot p \cdot q}{e^2}$$

In this study, the accuracy level (α) was 5%, and the confidence level was 95%, so the value $Z = 1.96$ was obtained. The e (error rate) value has been set at 10%. The probability that the questionnaire is correct q (accepted) or wrong p (rejected) is 50% (0.5), respectively. Based on the Bernoulli formula above, the sample size is 96 respondents will be utilised to represent the population as rounded up to 96.04 units.

3.3 Data analysis

The data collected via the survey questionnaire was processed using Rasch Model analysis with WINSTEPS 5.2.1.0 software. The Rasch model is the most suited tool for quantitative analysis in human sciences since the research instruments will yield ordinal data (Boone et al., 2014; Sumintono, 2014). According to the measurement model, Rasch model analysis is based on probability and reliably predicts respondents' replies to all items. In addition, the Rasch Model translates ordinal data such as Likert rating scale item scores to an interval scale known as "unit of opportunity logarithms" (logit) (Boone et al., 2014; Sumintono, 2014).

SEM is another method for analysing the data and the research model. SEM analysis will be utilised with SMARTPLS 3.2.9 software.

3.4 Common biased method

To prevent common method bias, Rasch Model Analysis can assist in reducing the number of biased responses on self-report questionnaires (Boone et al., 2014; Sumintono, 2014). Person Measure Analysis is used to test for the responses' bias, with the MNSQ value should be higher than 0.5 and lower than 1.5 (Boone et al., 2014; Sumintono, 2014).

3.5 Research instrument

The research instrument was created using literature and research reviews. McClelland's need hypothesis was measured with questions derived from (Mardi et al., 2018; Mu et al.,

2020; Papachroni and Heracleous, 2020; Schnellbächer and Heidenreich, 2020), consisting of 30 indicators. The intra-organisational knowledge-sharing instrument is adapted from the work of (Ferretti and Afonso, 2017; Kordab et al., 2020) and is composed of 6 indicators.

4 Findings and discussion

The research was conducted at a service-based organisation in Greater Jakarta, Indonesia, in 2022. Approximately six months after starting, the research was completed. The study could collect the primary data from 250 knowledge workers using convenience random sampling. The number of samples exceeds the minimum sample requirement (96 samples). According to the Rasch Model analysis, only 230 respondents can examine further. The demographic data shows female knowledge workers for 49% of the workforce and male knowledge workers for 51%. In addition, 13% of them are above 40 years old, while 25% are below 25 years old, and the majority 62%, are between 26 and 40 years old. Furthermore, 30% of respondents hold a master's degree and above, 12% are high school graduates, 3% are diploma degree holders, and 54% have a bachelor's degree. The working level comprises 61% officer, 19% supervisor, 15% associate manager, 3% senior manager, and 1% associate director.

4.1 Measurement model analysis

The researchers tested the validity and reliability of the research instruments before gathering data. First, SmartPLS 3.2.9 software was utilised for concurrent validity analysis, with an outer loading validity limit of >0.5 (Ghozali, 2021; Hair et al., 2019; Hair et al., 2009). The second is a validity test based on the extracted average variance (AVE). An AVE greater than 0.50 indicates that the research indicators have been valid (Ghozali, 2021; Sarstedt et al., 2021).

Table 1 show that all indicators with a loading factor value greater than 0.50 are considered legitimate. Additionally, the AVE value also exceeds 0.50. In that case, it can be inferred that this study model's indicators have proven valid (Sarstedt et al., 2021).

The resulting composite reliability (CR) output shows the reliability test for each variable. The research variable is deemed reliable if the CR value is greater than 0.7 but less than 0.93 (Ghozali, 2021; Sarstedt et al., 2021). The indicators for each latent variable are demonstrated to be dependable by the CR coefficient, which exceeds 0.7 but remains less than 0.93. This indicates that each question item created by the researcher could provide test measurement accuracy and consistency.

4.2 Structural model analysis

The level of diversity in the dependent variable, namely intra-organisational knowledge sharing, is shown by an R-square of 0.530 (Table 2).

Identifying independent variables, such as the need for achievement, affiliation and power, can account for 0.530 or 53% of the changes in intra-organisational knowledge sharing, indicating a moderate level of influence. Meanwhile, the remaining 47% of the difference in intra-organisational knowledge sharing can be attributed to additional factors not considered in this study.

Table 1 Measurement model analysis

Latent variable	*Indicator*	*Loading factor* (>0.5)	*Composite reliability* (≥0.7)	*Remark*	*AVE* (≥0.5)	*Remark*
Need of achievement	Ach1	0.870	0.945	Reliable	0.895	Valid
	Ach2	0.892		Reliable		
Need of affiliation	Aff1	0.950	0.874	Reliable	0.776	Valid
	Aff2	0.942		Reliable		
Need of power	Pow1	0.760	0.891	Reliable	0.623	Valid
	Pow2	0.834		Reliable		
	Pow3	0.720		Reliable		
	Pow4	0.742		Reliable		
	Pow5	0.878		Reliable		
Intra-organisational	S1	0.805	0.837	Reliable	0.630	Valid
Knowledge	S2	0.788		Reliable		
Sharing	S3	0.789		Reliable		

Table 2 R-square analysis

Dependent variable	*R-square*
Intra-organisational knowledge sharing	0.530

4.3 Hypothesis testing

Table 3 presents the results of hypothesis testing. The first hypothesis, which examines the influence of the need for achievement on intra-organisational knowledge sharing, has demonstrated a positive and significant effect. This is supported by a t-statistic value of 2.126, which exceeds the rule-of-thumb threshold of 1.96, as well as a path coefficient of 0.228, equivalent to 22.8%.

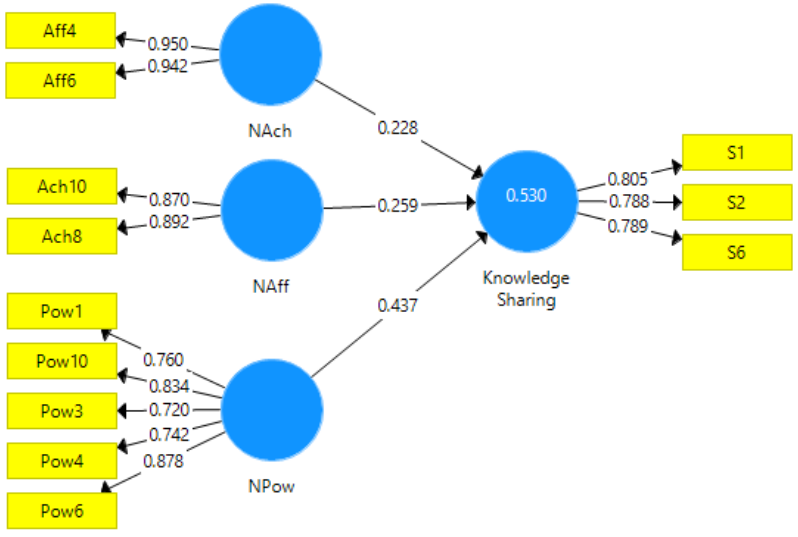
Table 3 Hypothesis testing results

Hypotheses	*Path coefficient*	*T-statistic* ≥ *1.96*	*P-values* ≤ *0.05*	*Results*
NAch → IKS	0.228	2.126	0.034	H1 Accepted
NAff → IKS	0.259	3.709	0.000	H2 Accepted
NPow → IKS	0.437	3.495	0.001	H3 Accepted

NAch: need of achievement, NAff: need of affiliation, NPow: need of power,
IKS: intra-organisational knowledge sharing.

The first hypothesis supports prior studies. Individuals that have a strong need for achievement prefer to assume personal responsibility for devising innovative solutions to problems (Fan et al., 2021; Fischer, 2022; Fischer et al., 2019; Royle and Hall, 2012; Schüler et al., 2010).

Figure 2 Path analysis of structural model (see online version for colours)



Similarly, the second hypothesis, which examines the influence of the need for affiliation on intra-organisational knowledge sharing, also shows positive and significant results. This is evidenced by a t-statistic value of 3.709, surpassing the rule of thumb threshold of 1.96, and a path coefficient of 0.259, corresponding to 25.9%. This aligns with the prior works of (Fan et al., 2021; Fischer et al., 2019; Royle and Hall, 2012).

Moreover, the third hypothesis, which examines the effect of the need for power on intra-organisational knowledge sharing, also shows positive and significant results. This is supported by a t-statistic of 3.495, surpassing the thumb threshold of 1.96, and a path coefficient of 0.437, equivalent to 43.7%. These findings align with the prior studies of (Fischer et al., 2019; Royle and Hall, 2012).

Based on the results of the statistical analysis above (Table 3 and Figure 2), the need for power has the greatest influence on intra-organisational knowledge sharing of 43.7% compared to the other two needs.

4.4 Rasch model analysis

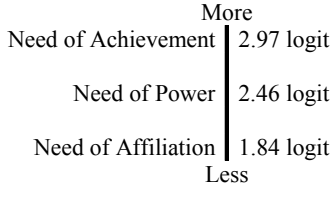
The Map of Human Needs Recapitulation (Figure 3) shows that the most dominant motivator is the need for achievement since it has the highest logit value (2.97 logit). Furthermore, it infers that these knowledge workers tend to be motivated by their goals and display their ability.

4.5 Discussion

According to McClelland's Needs Theory, humans are driven by three primary needs: achievements, affiliation, and power. This hypothesis can have a substantial impact on intra-organisational knowledge sharing. First, the need for achievement can motivate people to seek out and share information to attain their goals and display their abilities. They may actively participate in knowledge-sharing events to acquire attention and fulfil

their need for success. Second, the need for affiliation can also encourage intra-organisational knowledge sharing. It is because they value social ties and relationships. People with a strong desire for affiliation are more inclined to cooperate and share information. It can help to promote an organisational culture of knowledge sharing and cooperation. Finally, the need for power might impact intra-organisational knowledge sharing. Individuals with a strong desire for power may be driven to share their expertise to exercise influence and control inside the business. They may view knowledge sharing as a strategy for gaining power and elevating their position. Overall, McClelland's Needs Theory sheds light on the motives for intra-organisational knowledge sharing, emphasising the significance of achievement, affiliation, and power in motivating employees to share knowledge among workers or intra-organisational knowledge sharing.

Figure 3 Map of human needs



Based on the model's output coefficient and the definition of the three types of motivators according to McClelland's Theory, the researchers have made a map between ICT tools and the types of motivators (Agrifoglio et al., 2021; Castaneda and Toulson, 2021; Fischer, 2022; Fischer et al., 2019). Researchers believe this mapping has an essential role in successfully implementing ICT tools in organisations in the future. This mapping is shown in Table 4.

Table 4 ICT tools and the type of motivators mapping

ICT Tools	*Types of motivator (McClelland's theory)*		
	Need of achievement	*Need of affiliation*	*Need of power*
Audio/Podcast		✓	
Competition	✓		✓
e-Learning	✓		✓
Gamification	✓	✓	✓
LinkedIn	✓		✓
Personal Blog	✓		✓
Photo/Instagram	✓	✓	✓
Social Media	✓	✓	✓
Twitter		✓	
Video/Youtube	✓	✓	✓
Wiki		✓	✓

Today, various ICT tools have been developed, classified into three types: web applications, mobile applications, and desktop applications (Ahokangas et al., 2022; Iftikhar and Ahola, 2020). Leaving that aside, the authors select several ICT applications. Audio/Podcast, Competition, e-Learning, Gamification, LinkedIn, Personal Blog, Photo/Instagram, social media, Twitter, Video/Youtube, and Wiki are among them. These apps are thought to be representative of the three types of apps. Furthermore, the authors categorise them into three kinds of motivators suitable for competition, e-Learning, Gamification, LinkedIn, Personal Blog, Photo/Instagram, social media, and Video/Youtube. Afterward, Affiliation types appropriate for Audio/Podcast, Gamification, Photo/Instagram, social media, Twitter, Video/Youtube, and Wiki are required. Finally, the Need of Power types is appropriate for the following applications: competition, e-learning, gamification, LinkedIn, personal blog, photo/Instagram, social media, video/Youtube, and Wiki.

The similarity of their characteristics and specifications is used to map ICT tools with three types of motivators. As we know, the application of ICT tools such as Competition, e-Learning, Gamification, LinkedIn, Personal Blog, Photo/Instagram, social media, and Video/Youtube have specifications to achieve challenging goals than others, likes to compete, hungry for higher achievement, prefers to work alone, dominant as a leader, and other characters that match with Need of Achievement type motivators. It's a different story with applications of ICT tools like Audio/Podcast, Gamification, Photo/Instagram, social media, Twitter, Video/Youtube, and Wiki, which have requirements for people who prefer cooperation over competition, wants to be liked, needs to engage in team activities, is more sensitive, tolerant of others, and have other characteristics that match with Motivators of Need of Affiliation type. Finally, Competition, e-Learning, Gamification, LinkedIn, Personal Blog, Photo/Instagram, social media, Video/Youtube, and Wiki have requirements for those who want to exert control and influence over others, such as competing and winning and having a high level of prestige and recognition, as well as other characters who match with Need of Power motivators.

5 Conclusion

An effective knowledge management system is directly related to employee behaviour, notably knowledge sharing among workers or intra-organisational knowledge sharing.

Individual needs significantly influence human behaviour, such as creativity and innovativeness. Most need-based motivation theories make similar assumptions regarding basic needs such as achievement, affiliation, and power.

According to the Human Needs Map Recapitulation, the most prominent motivation is the need for achievement, which has the most outstanding logit value. In addition, it implies that these knowledge workers are more likely to engage in team activities to seek out and share information in order to attain their goals and display their abilities. Therefore, the need for achievement can be a reasonable knowledge-sharing basis.

The study hypothesis utilising SEM demonstrates that the need for achievement significantly influences knowledge sharing and has a significant impact. In addition, the need for affiliation and power also significantly affects knowledge sharing.

Recently, different ICT tools have been developed, classified into three types: web apps, mobile applications, and desktop applications. The study mapped the three categories of motivators based on the appropriate ICT tools for intra-organisational knowledge sharing.

5.1 Study limitation

The study still needs improvement. Further work is required to explore the effectiveness of the ICT tools based on human needs to support intra-organisational knowledge sharing. In addition, empirical research must be conducted to find proof of digitalised human needs based on ICT. Examining human needs in other sectors such as Small Medium Enterprises, hospitality, or public service sectors, is also beneficial. Those sectors heavily depend on human resources as their primary intangible assets. Furthermore, national culture and job security might also enrich the further development of this work.

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