FACTORS AFFECTING KNOWLEDGE SHARING OF ENGINEERS IN OIL AND GAS COMPANIES

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ABSTRACT
Knowledge sharing among employees has been identified as one of the factors that contribute to improved job performance. Thus, this study examines the relationship between engineer’s perceived enjoyment, perceived status and subjective norm on their intention towards knowledge sharing in public oil and gas firms in Iraq. The study selects 240 engineers from oil and gas companies in Iraq to participate in the research. A questionnaire designed in a Likert scale format was used for the data collection. The data were analysed using descriptive statistical analysis and Correlation analysis. The results of the analysis show that there is a positive relation between engineer’s perceived enjoyment, perceived status and subjective norm on their intention towards knowledge sharing in public oil and gas firms in Iraq. The paper makes some recommendations on how to increase engineers’ perceived enjoyment, perceived status and subjective norm and eventually increase intention towards knowledge sharing.

Keywords: knowledge sharing; oil and gas; perceived enjoyment, perceived status; subjective norm
1.1 Introduction
To cope with the competitive nature of the global marketplaces in the 21st century, companies and organizations should constantly update and increase the knowledge of their employees in their respective specializations. One of the ways through which employees’ knowledge and skills will be increased is through knowledge sharing among the staff of a particular organization. Knowledge sharing is defined as the transfer of useful as well as helpful know-how and information at multiple levels of an organization (Kim, Namkoong, & Chen, 2020). It is also seen as a process of active sharing of knowledge among employees and colleagues in an organization by the employees consult with other members of the organization for collecting knowledge (Noh & Lee, 2020).

Studying the knowledge sharing intention of engineering professionals in the oil and gas industry has gained significant momentum among researchers and academicians (Lyu, Yang, Zhang, Teo, & Mu, 2020). Generally, knowledge sharing has been identified as a crucial element that helps in the success of organizations (Luo, Qin, & Zhang, 2020), especially in the oil and gas sector. It gives the oil and gas firm multiple benefits. Enhancement and sustenance of the competitive advantage of companies is one such benefit achieved (Cai, Song, Xiao, & Shi, 2020). Lowering the time taken for work processes (Cai & Shi, 2020), thereby contributing to the overall development of new as well as innovative ideas and opportunities and other benefit achieved. Uplifting flexibility of the company for consistent organizational changes (Amin & Rubel, 2020); Achieving fast-paced development of new products and projects (Scuotto et al., 2020); enhancement of efficiency and productivity (Tabajen, 2020); increasing performance of the organization from the aspects of innovation capability as well as absorption capacity (Rafieian-Isfahani, Peikari, & Rafieyan-Isfahani, 2020); remaining as an appositive force in organizational survival (Pang, Bao, Hao, Kim, & Gu, 2020); promotion of organization based learning (Anxin, Lijun, Weijiao, Jingjing, & Lili, 2020); better services to customers (Hannah Kim, Lee, & Oh, 2020); and reducing costs associated to production (Rafieian-Isfahani et al., 2020) are few such other benefits from the study.

However, knowledge sharing is affected by many factors, depending on the nature of the organizations and the customs of the larger societies in which the organizations are sited. The factors include the intention of employees of an organization for sharing knowledge, the task at hand, willingness of an individual to share (Ismail, 2020). On the other, there are knowledge sharing enablers which include the attitude of the employees, perceived enjoyment, perceived behavioural control, subjective norm and perceived status among others.

In the Iraqi oil and gas sector, there is inadequate knowledge sharing among employees especially engineers in various companies. And very little has been done by researchers to explore the nature, the level of knowledge sharing among the engineers and the possible factors that affect the process. Therefore, this study is set to explore the relationship between perceived enjoyment, subjective norm and perceived status and knowledge sharing intention of engineers in public oil and gas companies in Iraq.

1.2 Research Questions
1. What is the relationship between engineer's perceived enjoyment on their intention towards knowledge sharing in public oil and gas firms in Iraq?
2. What is the relationship between engineer's perceived status on their intention towards knowledge sharing in public oil and gas firms in Iraq?
3. What is the relationship between engineer's subjective norm on their intention towards knowledge sharing in public oil and gas firms in Iraq?

2.1 Literature Review
Knowledge sharing is defined as an activity where individuals exchange knowledge expertise, information, and skills with other people such as members of an organization or members of a community (Shang et al., 2020). It is a concept which deals with individuals' openness for sharing their knowledge which is acquired and developed by other people (Soltani-Nejad et al., 2020). In other words, it is a social interaction where skills, knowledge and experiences of individuals of an organization are exchanged and transferred in the
Knowledge sharing is also defined as an activity whereby transfer, exchange and disseminate of ideas, know-how, skills, expertise and suggestions which are important to an organization or its members (Dutta et al., 2015). It involves a relationship between two individuals—one individual is the person who holds the knowledge and the other individual is the person who wants to gain the knowledge (Lindsay et al., 2020). As such, knowledge should be consciously and willingly communicated in any suitable format through means of speech, writing, or act (Ahmed et al., 2019).

In recent years, knowledge sharing is regarded as the turning point of various organizations around the world (Choi et al., 2018). While incompetency and inability of knowledge sharing might hinder or create a negative effect on the global operations of organizations (Kim & Shim, 2018). Scholars have identified some barriers to knowledge sharing at organizational and individual levels (Lyu et al., 2020). At an individual level, trust is a key factor that affects knowledge sharing. On the other hand, there are enablers to knowledge sharing. Creating a knowledge-sharing culture is considered an important factor for knowledge sharing enabler (Fauzi et al., 2018). Hence, facilitating effective knowledge sharing in an organization by examining the reception capacity of employees and creating an organizational culture that supports knowledge sharing is a major challenge faced by companies (Choi et al., 2018).

**2.2 Perceived Enjoyment**

Perceived enjoyment is one of the enablers of knowledge sharing. It is the pleasure of assisting others is a considerate action, and rather than that of reciprocity, it is dependent on the self-effacing compassion devoid of anticipation of somewhat reward (Stork, Kwan, Gibala, & Martin, 2015). It is simply the individuals love for serving others without attaining auspicious profits. Essentially, individuals like contributing their understanding just to aid (Yao Liu, Jiang, & Zhao, 2019). Previous researches designate that individuals are intrinsically encouraged for sharing their knowledge as they perceive it perplexing, and enjoyable to involve in well-informed quests as well as they adore to help (Hwang et al., 2018).

**2.3 Perceived Status**

Perceived status also enables knowledge sharing. It denotes the respect, influence and distinction of somebody in other’s eyes. Brooks and Wilson, (2015) designated that social status represents a social rank and difference that an individual relish in culture. Therefore, forcing concerning a definite level in the social hierarchy is termed as a basic motive amongst beings (Niu, Xiaoyan, & Pei, 2020). Thus, people tend to perceive knowledge sharing as an instrument of improving the personal image and reputation while participating in social assistances (Niu et al., 2020). Therefore, an investigation represents that persons who inclined to share knowledge on social broadcasting just to augment their reputation and significance (Yu & Kilduff, 2020). Particularly, an investigation on Facebook elaborated that user’s share information in regards to improving their self-respect, enlarging their friend’s circle, and reaching desired social position (Niu et al., 2020). Furthermore, a perceived status denotes to reason that how others will profess those who share knowledge. Thus, it can impact the honour and image of an individual in eyes of other people.

**2.4 Subjective Norm**

Subjective norm is associated with external stimuli that have a direct or indirect impact on the individual intention towards conducting a specific behaviour such as knowledge sharing (Satsios & Hadjidakis, 2018). It is an element that convinces a person that other people expect certain behavioural patterns from him/her (Ajzen & Fishbein, 2000). It is associated with the expectation of individual regarding others (Kashif et al., 2018). In knowledge sharing, the subjective norm is usually seen as the expectation of an individual from others regarding offering for sharing their technical knowledge and expertise as well as experiences.

As per the theory of planned behaviour, the stronger the subjective norm of an individual towards knowledge sharing the higher the intention of the individual to share knowledge and vice versa (Satsios & Hadjidakis, 2018). Hue and Cheung (2018) in one study realized that the knowledge sharing intention of individuals has a positive effect from their attitude and from subjective norm towards sharing of knowledge (Kam et al., 2018). Zhang et al., (2018) conducted another study where they identified that subjective norm of individual impacts behavioural intention in an indirect manner (Zhang et al., 2018).

In the study by Shin et al. (2018), subjective norm showed an indirect impact on the intention of individuals (Shin et al., 2018). According to this
framework, it has to be noted that subjective norm of people towards conducting a specific behaviour such as knowledge sharing effects of the behavioural intention of the individual and hence those individuals with positive subjective norm towards knowledge sharing will result in having strong intention to share their expertise and knowledge with others and vice versa (Shin et al., 2018).

3. Methodology
This study adopts a cross-sectional survey research design. This design enables a researcher to collect data from a single sample at a precise point at a time unlike in longitudinal research which involves the repeated collection of similar sample for a protracted period (Rindfleisch, Malter, Ganesan, & Moorman, 2008). For this study, data were gathered from a sample of investigation at a precise time. The target population of this study includes all engineers that work in public oil and gas companies in Iraq. The sample is demonstrative of the entire population. Thus, the sample size of this research includes 240 engineers that work in 3 public oil and gas companies in Iraq including south oil company, South Refineries company and Basra oil company. A questionnaire adapted from previous studies (Kakhki et al., 2020) was used to collect the data for the study. The questionnaire was designed in a five-point Likert scale from “strongly disagree” (1) to “strongly agree” (5) and used for the measurement of the level of agreement along with impersonated items.

Specifically, the items for the dependent variable, intention towards knowledge sharing was taken from Kakhki et al., (2020). While the independent variables were taken from other sources: perceived status (Moghavvemi, Sharabati, Paramanathan, & Rahin, 2017), perceived enjoyment (Moghavvemi et al., 2017) and subjective norm (Zhang & Ng, 2012).

To ensure internal consistency of the questionnaire, reliability analysis was run. The alpha Cronbach’s coefficient for each variable is more than 0.7 which is considered acceptable (Sekaran & Bougie, 2016).

| Variable                      | Cronbach's alpha |
|-------------------------------|------------------|
| Knowledge sharing Intention   | 0.92             |
| Subjective Norms              | 0.87             |
| Perceived Status              | 0.89             |
| Perceived Enjoyment           | 0.91             |

The questionnaire was also validated by a team of expert from the human resource department in a university in Malaysia. They ensure that the questionnaire covers the items related to the variables and former investigations (Sekaran & Bougie, 2016). Two experts from the oil and gas industry were also contacted to validate the instrument.

The researcher distributed the questionnaire to the engineers by reaching them during lunchtime. The respondents were given 20 minutes for completing and answering the questions of the questionnaire. Then, the researcher collected the questionnaire upon completion.

Before the analysis to answer the research question, a normality test was run. The P-value of Kolmogorov-Smirnov is observed to be 0.181 and which is more than 0.05. As a result, the data distribution is normal. Additionally, the Shapiro-Wilk’ P-value is 0.119 and that is greater than 0.05. Hence, the distribution of data in this research is Normal.

| Kolmogorov-Smirnov | Shapiro-Wilk. |
|---------------------|---------------|
| Sig                 | Sig           |
| 0.181               | 0.219         |
4. Results and Discussion
To analyse the data, SPSS (Statistical Package for Social Sciences) version 24.0 was used. Specifically, descriptive statistical analysis, Pearson Correlation analysis was conducted to answer the research questions.

4.1 Relationship between engineer's perceived enjoyment on their intention towards knowledge sharing
The results of the correlation analysis show that there is a positive significant correlation between perceived enjoyment and intention towards knowledge sharing ($r = .679$, $p = .000$) Sig. at 0.05 as in Table 3.

| Table 3: Correlation between perceived enjoyment and intention towards knowledge sharing |
|---------------------------------------------|------------------|------------------|
| perceived enjoyment | Pearson Correlation | .658 | 1 |
| Sig. (2-tailed) | .000 | 1 |
| N | 40 | 40 |

The result demonstrates a statistically significant correlation between the intention of sharing knowledge and Perceived Enjoyment (PE). Similarly, outcomes of this analysis illustrated a positive impact of Perceived Enjoyment (PE) on the intention of knowledge sharing. For that reason, engineers’ knowledge sharing intention for public Iraqi oil and gas is significantly positively correlated to the Perceived Enjoyment (PE). As well as this analysis’s findings have confirmed a significant affirmative influence of PE on the engineer's intention of Iraq. Hence, it proves that the upgrading of engineer’s Perceived Enjoyment (PE) regarding sharing of knowledge will increase their intention to share knowledge.

The outcome of previous studies regarding the association of behavioural intention were similar to the findings of current research. Furthermore, people tend to take part in knowledge sharing activities just to find out either the participation is pleasant or challenging or they are delighted to help others (Oliveira et al., 2020). As a result, the individuals that feel happy in helping others normally contribute to the actions of knowledge sharing (Lin et al., 2020). Subsequently, the joy of assisting can be a considerable element to explain the users’ contribution to the information system (Rouibah et al., 2016). Likewise, a preceding investigation designated that users contribute to that system which provides them with a pleasing sensation (Oliveira et al., 2020). Additionally, in a case when a user delights in doing an activity, they keep on doing it. Hence, a prior study specified that users of online shopping approaches offered innovative intent of using such product because they attain happiness by experiencing the virtual shopping for a protracted time period (Moghavvemi et al., 2017).

4.2 Relationship between engineer's perceived status on their intention towards knowledge sharing
The results of the analysis further show a positive significant correlation between perceived status and their intention towards knowledge sharing ($r = .679$, $p = .000$) Sig. at 0.05 as in Table 4.
The outcome of the analysis illustrates a statistically significant correlation between knowledge sharing intention and Perceived Status (PS). In the same way, these correlation analysis’ findings demonstrated an affirmative impact of Perceived Status (PS) on the intention of sharing knowledge. For that reason, the engineer’s knowledge sharing intention for Iraqi public oil and gas companies signified a significantly positive correlation with Perceived Status (PS). Resultantly, the analysis’s outcomes established a significantly positive influence of Perceived Status (PS) on the engineer’s knowledge sharing intention in public companies of oil and gas in Iraq. Hence, it implies that fact the improvement of engineer’s Perceived Status (PS) for sharing knowledge will escalate their intention for knowledge sharing. Hence, it implies that fact the improvement of engineer’s Perceived Status (PS) for sharing knowledge will escalate their intention for knowledge sharing.

Moreover, this is supposed that participation in entrepreneurial activity aids in attaining an advanced reputation with increased status in society (Abdillah et al., 2018). Additionally, the persons demonstrate a higher preference for sharing knowledge beneath the conditions which develop their status (Queiri et al., 2015). Consequently, all such individuals who share their knowledge are acknowledged to comprise an unconventional proficiency as compared to others (Moghavvemi et al., 2017). As a result, knowledge sharing gets respect (Bavik et al., 2018) and improved social image (Moghavvemi et al., 2017). Thus, the providers of knowledge obtain benefit from their elevated self-awareness (Zhao et al., 2018) as well as individuals attempt to trust that their shared knowledge would additionally lead to enhanced repute and social rank afore knowledge sharing (Moghavvemi et al., 2017). Therefore, (Moghavvemi et al., 2017) elaborated that society adores knowledge sharing under the progressing conditions of social status and rank.

4.3 Relationship between engineer’s subjective norm on their intention towards knowledge sharing

The results of the correlation analysis also revealed that there is a positive significant correlation between engineer’s subjective norm and their intention towards knowledge sharing ($r = .679, p = .000$) Sig. at 0.05 as in Table 5.
Table 5: Correlation between subjective norm and intention towards knowledge sharing

|                          | subjective norm | intention towards knowledge sharing |
|--------------------------|-----------------|-------------------------------------|
| subjective norm          | Pearson Correlation | 1                                 |
|                          | Sig. (2-tailed)  | .639                                |
|                          | N               | 40                                  |
| intention towards        | Pearson Correlation | .639                               |
| knowledge sharing        | Sig. (2-tailed)  | .000                                |
|                          | N               | 40                                  |

The analysis illustrates that the correlation between Knowledge sharing intention and Subjective Norm (SN) is statistically significant. Furthermore, correlation analysis’ outcomes demonstrate a positive effect on the Intention of Knowledge Sharing by Subjective Norm (SN). Thus, the engineer’s Knowledge Sharing Intention in public companies of gas and oil in Iraq has a significant affirmative correlation with the Subjective Norm (SN). Therefore, the analysis results have confirmed that Subjective Norm (SN) impact the intentions of engineers significantly positive towards the sharing of knowledge in public firms of oil and gas of Iraq. Hence, it implies that the improvement in the engineer’s Subjective Norm (SN) in the direction of knowledge sharing, would increase their intention of knowledge sharing. Hence, all these outcomes agree with the findings of earlier studies which are based on the relationship between behavioural intention and Subjective Norm (SN). Furthermore, the Empirical researches demonstrated the subjective norm’s impact on the intention of an individual for a positive usage of the system (Fauzi et al., 2018). Therefore, conferring to multiple types of research, the subjective norm is deliberated as a crucial element for the determination of which influences the individual behaviour acceptance (Fauzi et al., 2019).

5. Conclusion

The study aims to examine the relationship between engineer’s perceived enjoyment, perceived status and subjective norm on their intention towards knowledge sharing in public oil and gas firms in Iraq. There are few limitations of the study. First, other factors potentially influence the intention of engineers for knowledge sharing. Also, the respondents of the study are selected from three public companies of gas and oil which affect the generalization of the findings. And only a questionnaire is used for the data collection. Future studies can use more respondents from both private and public companies and use other instruments such as interviews for the data collection. Despite the limitations, the study has contributed by unveiling the importance and factors influencing knowledge sharing for the development of the human resources of companies. Thus, employers should have ways possible to increase engineers perceived enjoyment, perceived status and subjective norm to share their knowledge more to improve organizational practices.

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