

THE INFLUENCE OF PERSONALITY TRAITS ON KNOWLEDGE SHARING  
IN THE CONTEXT OF RESEARCH SUPERVISION

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*All the time...*

To my beloved Family,  
For their endless Love, Motivation and Efforts

*The Most Important...*

To My Supervisor  
Assoc. Prof. Dr. Khalil Md. Nor  
For his unrelenting patience, and  
For the insights and guidance

*And Last but not Least...*

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## ABSTRACT

In this era, knowledge management is one of the important topics in management research. Knowledge-based organizations have started to recognize and value their intellectual capital, as a major resource among other existing resources they have, to achieve competitive advantage. However, a huge amount of knowledge possessed and stored in the individuals instead of organizations. This research focuses on the role that personality traits play in individual's knowledge sharing. The main objective of this study is to investigate the effect of personality traits; agreeableness, conscientiousness and openness to experience on knowledge sharing. In addition, this study also identifies the dominating supervisory type; coach type or mentor type and also examines the level of knowledge sharing for each type. This study used Five-Factor Model of personality, Social Learning Theory and Social Capital Theory as its theoretical foundation. A total of 400 questionnaires was distributed to doctoral students at Universiti Teknologi Malaysia. Two hundred and four usable questionnaires were returned for analysis. Multiple regression and t-test analysis were used to analyze the data. The results of this study indicate that personality traits; agreeableness, conscientiousness and openness to experience significantly affect the level of knowledge sharing of research supervisors in the student –supervisor relationship. Openness to experience was found to be the most influencing element. Furthermore, the results of this study revealed that there is a small difference of numbers between both supervisory types; coach-type and mentor-type, prevented the researcher from concluding one dominating type. It was also found that there is no significant difference in the level of knowledge sharing between coach – type and mentor – type supervisors. Based on the findings, several implications and recommendations were discussed.

## ABSTRAK

Pengurusan pengetahuan adalah salah satu topik penting dalam penyelidikan pengurusan dalam era ini. Demi mencapai kelebihan daya saing organisasi berdasarkan pengetahuan telah mula mengiktiraf dan menghargai modal intelektual sebagai sumber utama berbanding dengan sumber-sumber lain yang sedia ada. Walau bagaimanapun sejumlah besar pengetahuan dimiliki dan tersimpan pada individu dan bukannya pada organisasi. Kajian ini menumpukan peranan trait-personaliti yang dimainkan dalam perkongsian pengetahuan antara individu. Objektif utama kajian ini adalah untuk mengkaji kesan personaliti; sifat akur, sifat berhati-hati dan keterbukaan, terhadap pengalaman perkongsian pengetahuan. Selain itu kajian ini turut mengenal pasti jenis penyeliaan yang dominan; jenis jurulatih atau jenis mentor, dan juga mengkaji tahap perkongsian pengetahuan bagi setiap jenis penyeliaan. Kajian ini menggunakan teori Model Lima Faktor Personaliti dan Modal Sosial sebagai asas teori. Sebanyak 400 naskah soal selidik telah diedarkan kepada mahasiswa ijazah kedoktoran di Universiti Teknologi Malaysia. Sebanyak 204 naskah borang soal selidik telah dikembalikan untuk dianalisis. Regresi berganda dan analisis ujian-t telah digunakan untuk menganalisis data. Hasil kajian menunjukkan trait personaliti; sifat akur, sifat berhati-hati dan keterbukaan kepada pengalaman, sangat mempengaruhi tahap perkongsian pengetahuan penyelia penyelidikan dalam mahasiswa seliaan dengan penyelia. Keterbukaan kepada pengalaman menjadi elemen yang paling mempengaruhi tahap perkongsian ini. Dalam pada itu tidak wujud perbezaan yang signifikan dalam tahap perkongsian pengetahuan antara penyelia jenis jurulatih dengan penyelia jenis mentor. Berdasarkan kepada dapatan kajian beberapa implikasi dan cadangan dibincangkan.

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**LIST OF ABBREVIATIONS**

FFM	Fiver Factor Model of Personality
FKA	Faculty of Civil Engineering
FKBSK	Faculty of Health Science and Biomedical Engineering
FKE	Faculty of Electrical Engineering
FKK	Faculty of Chemical Engineering
FKM	Faculty of Mechanical Engineering
FBB	Faculty of Bioscience and Bioengineering
FPREE	Faculty of Petroleum & Renewable Energy Engineering
FP	Faculty of Education
FPPSM	Faculty of Management and Human Resource Development
FTI	Faculty of Islamic Civilization
FS	Faculty of Science
FSKSM	Faculty of Computer Science and Information Systems
FAB	Faculty of Built Environment
FGHT	Faculty of Geoinformation and Real Estate
KS	Knowledge Sharing
KSB	Knowledge Sharing Behavior
PSZ	Perpustakaan Sultanah Zanariah
PT	Personality Traits
SPS	School of Graduate Studies UTM
UTM	Universiti Teknologi Malaysia

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

Increasingly, organizations are realizing the need to leverage their knowledge workers. The conventional resources, namely finance, land, plant and equipment are not the only resources organizations relying upon (Dawson, 2000), but they should aware that there is a large amount of knowledge available in their most essential resources, the human resources (Gupta, 2000). Knowledge-based organizations are initiating to recognize and value their intellectual capital, as a major resource among other existing resources they have (Sveiby, 1997).

Alavi and Leinder (2001) described that knowledge is an important resource for the organization to achieve its objectives in the competitive environment. In order to achieve the organizational objectives, such as return on investment (ROI), employee-satisfaction, economies of scale, problems solving (Becerra-Fernandez, Gonzalez and Sabherwal, 2004), the stakeholders should understand the importance of knowledge management. One of the major goals of knowledge management is to facilitate the flow of knowledge among individuals and the conversion of knowledge shared to organizational knowledge (Amayah, 2011).



Knowledge sharing is one of the most important elements of knowledge management (Du et al., 2005). Employee performance and innovation are highly associated with knowledge sharing (Bock and Kim, 2005). Hence, in order to develop skills and competencies of employees and sustain competitive advantage of the organization, it is most important to focus on knowledge sharing (Grant, 1996).

## **1.2 Problem Background**

Knowledge sharing is not a new domain for scholars. Variety of work has already been done from many angles of this most important element of knowledge management. Several scholars have studied the impact of different elements on knowledge sharing, including culture (McDermott and O'Dell, 2001); culture types (Suppiah and Sandhu, 2011); internal marketing and organizational culture (Lee and Wen-Jung, 2006); organization climate and resource fit (Chen, 2011); intrinsic and extrinsic motivations (Margit and Frey, 2000); reward and reputation (Chen, 2011); social identification and trust (Ho et al., 2012); interpersonal trust, team leader support, rewards and knowledge sharing mechanisms (Wickramasighe and Widyaratne, 2012); personal reputation (Emelo, 2012), and relationship style (Lee and Yu, 2011).

Being the key element of knowledge management (Du et al., 2005), knowledge sharing helps organizations to develop the value of their workforce and stay competitive in their respective industry and market (Grant, 1996). Research has shown that knowledge sharing is positively related to firm's innovation (Liao and Chuang, 2004), increased productivity (Quiegley et al., 2007), and improved individual and firm's performance (Verburg and Anderiessen, 2011). Consequently, organizations nowadays are creating a culture where all stakeholders can easily access, process and record every business activity to get the most out of their tacit and explicit resources available (Cheng and Chen, 2007).

There is a close relationship between knowledge management and higher learning institutions, as compared to other types of organizations. According to Jain et al. (2007), knowledge sharing is vital in knowledge-based organizations such as universities, since the majority of the employees are knowledge workers. Besides, a major goal of universities is to develop students as competent knowledge workers (Zhao, 2003). Universities promote the pursuit, preservation and transmission of knowledge (Nelson, 2002). Particularly, at a postgraduate level, the higher educational institutions depend critically on knowledge management and knowledge sharing activities. It is to emphasize its role as a centre of excellence (Tjakraatmadja and Martini, 2011), and to improve the quality of research supervision of research students (Yew et al., 2011).

In universities, the research supervisors are actually knowledgeable agents (Edwards, 2002). Yew et al., (2011) described research supervisors as knowledge intensive and primary professional in higher education institutions. Their role has a significant impact on obtaining proposed results (Styles and Radloff, 2001).

Student-supervisor relation is vital to the doctoral research process (Abiddin et al., 2009). It is one form of mechanism where knowledge is being transferred (Zhao, 2003). According to Franke (2011), research supervision can be regarded as a knowledge and relational process. It is a set of activities to nurture and enhance learning, research and communication at the highest level, which takes place in the encounter between doctoral student and supervisor (Laske and Zubert-Skerritt, 1996). In this intensive learning process, the doctoral student is given the opportunity to acquire the knowledge and skills needed to be able to work as an independent researcher (Franke and Arvidsson, 2011). In a study, Zhao (2003) claimed that research supervision contributes to the advancement of scientific knowledge through creating effective learning or research situations and entail opportunities to conduct research projects with students that enhance their own learning, research and reputation. That is why it can be defined as a knowledge sharing, utilization and acquisition experience (Zhao, 2003).

Supervision process involves several complex and knowledge intensive practices that highly depend on the supervisor (Yew et al., 2011). Peason and Brew (2002) argued that, it is evident from previous studies that there is no single defined role for a research supervisor. According to Wisker (2008), while working one-to-one with students, a research supervisor plays a role of coach and mentor as well. Both coaching type and mentoring type supervisory role have strong ties with knowledge sharing. According to Luecke (2004) mentoring provides a path for transferring tacit knowledge by sharing from one to another. On the other hand, coaching helps experts to share their expertise (Blow, 2005).

In addition, supervising also involves working alongside with the students, enabling them to develop their skills so that they can use them in the future (Luecke, 2004; Wisker et al., 2008). There are many skills that very common in supervisor, mentor and coach roles such as listening, empathizing, guiding, referring, supporting, rewarding and helping students (Wisker et al, 2008).

Nevertheless, a huge amount of knowledge is possessed and stored in the individual instead of organization (Kim and Mauborgne, 1998). Based on Teh et al. (2011), individuals differ in their knowledge sharing. It is found that knowledge sharing depends upon their willingness and consent for sharing of their most important assets, such as experience, information and whatever lesson learned throughout their work process and through interpersonal interactions. Amayah (2011) recommended that, for successful implementation of knowledge management initiatives it is essential to investigate what factors may influence the individuals' level of knowledge sharing. Based on Al-Hawamdeh (2003), scholars should also focus on individual perspectives of knowledge sharing, rather than on technological or organizational level factors.

On the individual level, personality traits were examined with respect to knowledge management. In a study, Ismail and Yousif (2010) studied personality in general. In another study, Hsieh et al. (2011) studied the relationship of personality

traits, innovation and mediating role of knowledge management in the biotechnology sector. Recently, Teh et al. (2011) investigated and attempted to develop an integrative understanding of the big five personality traits with knowledge sharing behaviour. According to Matzler et al (2008), personality traits of individuals, such as agreeableness, conscientiousness and openness to experience are the examples of individual factors that may influence knowledge sharing. In a study, Ismail and Yousif (2010) claimed that personality seems to be the most important and correlated with knowledge sharing quality among other factors. Correspondingly, several studies (e.g., Cabrera et al., 2006; Amayah, 2011) argued that personality traits can explain why some individuals are willing to share while others are not. However, according to Mooradian et al. (2006) the effects of individual factors such as personality on knowledge sharing have not been adequately described empirically.

In light of supervisor-student relationship context and individual level of knowledge sharing, there is an opportunity to study the effect of personality traits of research supervisors and their level of knowledge sharing.

### **1.3 Problem Statement**

Studies have been conducted on personality traits and knowledge sharing. In a study on knowledge sharing at the individual level, Hsu et al. (2007) claimed that individual's behaviors and personality characteristics play a role in the outcome and efficiency of knowledge sharing. Based on Matzler et al. (2008), personality traits including agreeableness, conscientiousness and openness to experience have a positive relationship with knowledge sharing. Likewise, in a recent study of knowledge sharing among non-profit organizations (social welfare organizations), Fang and Liu (2011) investigated that personality traits (agreeableness, conscientiousness and openness to experience) are relevant to the willingness and behavior of knowledge sharing.

However, to the researcher's knowledge, research in this field is still limited has considered verifying the relationship of personality traits, namely agreeableness, conscientiousness and openness to experience with knowledge sharing in student-supervisor relationship.

According to Armstrong (2004), insufficient attention has been given to research supervision as a topic requiring scholarly investigation. Correspondingly, Wright et al. (2007) stressed that there is a small body of scholarly studies conducted in student-supervisor relationship context. As such, this research specifically intends to investigate how personality traits of agreeableness, conscientiousness and openness to experience affect the knowledge sharing in a research university and student-supervisor relationship, as there is a lack of research work in such context.

In addition, although many scholars studied coaching and mentoring (Wilson, 2011; Ehrich et al., 2004; Harding, 2006; Phillips, 1994; Phillips, 1996; Veale, 1996; Karkoulian et al., 2008), but most of them discussed it in general, presented different conceptual models and some reviewed the literature that is already available. What is missing from the literature is a deeper understanding of the different roles that supervisors conceive for themselves and how they enact these roles in the everyday practice of supervision (Wright et al., 2007).

Moreover, there is very limited number of studies available on coaching and mentoring with knowledge sharing. Therefore, this study is focusing on the student - supervisor relationship, particularly the relationship of personality traits with knowledge sharing, identifying the dominating supervisory role as mentor-type or coach-type supervisor, and also examining the level of knowledge sharing for each type. This empirical study helps to verify how individual's characteristics influence knowledge sharing and which supervisory type has a higher level of knowledge sharing.

## **1.4 Research Questions**

To address the underlying issues pertaining in this study, the following questions are raised;

1. Does agreeableness effect research supervisor's level of knowledge sharing in student – supervisor relationship?
2. Does conscientiousness effect research supervisor's level of knowledge sharing in student – supervisor relationship?
3. Does openness to experience effect research supervisor's level of knowledge sharing in student – supervisor relationship?
4. Which of the supervisory type is dominating in research supervision? Mentor-type or coach-type?
5. What is the level of knowledge sharing of coach-type supervisor and mentor-type supervisor?

## **1.5 Objectives**

In general, this study helps to understand the relationship between personality traits and knowledge sharing. Specifically, this study is based on questions structured above, so basic aims of this study is to verify empirically the objectives mentioned below:

1. To study whether agreeableness has a positive effect on the supervisor's level of knowledge sharing with students.
2. To study whether conscientiousness has a positive effect on the supervisor's level of knowledge sharing with students.
3. To study whether openness to experience has a positive effect on the supervisor's level of knowledge sharing with students.
4. To identify the dominating type of supervisor, whether it's coach-type or mentor-type?
5. To investigate the level of knowledge sharing of coach-type supervisor and mentor-type supervisor.

## **1.6 Hypothesis**

H1: Agreeableness has a positive significant influence on knowledge sharing.

H2: Conscientiousness has a positive significant influence on knowledge sharing.

H3: Openness to experience has a positive significant influence on knowledge sharing.

H4: Mentor has a higher level of knowledge sharing in a supervisory role as compared to coach.

The supports of these hypotheses are discussed in detail in chapter 2.

## **1.7 Scope and Limitations of the Study**

The scope of the study helps researcher to carry out the study according to the objectives of the study. The scope of this study is as below:

The study focuses on investigating the influence of personality traits (agreeableness, conscientiousness and openness to experience) on knowledge sharing in student-supervisor relationship at Universiti Teknologi Malaysia (UTM). Besides, the study identifies the dominating supervisory type, i.e., mentor-type or coach-type, and investigates that who has higher level of knowledge sharing.

As sample belongs to University Teknologi Malaysia (UTM), the results of this study represent such institution only. It is not necessary that finding of this study can be generalized to other institutions or organizations in the same or a different manner. The further limitations are discussed in detail in chapter 5.

## **1.8 Significance of Study**

Knowledge sharing is important to develop skills and competencies, increase value and sustain competitive advantages, because innovations occur when people share and combine their personal knowledge with others. Therefore, the aim of this study is to understand the individual factors (in terms of personality) affecting the level of knowledge sharing of research supervisors. This study contributes a great



understanding of knowledge sharing in higher education institution in a number of ways.

First, in recent years many studies have been conducted in the area of knowledge sharing but the role of personality traits has been less researched in knowledge sharing literature. The findings of this study make a relevant contribution to the literature on the empirical investigations of personality traits and knowledge sharing.

Second, it was the aim of the study to assist higher education institution determining the individuals' factors (in terms of personality) that encourage knowledge sharing. Therefore, this study contributes to the existing literature by providing higher education institution with ways to encourage knowledge sharing in student – supervisor relationship.

Furthermore, the findings of this study may help academic authorities to know the overall perceptions of postgraduate students on their supervisors. Lastly, the outcomes of this study can be helpful and may serve hiring authorities as a guideline, advancing knowledge sharing via personnel screening.

## **1.9 Conceptual and Operationalization Definition**

This section discusses the conceptual definitions from previous research and literature that associates with the constructs of this research. Taking this conceptual discussion as the guideline, the operational definitions of the constructs are also discussed below.

### **1.9.1 Knowledge Sharing:**

According to (Wang and Noe, 2010), Knowledge sharing can be defined as the “provision of task information and know-how to help others and to collaborate with others to solve problems, develop new ideas or important policies or procedures”. Lee and Al-Hawamdeh (2002) conceptually defined KS as an intentional act that makes knowledge reusable by other people through transfer”. Based on Hislop (2002), Knowledge sharing is a process of exchanging ideas to create new knowledge.

In this study, knowledge sharing is defined as “a voluntary act in which knowledge is transmitted and distributed from one individual to others” (Adapted from Bock and Kim, 2002). This study focuses on the “give side” of knowledge sharing. In other words, the degree to which a research supervisor actually shares his or her knowledge, such as know-how, expertise and other research material, with his or her doctoral students. It refers to the actual behavior of knowledge sharing.

### **1.9.2 Mentor**

According to Ehrich et al (2004), “mentor originally refers to a father figure who sponsors, guides and develops a young person”. It can be defined as a “relationship between an older and more experienced mentor and less experienced, younger protégé with the intention of developing and helping protégé career” (Kram, 1985).

In this study, mentor represents the mentor-type supervisor, in a student-supervisor relationship context. It is defined as a relationship which focuses on student’s personal growth and long-term personal career development. Besides, in

this relationship, supervisor more on listening, making suggestions rather than feedback only, and the student is in-charge of his learning (Adapted from Luecke, 2004; and Wisker et al., 2005).

### **1.9.3 Coach**

Cavanagh (2006) defined Coach as a “guide”. According to Parsloe (1995), coaching can be described as “to train, to tutor and to prime with facts and to give hints”. Coaching is a two-way communication process, when learners, who are expected to be coached, deliver results, coaches will give feedback and let learners adjust again (Champathes, 2006).

In this study, coaching represents the coach-type supervisor, in a student-supervisor relationship context. It is defined as a student-supervisory relationship with characteristics such as problem-centred, temporary and more on feedback. In this relationship learning mostly directed by supervisor rather than the student (Adapted from Luecke, 2004; and Wisker et al., 2008).

### **1.9.4 Agreeableness:**

According to Barrick and Mount (2004), the employees high on agreeableness are forgiving, good natured, cooperative, generous and cheerful. They look for cooperation rather than competition (Liao and Chuang, 2004) and it also involves getting along with others in pleasant and satisfying relationships (Organ and Ryan (1995).

In this study agreeableness is a personality trait, represents individual's characteristics, such as trust, straightforwardness, altruism, compliance, modesty and tender-mindedness (Adapted from Costa and McCrae, 1992).

#### **1.9.5 Conscientiousness:**

Bozionelos (2004) described that "conscientiousness is associated with a sense of duty, industriousness and perseverance." Barrick and Mount (1991) defined the characteristics of individuals with high conscientiousness, such as dependable, dutiful, organized, achievement oriented and hardworking.

In this study, conscientiousness is a personality trait represents individual's characteristics, such as competence, order, dutifulness, achievement striving, self-discipline, deliberation (Adapted from Costa and McCrae, 1992).

#### **1.9.6 Openness to experience:**

"Openness to experience is linked with multiplicity of interests, flexibility of thoughts, receptivity of new ideas and tendency to develop idealistic ideas and goals" (Bozionelos, 2004). In another definition, Digman (1990) defined that openness to experience shows creativity, flexible thinking and intellectual curiosity.

In this study Openness is a personality trait, represents individual's characteristics, such as "active imagination, fantasy, aesthetics, feelings, actions, ideas, values, preference for variety and independent of judgement" (Adapted from Costa and McCrae, 1992).

### **1.9.7 Personnel Screening**

In this study personnel screening is defined as recruitment and selection technique which helps organization to hire, form or compose teams and research groups including individuals with a high degree of agreeableness, conscientiousness and openness to experience.

### **1.9.7 Research Supervision:**

Research Supervision can be defined as a “set of activities to nurture and enhance learning, research and communication at the highest level (Laske and Zubert-Skerritt, 1996). Based on Gray and Roy (2005), “research supervision is a form of mentorship, guiding and helping students through the complex and challenging process of research”.

In this study search supervision is defined as “a student-supervisor relationship between a doctoral (PhD) student and a research supervisor”.

### **1.10 Chapter Summary**

This chapter consists of introduction and an overview of problem background, leading to the problem statement. Research questions, objectives and hypothesis are generated on the basis of the problem statement. It is followed by the scope and significance of the study. At the end operational definitions are discussed for better understanding of the constructs of this study.

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